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ADVANCED BIOFUELS UNDER THE RENEWABLE FUEL STANDARD: CURRENT STATUS AND FUTURE PROSPECTS

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

JUNE 22, 2018

Serial No. 115–144



Printed for the use of the Committee on Energy and Commerce
energycommerce.house.gov

U.S. GOVERNMENT PUBLISHING OFFICE
35–142 WASHINGTON : 2019

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[1] The attachments to Mr. McAdams' statement can be found at: *https://docs.house.gov/meetings/IF/IF18/20180622/108464/HHRG-115-IF18-Wstate-McAdamsM-20180622.pdf.*

ADVANCED BIOFUELS UNDER THE RENEWABLE FUEL STANDARD: CURRENT STATUS AND FUTURE PROSPECTS

FRIDAY, JUNE 22, 2018

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT,
COMMITTEE ON ENERGY AND COMMERCE
Washington, DC.

The subcommittee met, pursuant to call, at 9:17 a.m., in room 2322, Rayburn House Office Building, Hon. John Shimkus, (chairman of the subcommittee) presiding.

Present: Representatives Shimkus, Harper, Olson, Johnson, Flores, Cramer, Walberg, Duncan, Ruiz, Peters, Green, McNerney, Cardenas, and Matsui.

Staff Present: Samantha Bopp, Staff Assistant; Kelly Collins, Legislative Clerk, Energy/Environment; Wyatt Ellertson, Professional Staff, Energy/Environment; Margaret Tucker Fogarty, Staff Assistant; Theresa Gambo, Human Resources/Office Administrator; Mary Martin, Chief Counsel, Energy/Environment; Sarah Matthews, Press Secretary; Austin Stonebraker, Press Assistant; Jean Fruci, Energy and Environment Policy Advisor; Caitlin Haberman, Professional Staff Member; Rick Kessler, Senior Advisor and Staff Director, Energy and Environment; Alexander Ratner, Policy Analyst; and Catherine Zander, Environment Fellow.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. The Subcommittee on Environment will now come to order. And the chair recognizes himself for 5 minutes for an opening statement.

This is our fourth hearing this year specifically aimed at addressing issues related to fuels and vehicles. The first provided an overview of the future of fuels and vehicles. The second took a detailed look at the high octane concept. The third focused on electric vehicles as a small but growing part of the vehicle mix.

In each of these hearings, the renewable fuel standard was a part of the discussion, which is not surprising because this program continues to have a significant impact on the fuels market. But most of the RFS focus thus far has been on corn ethanol and related issues, like blend wall, and not the advanced biofuels part of the program.

Today, we address the imbalance by having a discussion focused entirely on advanced biofuel issues. And I welcome our witnesses who represent those operating in that space.

Biodiesel is every bit as important to my soybean growers as ethanol is to my corn growers. And both biodiesel and cellulosic production facilities are significant job creators in the local communities where they are located, including in my district in southern Illinois.

So the economic impact of advanced biofuels cannot be ignored. The 2007 changes to the RFS envisioned a transition from first-generation biofuels to more advanced biofuels. In fact, the RFS statutory targets for 2022 call for 21 billion gallons of advanced biofuels while corn ethanol and other first generation would top out at no more than 15 billion gallons. The future is going to include a great deal more advanced biofuels.

The reality has been somewhat mixed. For biodiesel, the production capacity has grown significantly, and billions of gallons are now added to the Nation's diesel supply each year. In that regard, the RFS provisions for biodiesel have been a success. But biodiesel remains expensive compared to petroleum-based diesel fuel, and there has been little progress, making it more cost competitive.

Unfortunately, cellulosic biofuels have not progressed as well as hoped. Congress was convinced in 2007 that cellulosic biofuels were just around the corner. But more than a decade later, we are still waiting for liquid cellulosic biofuels to make a significant contribution.

Biogas from landfills has been a main source of cellulosic biofuels. Investors in cellulosic facilities point to the need for certainty and that the policy surprises coming from EPA and the White House undercut that certainty. Critics say that including cellulosic biofuels in the RFS was a flat out mistake, especially now that the fracking revolution has reduced dependence on foreign oil.

So some want to double down on incentivizing cellulosic biofuels while others want to pull the plug on the idea. Interesting times. It is important to note that, as we consider various RFS reform ideas, including the transition to high-octane fuels, we need to be mindful that biodiesel and cellulosic provisions need to be part of the conversation and addressed as well. All of these parts are interrelated. Thus, the future of advanced biofuels is tied up with the future of the RFS.

I look forward to the hearing from today's witnesses and the members in order to engage in a meaningful dialogue on this topic. And looking to my side, anyone wishing my remaining minute and a half.

Seeing none, I will yield back my time and yield to the ranking member right now of the subcommittee, Mr. McNerney, of California.

[The prepared statement of Mr. Shimkus follows:]

STATEMENT OF HON. JOHN SHIMKUS

This is our fourth hearing this year specifically aimed at addressing issues related to fuels and vehicles. The first provided an overview of the future of fuels and vehicles, the second took a detailed look at the high-octane concept, and the third focused on electric vehicles as a small but growing part of the vehicles mix. In each

of these hearings, the Renewable Fuel Standard was a part of the discussion—which is not surprising because this program continues to have a significant impact on the fuels market. But most of the RFS focus thus far has been on corn ethanol and related issues like the blendwall, and not on the advanced biofuels part of the program. Today, we address this imbalance by having a discussion focused entirely on advanced biofuels issues, and I welcome our witnesses who represent those operating in that space.

Biodiesel is every bit as important to my soybean growers as ethanol is to my corn growers, and both biodiesel and cellulosic production facilities are significant job creators in the local communities where they are located, including in my district in Illinois. So, the economic impact of advanced biofuels cannot be ignored.

The 2007 changes to the RFS envisioned a transition from first generation biofuels to more advanced biofuels. In fact, the RFS statutory targets for 2022 called for 21 billion gallons of advanced biofuels while corn ethanol and other first generation would top out at no more than 15 billion gallons. The future was going to include a great deal more advanced biofuels.

The reality has been somewhat mixed. For biodiesel, the production capacity has grown significantly and billions of gallons are now added to the nation's diesel supply each year. In that regard, the RFS provisions for biodiesel have been a success. But biodiesel remains expensive compared to petroleum-based diesel fuel, and there has been little progress making it more cost competitive.

Unfortunately, cellulosic biofuels have not progressed as well as hoped. Congress was convinced in 2007 that cellulosic biofuels were "just around the corner" but more than a decade later we are still waiting for liquid cellulosic biofuels to make a significant contribution. Biogas from landfills has been the main source of cellulosic biofuels.

Investors in cellulosic facilities point to the need for certainty and that the policy surprises coming from EPA and the White House undercut that certainty. Critics say that including cellulosic biofuels in the RFS was a flat-out mistake, especially now that the fracking revolution has reduced dependence on foreign oil. So, some want to double down on incentivizing cellulosic biofuels, while others want to pull the plug on the idea.

It is important to note that as we consider various RFS reform ideas, including a transition to high-octane fuels, we need to be mindful that the biodiesel and cellulosic provisions need to be part of the conversation and addressed as well. All of the parts are interrelated; thus, the future of advanced biofuels is tied up with the future of the RFS.

I look forward to hearing from today's witnesses and the members, in order to engage in a meaningful dialogue on this important topic.

Thank you.

I yield back the balance of my time.

OPENING STATEMENT OF HON. JERRY MCNERNEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. MCNERNEY. Well, I thank the chairman. Good morning.

And I thank the witnesses for coming here this morning.

An important goal of the renewable fuel standard program is to promote fuel diversity and lower consumer and environmental costs of transportation fuels. Until Congress created the RFS program, the transportation sector relied exclusively on fossil fuels. Our overdependence on these fuels has made consumers and our economy vulnerable to price spikes and supply disruptions at various times in the past. Decades of fossil fuel use have unleashed massive volumes of harmful air pollutants and carbon emissions. Developing cleaner fuels must be part of the solution to these ongoing challenges.

Growth in the use of advanced biofuels fuels far short of what Congress anticipated when this program was expanded in 2007. The industry has made progress, but technical and economic challenges are still holding back greater use of these fuels. I believe the

witnesses here today will all be offering some suggestions on how we can improve the investments and marketing climate for advanced renewable fuels.

The advanced biofuel program is very important to my home State of California. This Federal program helps California to meet its goal for low carbon fuels. Regulatory programs, like California's low-carbon fuel standard and Federal RFS program, help the early market incentives needed to spur investments in cleaner fuels. Biodiesel, biogas, and cellulosic ethanol are needed to reduce carbon emissions and other harmful air pollutions from the transportation sector. Reducing carbon emissions from the transportation sector is a big challenge, but it is one that we must take since emissions in this sector do continue to grow.

The good news is that, despite these challenges, investments in alternate fuels are being made. And these investments are creating jobs and increasing the supply of alternative fuels in California.

There are several facilities in my district, and a new biogas facility is under construction. If we want to see these investments continue, investors must be convinced that there will be a market for these fuels. The uncertainty created through the EPA's delays in rulemaking and in approval of new biofuel pathways are among the challenges with the RFS program that affect advanced biofuel investments.

Clearly, the management of the program is an important factor in ensuring steady progress for new fuel technologies. Unfortunately, it appears that Administrator Pruitt has used his waiver authority to create additional uncertainty in the renewable fuels market. The Administrator's decision to grant unprecedented numbers of waivers to some refiners through a process with no transparency calls into question the target amount of biofuel that the market and its participants will be using. Conventional ethanol still makes up the bulk of the renewable fuel markets.

But I suspect that reducing the number of refineries obligated to blend biofuel will affect the market for all biofuels, including biodiesel and advanced biofuels. Whatever the faults of the RFS program, manipulating markets through a secret waiver process that calls the program into question is not the way to address those faults. Our committee should be looking into this and ensuring that the Administrator is managing the program accordance with the law.

Again, I want to thank the participants and the witnesses, and I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

Let me apologize to the folks here for the heat of this room. And I think the air has kicked on. So maybe we are going to feel a little bit cooler. And this is a note to committee staff to make sure that it stays cool.

Mr. MCNERNEY. Mr. Chairman, this room is either too hot or too cold.

Mr. SHIMKUS. And this issue might be a little too hot or too cold for a lot of people.

So, looking on the majority side, anyone seeking time to make a statement?

Seeing none, looking on the minority.

The chair recognizes the gentleman from Texas, Mr. Green, for 5 minutes.

OPENING STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. GREEN. Thank you, Mr. Chairman. I want to thank you and both the ranking member for holding the hearing today. Most people here know that I am not really a big a big fan of the renewable fuel standard, the RFS.

The RFS has led to artificially inflated costs thrust upon both refiners and our consumers for a product that hasn't had the environmental impact reduction that was promised when the RFS was created.

A few years ago, our district had three small biofuel refineries, but the market cratered, and I think I have one left. Although in our area, I don't have small refiners. They are 100,000 barrels, 250,000 barrels. And so that is one of my concerns.

I look forward to hearing from our witnesses today, specifically about the RFS interaction with advanced biofuels market. While I think the RFS program is inherently flawed, I do not believe waivers given out in secret without established processes is a good use of Administrator Pruitt's authority. I am afraid that, while many of these smaller refineries have received waivers, the larger ones who do not will still have to meet the overall blend requirements which satisfy the RFS program.

Thank you again for calling this hearing.

Mr. SHIMKUS. The gentleman yields back his time.

We now conclude with members' opening statements. The chair would like to remind members that, pursuant to committee rules, all members' opening statements will be made part of the record.

We want to thank all our witnesses for being here today and taking the time to testify before the subcommittee. Today's witnesses will have an opportunity to give opening statements followed by a round of questions from the members present.

Our witness panel is before us, and I would personally also like to thank you all for coming. I have some folks from Illinois and actually my congressional district. And we will recognize them appropriately when we get a chance to do that.

I would like to start with Mr. Mike McAdams, President of Advanced Biofuel Association. Sir, your full statement is in the record. You have 5 minutes. Welcome.

STATEMENTS OF MIKE MCADAMS, PRESIDENT, ADVANCED BIOFUELS ASSOCIATION; DERRICK MORGAN, SENIOR VICE PRESIDENT, AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS; ROBIN PUTHUSSERIL, VICE PRESIDENT, GREATER CHICAGO TRUCK PLAZA, ON BEHALF OF THE NATIONAL ASSOCIATION OF TRUCK STOP OPERATORS; RANDY HOWARD, CEO, RENEWABLE ENERGY GROUP, ON BEHALF OF THE NATIONAL BIODIESEL BOARD; BROOKE COLEMAN, EXECUTIVE DIRECTOR, ADVANCED BIOFUELS BUSINESS COUNCIL; COLLIN OMARA, PRESIDENT, NATIONAL WILDLIFE FEDERATION; AND LUKE MORROW, MANAGING DIRECTOR, MORROW ENERGY, ON BEHALF OF THE COALITION FOR RENEWABLE NATURAL GAS.

STATEMENT OF MIKE MCADAMS

Mr. MCADAMS. Thank you, Mr. Chairman, Ranking Member, members of the committee. It is nice to be with you this morning.

My name is Mike McAdams. I am the President of the Advanced Biofuels Association. I welcome the opportunity to testify this morning on the current status and the future prospects of the RFS program. I want to thank Chairman Shimkus and members of the committee for your efforts over the last year to reform the RFS.

ABF members strongly support RFS reform. ABFA represents 35 companies across the entire biofuels distribution chain who produce the fuels, distribute the fuels, and market advanced biofuels under the RFS program. Our combined production is over 4 billion gallons per year currently. The RFS has resulted in both great successes as well as shortfalls. We believe comprehensive reform will maximize future volumes of advanced and cellulosic fuels for the future.

On the success front, the production and use of biodiesel and renewable diesel is three times greater than what was originally anticipated and is now approaching 3 billion gallons per year. The environmental performance of these gallons achieve GHG reductions of up to 80 percent off of baseline fuel. This sector also continues to hold great potential as the United States diesel market is over 50 billion gallons a year and growing.

In this space, we can deliver not only biodiesel, but we can also deliver drop-in diesel and jet fuel for a growing airline industry.

As for advanced and cellulosic fuels, I urge the committee to address numerous barriers of entry in the RFS program that specifically disadvantages the innovative fuels of the future. I have provided the committee with ABFA's list of 21 RFS reform proposals for you to review. These proposals fall into three broad categories: one, address definitional and technical issues; two, clarify statutory ambiguities; and, three, tweak certain overly burdensome regulatory frameworks which are currently in place. As much as possible, we urge the Congress in making these changes to the statute, to take the politics out of the equations and make the RFS a rules-based system as much as possible. An example of this is Congressman Welch's legislation to amend the annual RVO process. His bill would base the RVO on the previous year's actual production, queuing up at midyear and end-year adjustments to account for increases or decreases in production. This approach would remove the uncertainty and therefore reduce voluntarily in the RIN mar-

ket. It also diminishes the need for using waivers when you set the RVO, especially the use of cellulosic waivers. Additionally, the cellulosic waiver system must be reformed so that RINs attached to actual cellulosic gallons are purchased before we use the waiver credits in their place.

Finally, in order to finance the production of new and advanced biofuels of the future, investors must have certainty over time that there will be the value of the RIN standing behind them. A 20-year guarantee would provide that certainty and encourage much more investment in this space as it is tied to the average debt frame for a capital loan.

Among ABFA's 21 proposals are suggestions to permit the use of a broader range of technologies and feedstocks via pathway approval reform. For instance, Chairman Walden has been working on a number of fixes for the wood-based fuels that would allow the growth for pyrolysis, one of the promising technologies in the cellulosic space. Currently, three of ABFA's members are building cellulosic plants in the United States with this technology.

In conclusion, I urge the committee to review EPA's recent actions regarding the small refinery exemptions which have had significant impacts on the RIN market. Administrator Pruitt has recently chosen to lower the thresholds that EPA utilizes to grant RFS compliance exemptions to small refineries. Press reports state that EPA has granted up to 30 exemptions for years 2016 and 2017, three times what we have ever previously seen. These actions have undermined the program and rendered the RVO mandates meaningless. ABF urges the committee to review EPA's applications of these thresholds and the lack of transparency surrounding these decisions.

Thank you again for the opportunity to testify. And I look forward to your questions.

[The prepared statement of Mr. McAdams follows:]

Testimony, Michael McAdams
President, Advanced Biofuels Association
House Energy & Commerce Committee, Environment Subcommittee

Friday, June 22, 2018

Executive Summary

The members of the Advanced Biofuels Association strongly support efforts by the House Energy and Commerce Committee to update and reform the RFS program.

Ten years have passed since this program was originally designed and a great deal has been learned about the strengths and weaknesses of the RFS. Since 2007, EPA has been forced to grapple with challenges applying the statute to a wide range of circumstances that could not be considered when the law was first passed. The Committee now has an opportunity to address the shortcomings of the statute, and we urge you to do so.

Today, there are far broader technology options than the first-generation ethanol or biodiesel processes available at the program's inception. This must be kept in mind in order to produce the advanced and cellulosic fuels of the future. On the success front, biodiesel production is three times what was originally anticipated. If a rules-based system is used as the basis for the annual RVO and the small refinery exemptions are used appropriately, biodiesel will continue to be the largest source of high GHG-reduction fuels in the short and medium term. Not to mention that these fuels have created good competition in the marketplace and reduced fuel costs for millions of truck drivers across the country.

ABFA members support top-line provisions including:

1. **A rules-based process for setting the annual RVO mandates** that bases the RVO on actual gallons produced in the previous compliance year. Mid-year and end-of-year adjustments would account for increases or decreases in production.

2. **Clarification on the cellulosic waiver credits** so that those credits can only be used after the cellulosic RINs generated from actual fuels are used. In this case, the credits would only be needed if there was a shortfall of RINs available preventing achievement of the annual RVO. Our proposed RVO fix takes care of this issue.

3. **Guarantee the RINs generated by advanced and cellulosic facilities for a minimum of 20 years** to attract capital and build the next generation of industry.

This testimony identifies a number of specific ambiguities in the existing statute that must be addressed to allow the use of a broader range of technologies and feedstocks. Additionally, we have made a number of suggestions to address issues that need to be resolved immediately, such as the treatment of biointermediate feedstocks and fuels generated from facilities that are not co-located.

Finally, ABFA members ask the Committee to specifically revisit the provisions allowing EPA to grant exemptions to small refineries, as we believe the EPA Administrator has overused this provision. Granting too many of these exemptions undercuts the very essence of the program and, if it is not addressed, renders the entire RVO process meaningless.

WRITTEN TESTIMONY OF MICHAEL MCADAMS
PRESIDENT, ADVANCED BIOFUELS ASSOCIATION

HOUSE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON ENVIRONMENT

HEARING ON "ADVANCED BIOFUELS UNDER THE RENEWABLE FUEL STANDARD: CURRENT STATUS AND FUTURE PROSPECTS"

FRIDAY, JUNE 22, 2018

Mr. Chairman, Mr. Ranking Member, and Members of the Subcommittee:

My name is Michael McAdams and I am the President of the Advanced Biofuels Association (ABFA). I'd like to thank you for the opportunity to testify this morning on the current status and future prospects of the RFS program. As you all know, the RFS has resulted in both great successes as well as underperformance in the advanced and cellulosic spaces. Today, I will address the good news as well as the shortfalls and discuss potential RFS enhancements as a follow-up to the conversations held by the Committee last year.

The Advanced Biofuels Association represents over 35 companies who produce, distribute and market advanced biofuels approved under the RFS2 program. We represent over four billion gallons of biodiesel and renewable diesel as well as the two largest distributors and marketers of biodiesel and renewable diesel in the United States. Three of our members alone distribute over 20 of the 55 billion gallons of diesel fuel used annually in the United States, operating in all of the lower 48 states. In total, our members' domestic biodiesel production is close to 50% of all the biodiesel produced in the United States, and our international footprint includes the world's largest producers of both biodiesel and renewable diesel. In the cellulosic space, ABFA represents three of the new plants breaking ground this year - Fulcrum, Red Rock, and Ensyn – these plants will produce drop-in diesel fuel, gasoline, and jet fuel.

Before I begin, a reminder that there are two very distinct fuel markets in the United States: diesel and gasoline. As I suggested during the stakeholder meetings last year, these markets are very different and need to be considered independent of each other. Growth in the diesel market will continue to exceed the

gasoline market worldwide, and some renewable diesel production facilities will also make "drop-in" gasoline components and jet fuels. Should the Committee choose to move forward on RFS reform, which ABFA supports and believes is critical to the development of the advanced biofuels sector, it's important to bear in mind the distinctions between gasoline, diesel, and jet fuel.

In addition to my written testimony, I have attached a list of suggestions to address issues with the existing statute that ABFA members believe need to be resolved legislatively. We believe these changes will enhance our collective opportunity to deliver the next generation of advanced biofuels. (See Appendix A.)

Let me begin by stating again that ABFA strongly supports your efforts to reform the RFS. We believe that comprehensive reform will actualize the vision for advanced renewable fuels that this Committee and Congress as a whole overwhelmingly supported when it passed the RFS2 in 2007. These fuels will extend our hydrocarbon resources, allowing us to incorporate into our fuel supply renewable resources developed both sustainably and affordably on a standalone economic basis. Proper reform of the RFS will distribute biofuels to all regions of our great country. It will also utilize a far more diverse set of feedstocks and technologies while creating jobs across the entire U.S. It is to that end that we look forward to working with you on your efforts to strengthen the RFS and make the industry even more efficient, economically competitive, and sustainable.

Advanced Biofuels Successes Under the RFS

First, I'll turn to what is without a doubt the overwhelming success story in the advanced biofuels space under the RFS program: biodiesel and renewable diesel. The program originally called for 1 billion gallons of biomass-based diesel; in the last two years, over 2.7 billion gallons has been used annually in the U.S. This year, the market should again approach 3 billion gallons of biomass-based diesel. (See Appendix B for RINs and gallons generated in 2016 and 2017 according to EPA EMTS data.)

For those of you interested in climate change, advanced biofuels deliver the most significant GHG emissions reductions of all the fuels manufactured in the United States. By law, the environmental performance of these gallons deliver reductions of at least 50%, and many of them deliver reductions of 80%. These fuels count toward meeting the biomass-based diesel category, referred to in the program compliance world as the D4 diesel pool, though many of these processes also produce at least 10% renewable gasoline components that qualify for the general advanced category, referred to as the D5 advanced biofuels pool.

This achievement has been accomplished since 2010 in spite of the uncertainty surrounding the biodiesel blenders tax credit. The on-again, off-again implementation of the credit limits the future investment in the market that is a key driver for growth. This year, the diesel market is unfortunately once again forced to operate without knowing whether the credit will be retroactively renewed for 2018.

Suggestions for RFS Reform

I'll turn now to improvements that can be made to the RFS program. The biogas industry has helped deliver the majority of the existing volume in the cellulosic biofuel space, which reached over 250 million gallons last year. However, we still have a long way to go to achieve the targets originally envisioned for the cellulosic sector in the RFS2. As ABFA suggested in last year's stakeholder meetings, the changes needed to make the program function as intended for the advanced and cellulosic sectors fall into three categories. One, simple statutory adjustments to timeframes, definitions, and other items found in our attached list; two, addressing major, debilitating ambiguities in the statute; and three, adjusting EPA's regulatory framework using a common-sense approach. As much as possible, we urge Congress to take politics out of the equation by adjusting the RFS toward being a rules-based system.

A. Statutory adjustments

The Committee should consider starting with adjusting how the annual RVO is set. ABFA commends Congressman Welch for his efforts to address this issue in his recently introduced legislation, H.R. 5212, the GREENER Fuels Act. This proposal would shift the compliance period for the RFS, releasing the annual RVO on March 1 with the mandates for each pool set at previous year's levels according to data from EPA's EMTS system. Mid-year and end-of-year adjustments would then account for increases or decreases in production. This rules-based system would remove the uncertainty and speculation surrounding the RVO and therefore reduce volatility in the program and RIN market.

The second key statutory issue is the cellulosic waiver credit. EPA currently grants as many cellulosic waiver credits as gallons projected for the forthcoming year under the RVO process. This allows obligated parties to purchase waivers in lieu of purchasing cellulosic fuel actually produced. This undermines the potential of the very fuels the RFS2 sought to encourage. EPA should only grant waiver credits to cover any shortfall in actual production relative to the RVO mandates. The RVO process fix I previously outlined would eliminate this issue.

Third, to finance the production of the advanced liquid transportation fuels of the future, investors must have certainty in the value of the RIN well beyond 2022. The Committee must designate a minimum number of years for which these fuels will be able to generate a RIN under the program. To best facilitate investment, we suggest a minimum 20-year timeframe for the life of the advanced biofuel program as that is the general term of debt for most capital loans.

B. Addressing statutory ambiguity

EPA's treatment of one-cell organisms is a prime example of the ambiguity in the statute and its negative impact on advanced biofuels development. Currently, we allow one-cell organism pathways for algae, but not bacteria. Another example: the statute includes "waste" as a permissible feedstock, but it is unclear what is meant by this term. Is tall oil a "waste," given that it is only 2% of the residue from a tree?

I know of a company that hoped to build a plant in Maine, but because of EPA's interpretation of the language in the law, the Agency could not definitively determine that tall oil could count under the

definition for use in the capacity it was requested. Ultimately, the company sited this plant in Sweden to use tall oil and make renewable diesel. I also know of a one-cell organism technology which was forced to site its plant in China instead of the U.S. because the law specifically cites fuels produced from algae as acceptable and not fuels produced from bacteria under the definitions for RFS-compliant fuel. Again and again, because of this statutory ambiguity, EPA has been forced to make subjective judgments that have rendered the U.S. market less attractive for advanced renewable fuel producers.

C. Regulatory changes

The RFS's regulatory framework has created barriers to the advanced and cellulosic sector unintended by Congress.

A prime example of this issue is the RFS's treatment of biointermediates which are approved feedstocks that are only partially processed at one facility and then finished into a compliant renewable fuel at another. EPA has taken the stance that plants generating biointermediates and the final fuel must be co-located in order to generate a RFS-compliant fuel. Additionally, a refiner engaging in co-processing and upgrading to processing fuels from a renewable oil must currently use carbon-14 dating to prove its conversion rate for compliance with the RFS. This is unrealistic for most refineries, as carbon-14 dating is prohibitively expensive, especially when renewable oils usually comprise less than 10% of the slipstreams being co-processed at these facilities.

Such regulatory requirements have missed the forest for the trees, driving up the cost of compliance and making renewably-produced fuels uncompetitive compared to incumbent hydrocarbon fuels.

Another example of a devastating regulatory issue with the RFS program is the treatment of wood. I thank Chairman Walden for his leadership in trying to work with EPA to address the challenges in the wood space, as this issue has killed a number of good projects in the U.S.

EPA's regulations currently require producers to segregate wood so as to track whether the wood residues come from approved sources for RFS-compliant fuel. However, the wood products industry has long-established operational processes that make it nearly impossible to know where each and every stick

of wood used in biofuel production comes from. This has blocked industry from moving forward with many new technologies that would transform wood into renewable fuels, including jet and diesel fuel. EPA's regulations need revision to allow for an aggregated, mass-balance approach to compliance in lieu of segregation, lowering the cost of production to competitive levels.

Furthermore, as it stands, landowners in many states may cut down a naturally regenerating tree to create pellets that are shipped to Germany, but they cannot use even the thinnings and cuttings from such wood to make an RFS-compliant fuel. This is not just a regulatory issue but a direct result of the legal interpretation of the statutory language. This is simply foolish.

Small Refinery Exemptions

In addition to these longstanding issues, EPA Administrator Pruitt has recently chosen to unilaterally lower the threshold that EPA utilizes to grant RFS compliance exemptions to small refineries. Based on what has been reported in the press, we suspect that EPA has granted up to 30 exemptions for small refineries in compliance years 2016 and 2017 - three times what we have seen previously. According to EPA's own May 14 presentation to OMB, this alteration will create over 1.2 billion additional carry-over RINs for use in the 2018 compliance year. EPA documentation also predicts 2.8 carry-over RINs for 2019 – which leads one to believe that the Agency may be intending to follow a similar approach next year for granting exemptions.

The significantly higher number of these small refinery exemptions stand to reduce the demand for renewable fuel by flooding the market with RINs that do not reflect current production and available physical supply of product, despite a growing annual RVO. This process must be halted, as it is undermining the very RVO process in and of itself.

EPA is misusing this provision, stretching the definition of "disproportionate economic hardship" in order to lower RIN prices for the benefit of a small number of merchant refiners that have refused to invest in RFS compliance over the last ten years. As RFS compliance costs were already passed along to consumers through the crack spread, EPA's actions allow a small number of companies to profit off of

[The attachments to Mr. McAdams' statement can be found at: *https://docs.house.gov/meetings/IF/IF18/20180622/108464/HHRG-115-IF18-Wstate-McAdamsM-20180622.pdf.]*

Mr. SHIMKUS. Thank you. The gentleman yields back his time.

The chair now recognizes Mr. Derrick Morgan, Senior Vice President of American Fuel and Petrochemical Manufacturers.

You are recognized for 5 minutes.

STATEMENT OF DERRICK MORGAN

Mr. MORGAN. Thank you, Mr. Chairman, Mr. Ranking Member, members of the committee. Thank you for inviting me to testify today on advanced biofuels under the renewable fuel standard. AFPM members account more than 95 percent of the refining capacity in the United States and are the obligated parties under the RFS. As a result, we are acutely aware of the costs and the challenges associated with advanced biofuel mandates.

The RFS was intended to grow a market for first-generation biofuel while spurring commercialization of advanced and cellulosic biofuels. Although reasons for these goals are understandable—energy security, rural development, environmental benefits—our experience with the RFS has made clear that the law is failing to deliver upon many of its goals.

The corn ethanol industry has been the prime beneficiary of the RFS. E–10 is a competitive fuel and does not require a mandate, as evidenced by more than a billion gallons of ethanol exports last year. The advanced biofuel and cellulosic mandates are a different story, though.

The vision of cellulosic biofuels capturing 16 billion gallons of market share by 2022 is illusory, has proven illusory. The U.S. will produce only about 10 million gallons of liquid cellulosic fuels in 2018, a mere fraction of the nearly 200 billion gallons of transportation fuel we will consume this year.

Despite this reality, EPA has routinely set mandates hiring than actual production, leaving refiners to buy phantom fuel credits for gallons of products that just don't exist. The lack of cellulosic production is not for a lack of trying, including by a number of our member companies. Someday, someone could make a breakthrough. And when they do, it very likely won't need a mandate.

Biodiesel is the primary advanced biofuel on the market today. Unfortunately, it is also tremendously expensive. Last year, biodiesel cost approximately $1.50 more per gallon than the petroleum diesel it was blended into, even before taking into account its lower energy density. For this reason and despite advanced biofuel mandates approaching 3 billion gallons, U.S. producers never made more than 2 billion gallons of biomass-based diesel in a given year.

As a result, imported biofuels are displacing U.S.-produced petroleum and diesel. This simply does not make sense for a law entitled the Energy Dependence and Security Act. AFPM strongly supports a transition to a more competitive fuels market and away from the RFS. We have gone from the world's largest importer of crude oil and refined products to the largest exporter of refined products in the world. Our net imports of petroleum are way down, the lowest percentage since 1967. Domestic production of crude oil and finished products continues to increase. Of what we do import, more

is coming from our immediate neighbors with 40 percent from Canada.

North American energy security has never been stronger. But as long as the RFS is the law of the land, we ask policymakers to place a stronger nexus between mandated volumes and demonstrated domestic production. This will ensure we can comply with the law and would be better for consumers who should not have to pay more for fuel to subsidize foreign biofuel manufacturers.

We also support rural communities and biofuel production. Many of our members, our large biofuel producers themselves, will have investments or joint ventures with biofuel producers. Many of our refineries are located in rural areas. And we produce the diesel that powers tractors and school buses. We simply believe there must be better ways to support rural America than by creating expensive and inefficient Federal mandates.

We remain open to good-faith discussions about the future of the RFS and ways to create better opportunities for all stakeholders, especially consumers. The committee's work on the issue is greatly appreciated by our members. We look forward to the dialogue in the coming weeks and months, and I look forward to answering your questions today.

Thank you very much.

[The prepared statement of Mr. Morgan follows:]



AFPM
American
Fuel & Petrochemical
Manufacturers

Summary Testimony of Derrick Morgan, Senior Vice President, AFPM

The Energy Independence and Security Act of 2007 ("EISA") established aggressive targets for cellulosic and advanced biofuel production, including a topline mandate of 21 billion gallons of advanced biofuels in 2022. For conventional biofuels such as corn ethanol, the RFS helped to grow investment in ethanol plants and distribution infrastructure, such as terminal tankage and at blending racks. E10 (10 percent ethanol) is now ubiquitous in the United States, and the U.S. corn ethanol industry is the largest in the world. The advanced biofuels mandates are a very different story, as these fuels have either not materialized in the volumes envisioned by Congress or are prohibitively expensive.

Liquid cellulosic biofuel production has been virtually non-existent—with only 10 million gallons produced in 2017. For perspective, that was enough fuel to satisfy approximately 40 minutes of U.S. fuel consumption last year. Biodiesel is the primary advanced biofuel used in the U.S. However, at $1.00 more per gallon than petroleum diesel, biodiesel mandates effectively act as a multi-billion dollar fuel tax on U.S. consumers. Domestic biodiesel production is expected to fall short of mandated advanced biofuel levels in 2018, leaving imported fuels to fill the balance.

AFPM supports the market-driven integration of renewable fuels into the U.S. fuel supply, and as a result supports transitioning from the RFS to a competitive fuels market at the earliest feasible date. A natural transition would come in 2022, providing the biofuels industry the full promised timeline for the statutory tables, but before the program reverts to EPA without appropriate Congressional input.

EPA should set annual cellulosic, biomass-based diesel, and advanced requirements that are based on a reasonable estimate of domestic production and on sustained actual production. This will help to ensure that targets are achievable and meet EISA's policy aim of reducing U.S. reliance on imported fuel. Anchoring the mandate to domestic production will also limit the financial burden it inflicts on consumers. Government should not mandate more than what's produced in the United States, and with biodiesel consistently more expensive than petroleum diesel, imports should continue to be permitted to compete and to ensure mandates are met as economically as possible. It is critical that the cellulosic waiver credits remain available as a consumer price protection mechanism.

Finally, although AFPM recognizes the need for an orderly transition out of the RFS program, it cautions policymakers against relying on overly-optimistic projections about the ability of advanced biofuel producers to meet growing mandates. Experience with implementation of the RFS has repeatedly shown that fuels will not be produced just because policymakers set aggressive targets. Although there are many exciting technologies, many of which are being developed by AFPM's membership, the fuels must also demonstrate economic value to work at the scale envisioned by the RFS.

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Testimony of Derrick Morgan, Senior Vice President, American Fuel & Petrochemical Manufacturers
U.S. House Energy and Commerce Subcommittee on the Environment
Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects
June 22, 2018

The American Fuel & Petrochemical Manufacturers ("AFPM") appreciates the opportunity to provide testimony on advanced biofuels under the Renewable Fuel Standard ("RFS"). AFPM's members operate approximately 120 refineries, representing more than 95 percent of U.S. refining capacity. AFPM's members produce the gasoline, diesel, jet fuel, and building blocks for the thousands of products that make innovation and progress possible. As refiners and importers of transportation fuels, AFPM's members are the obligated parties under the RFS and are acutely aware of the costs and challenges associated with the advanced biofuel mandates.

The Energy Independence and Security Act of 2007 ("EISA") established aggressive targets for cellulosic and advanced biofuel production, including a topline mandate of 21 billion gallons of advanced biofuels in 2022. At the time, policymakers concerned about U.S. reliance on foreign oil and high prices sought to diversify the U.S. fuel supply under the notion that if Congress simply mandates a product, it will materialize. In the time since, the U.S. energy landscape has undergone seismic shifts. The United States is producing more of its own crude oil and is now a net exporter of refined petroleum products. Meanwhile, the RFS has had mixed results. For conventional biofuels such as corn ethanol, the RFS helped to grow investment in ethanol plants and distribution infrastructure, such as terminal tankage and at blending racks. E10 (10 percent ethanol) is now ubiquitous in the United States, and the U.S. corn ethanol industry is the largest

in the world. In fact, ethanol producers exported more than a billion gallons of ethanol last year, demonstrating that ethanol is a competitive product without mandates like the RFS.

The advanced biofuels mandates are a very different story, as these fuels have either not materialized in the volumes envisioned by Congress or are prohibitively expensive. AFPM's written testimony will expand on the following points.

1. The mandates have largely failed to help commercialize cellulosic biofuels and advanced biofuels other than biodiesel.
2. The mandates have outpaced domestic production and incentivized imports to replace U.S.-produced diesel, undermining the energy security goals of the Energy Independence and Security Act.
3. Biodiesel mandates are expensive and disadvantage consumers.
4. Until the RFS sunsets, EPA should set reasonable advanced biofuels mandates tied to demonstrated domestic production.

I. The RFS has largely failed to commercialize cellulosic biofuels and advanced biofuels other than biodiesel.

Cellulosic biofuels are produced from biomass such as switchgrass and corn stover and, by law, are supposed to reduce carbon emissions by at least 60 percent. However, despite Congress' intent that a growing proportion of the mandates come from these cellulosic biofuels (intended to comprise nearly half of the total mandate by 2022), the most significant shortfalls in the RFS have come in the cellulosic category. In fact, EPA has waived virtually all of the cellulosic mandate due to lack of sustained commercial production. The majority of the cellulosic fuel that has been produced has been generated primarily from landfill biogas converted into liquified and compressed natural gases. Liquid cellulosic biofuel production has been virtually non-existent—with only 10 million gallons produced in 2017. For perspective, that was enough fuel to satisfy approximately 40 minutes of U.S. fuel consumption last year.

AFPM member companies have spent significant resources attempting to commercialize cellulosic technologies, whether directly or through off-take agreements with cellulosic biofuel producers. Despite significant investment by some of the most sophisticated, technically savvy, and innovative companies in the world, the cellulosic mandates have proven to be infeasible. According to a comprehensive 2011 report by the National Academy of Sciences, cellulosic biofuel facilities face significantly higher capital costs than corn ethanol plants, as well as higher operating costs, more complex processes, logistical challenges, and scale-up issues.

Congress had the foresight to build the only true consumer protection mechanism into the RFS when it included a waiver provision and cellulosic waiver credit as an alternative compliance path. Without these mechanisms in place, compliance would be impossible, as cellulosic fuels are simply not available in sufficient quantities. Even still, refiners face perennial issues with cellulosic mandates that exceed production, even after EPA exercises its waiver authority. In 2016, for instance, EPA set the cellulosic mandate at 230 million gallons, but only 191 million gallons were produced – a 39 million gallon shortfall. Despite the 2016 shortfall,

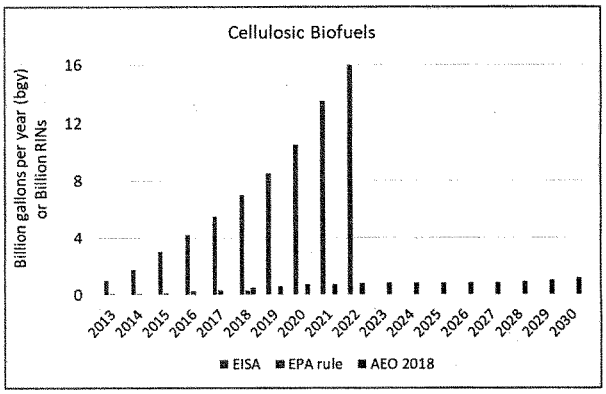


Figure 1 (Source: derived from EISA 2007 statute, various EPA final RFS rules, EIA annual energy outlook)

EPA raised the 2017 mandate to 311 million gallons, and again production fell short, this time by more than 60 million gallons. And for every cellulosic gallon that doesn't exist, refiners still have to purchase waiver credits according to a formula in the statute.

Cellulosic fuels are a subcategory of "advanced biofuels," which includes all cellulosic fuels, as well as other products—notably sugarcane ethanol (primarily Brazilian), renewable diesel, and biodiesel, which combined to meet approximately 99 percent of the advanced biofuel mandate. The remaining fuels include small volume fuels like renewable heating oil, naphtha, and jet fuel.

II. Existing biomass-based diesel and "other advanced" mandates are too aggressive, disadvantage consumers, and have promoted imports over domestic fuels.

For 2018, EPA finalized a total renewable fuel requirement of 19.29 billion ethanol-equivalent gallons, including an advanced biofuel mandate of 4.29 billion RINs (approximately 2.86 billion physical gallons), and an implied conventional mandate of 15 billion gallons. As part of the advanced biofuel mandate, biomass-based diesel must account for at least 3.15 billion RINs (2.1 billion gallons).[1]

According to the EPA Moderated Transaction System (EMTS), U.S. biomass-based diesel production is currently on pace to generate only 2.74 billion RINs, 0.2 billon cellulosic RINs, and only an additional 0.09 billion advanced biofuel RINs, for a total of 3.03 billion domestic RINs to meet an advanced biofuel mandate of 4.29 billion. Even assuming EIA's more generous

[1] For clarity, AFPM's testimony will convert volume standards to RIN obligations. Biodiesel generates 1.5 RINs per gallon. Other advanced biofuels generate as many as 1.7 RINs per gallon, depending on energy content.

projection of 3.15 billion biodiesel RINs is correct, the U.S. will still be more than 800 million RINs short.

Gasoline consumption in the United States is projected to be approximately 143 billion gallons in 2018. Due to a lack of E15 and E85 sales, ethanol will comprise approximately 10 percent of the gasoline pool (14.3 billion gallons), leaving a 700 million RIN deficit in the general renewable category. In the past, this conventional ethanol shortfall, stemming from a lack of consumer demand for midlevel ethanol blends, has been met through the use of imported biomass-based diesel. As a result, the inherent advanced biofuel mandate for 2018 is more than 3.3 billion gallons (or five billion RINs), which acts as a mandate to import (and subsidize) over one billion gallons of foreign biodiesel. This is not what Congress envisioned when it enacted the RFS.

To put this challenge in perspective, in 2017, there were only four billion advanced biofuel RINs generated, meaning advanced biofuels will need a year-over-year increase of 25 percent in order to meet the 2018 mandates without using banked credits from previous years. Importantly, the United States has limited capacity to meet these aggressive mandates. For instance, although the United States is home to 95 biodiesel plants with approximately 3.6 billion RINS of capacity, the biodiesel industry produced only 2.4 billion RINs in 2017, a record high. Domestic renewable diesel production added an additional 0.3 billion RINs, for a total of 2.7 billion—slightly below 2016's record production of 2.85 billion RINs. As a result of production and economic realities, nearly a third of the RFS advanced biofuel mandates have been met with imported fuels the last two years.

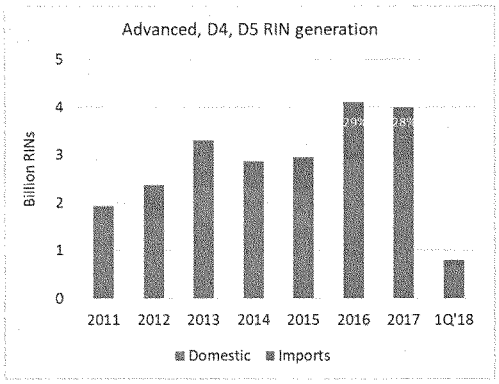


Figure 2 D4 and D5 RIN generation (Source: EPA EMTS)

Previously, the majority of biomass-based diesel imports came from Argentina and Indonesia, which combined to provide nearly 700 million gallons of fuel each of the past two years. Last fall, however, the United States determined that Argentina and Indonesia were illegally subsidizing their biodiesel production and imposed countervailing duties. Imports from Argentina and Indonesia have all but ceased, and domestic production has increased, although not in sufficient volume to meet growing RFS mandates or to make up the import losses from Argentina and Indonesia. Rather, imports have increased from other producers, particularly Canada and France.

The major challenge with biodiesel is that, unlike ethanol, the fuel is simply not economical without substantial subsidies. Without accounting for biodiesel's lower energy content, which is seven percent below the energy content of petroleum diesel, the price of biodiesel averaged $1.50 more per gallon than the petroleum diesel it replaced in 2017. Despite a recent narrowing of that gap, a gallon of biodiesel remains nearly $1.00 more expensive per gallon—and

consumers are shouldering those costs. For every gallon of renewable fuel mandated beyond the E10 blend wall, the RFS pushes obligated parties toward biodiesel as the marginal compliance mechanism. And since biodiesel is both more expensive and less-energy dense, the RFS is effectively serving as a multi-billion fuel tax on consumers.

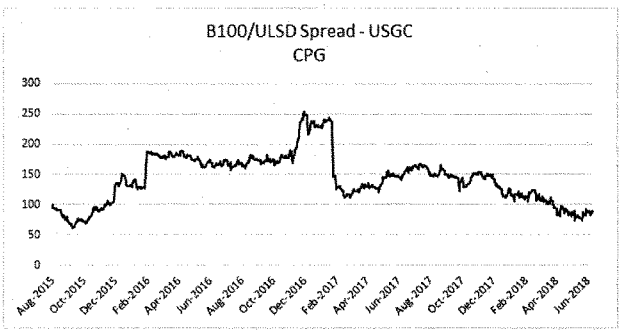


Figure 3 Spread between biodiesel and petroleum diesel prices (source: Argus)

III. AFPM Recommendations

AFPM supports the market-driven integration of renewable fuels into the U.S. fuel supply, and as a result supports transitioning from the RFS to a competitive fuels market at the earliest feasible date. A natural transition would come in 2022, providing the biofuels industry the full promised timeline for the statutory tables, but before the program reverts to EPA without appropriate Congressional input.

As a policy matter, the RFS was designed during a different time and policymakers now have the benefit of nearly a decade of experience to determine what has worked and what has not. In the case of conventional biofuels, notably corn ethanol, E10 blends are economic and do not require

a mandate. Conversely, cellulosic biofuel mandates are unachievable, due to an array of market, technology, cost, and logistics challenges. Advanced biofuels, other than biodiesel, have been similarly limited. Biodiesel, although commercially available, is expensive and domestic production has not kept pace with RFS mandates. For these reasons AFPM recommends the following course of action as a bridge until the RFS sunsets.

EPA should set annual cellulosic, biomass-based diesel, and advanced requirements that are based on a reasonable estimate of domestic production and on sustained actual production. This will help to ensure that targets are achievable and meet EISA's policy aim of reducing U.S. reliance on imported fuel. Anchoring the mandate to domestic production will also limit the financial burden it inflicts on consumers. Government should not mandate more than what's produced in the United States, and with biodiesel consistently more expensive than petroleum diesel, imports should continue to be permitted to compete and to ensure mandates are met as economically as possible. It is critical that the cellulosic waiver credits remain available as a consumer price protection mechanism.

Finally, although AFPM recognizes the need for an orderly transition out of the RFS program, it cautions policymakers against relying on overly-optimistic projections about the ability of advanced biofuel producers to meet growing mandates. Experience with implementation of the RFS has repeatedly shown that fuels will not be produced just because policymakers set aggressive targets. Although there are many exciting technologies, many of which are being developed by AFPM's membership, the fuels must also demonstrate economic value to work at the scale envisioned by the RFS.

* * *

AFPM appreciates the opportunity to share its views as the Committee continues to find an appropriate balance to U.S. fuels policy. AFPM supports the market-driven adoption of biofuels into the U.S. transportation fuel market, and indeed are among the largest producers and investors in biofuel technologies. However, the RFS has failed to deliver affordable, commercial-scale advanced biofuels, leaving refiners to displace U.S.-produced fuels with expensive imported substitutes. These challenges with commercializing a new biofuels industry are unlikely to be overcome in the near term. For these reasons, AFPM recommends transitioning from the RFS toward policies that better recognize market realities and promote competition to protect consumers.

Mr. SHIMKUS. Thank you.

Now, next for my colleagues, we are going to recognize Robin Puthusseril. So that is probably the most difficult name to pronounce and read here. So we are glad she is here. Vice President of Greater Chicago Truck Plaza. Now, I am a down-stater. So we will claim her today. Greater Chicago Truck Plaza, on behalf of the National Association of Truck Stop Operators.

And you are recognized for 5 minutes.

STATEMENT OF ROBIN PUTHUSSERIL

Ms. PUTHUSSERIL. Chairman Shimkus, Ranking Member, and members of the subcommittee, thank you for the opportunity to testify this morning. My name is Robin Puthusseril, and I am the Vice President and part owner of the Greater Chicago I–55 Truck Stop in Bolingbrook, Illinois. Along with my father, John Puthusseril, and my brother.

I am testifying today on behalf of NATSO, the national association representing travel centers and truck stops. NATSO represents not only small, single-store operators, such as myself, but also large, nationwide travel center and convenience store chains. My testimony today will focus on my company's experience with biodiesel and provide my perspective as to how Congress can continue to incentivize fuel retailers like myself to incorporate biodiesel into our diesel fuel supply.

First and foremost, it is important to understand that, as a diesel retailer, I operate in the most transparent, competitive commodities market in the United States. Truck drivers are, by and large, more savvy and price-conscious than typical American motorists. Truck drivers are often aware of retail diesel prices when they are hundreds of miles away from potential refueling sites. Fleet managers use this information to direct drivers to specific retail locations in order to purchase the lowest priced fuel available.

I say this to illustrate the competitive nature of my market, which compels me to pass through cost savings on to my customers.

The RFS is sound Federal policy because it recognizes this reality. Specifically, it creates a structure where, when it is implemented properly, I am able to offer lower fuel prices the more biodiesel I sell. This is generally good for retailers because, as buyers, we like long markets with a diverse array of supply options at our disposal.

Absent government incentives, biodiesel costs more money to sell than diesel fuel. So, absent government incentives, I would have absolutely no reason to blend biodiesel into my diesel fuel because it would make the end product more expensive rather than less expensive.

The RFS makes the end product less expensive. Under the RFS, when I blend biodiesel into diesel fuel, I am able to separate and sell compliance credits, known as RINs. When I sell RINs, I can lower the cost of my diesel fuel. This allows me to better compete for market share.

My travel center has been selling biodiesel blends for 12 years. After the RFS and similar State incentives were enacted, it was clear to me that I had to invest in biodiesel in order to remain competitive. In addition to spending more than $500,000 to update my

fuel infrastructure, I spend approximately 70 percent of my time today managing this line of supply. This includes analyzing pricing proposals, testing our fuel supply, coordinating deliveries, managing inventory, and ongoing administrative and regulatory compliance work, which is significant. This is all on top of managing our staff of more than 50 employees and overseeing all aspects of our truck stop, from fuel sales and truck parking lot maintenance to our sit-down restaurant and convenience store.

I didn't ask for the RFS. But now that it is the law of the land, I view it as my responsibility to my family's business and our employees to adjust our practices accordingly. The growth prospects for advanced biofuels are in Congress' hands. Because biodiesel is more expensive than diesel fuel, it must continue to be subject to robust Federal incentives if it is to continue to gain market share. I firmly believe that the advanced biofuels market has a potential to be a part of American's long-term all-of-the-above energy future.

I am concerned, however, that the EPA in recent months has granted small refinery hardship waivers to an unprecedented number of refineries. These waivers have lowered demand for advanced biofuels. They have substantially diminished the value of the biodiesel investments that Congress encouraged me to make when it established the RFS.

Going forward, I would hope that EPA act in a manner that is more consistent with the RFS by requiring all waiver requests be received and assessed prior to finalizing biofuel mandates for a given compliance year. That way, when RVOs are finalized, the market can be confident that those numbers will not be adjusted downward after the fact.

When the RFS was enacted, if I didn't invest in biofuel infrastructure and adjust my business practices, I would be at a serious disadvantage today. That is why I made the investments. If Congress can continue to provide a roadmap that leads to robust advanced biofuels markets, the travel center industry will be better able to offer affordable fuel for motorist as we serve as the home away from home for America's truck drivers.

Thank you for the opportunity to testify today. I am happy to answer any questions that you may have.

[The prepared statement of Ms. Puthusseril follows:]



Testimony of

Robin Puthusseril

Vice President/Owner

The Greater Chicago I-55 Truck Plaza

On behalf of the

National Association of Truckstop Operators (NATSO)

Before the

U.S. House Committee on Energy and Commerce

Subcommittee on Environment

June 22, 2018

Hearing on

"Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects"

SUMMARY OF TESTIMONY

- As the vice president and part owner of The Greater Chicago I-55 Truck Plaza in Bolingbrook, Illinois, I have been incorporating advanced biofuels into my diesel fuel supply for more than ten years. My testimony today is on behalf of the National Association of Truckstop Operators ("NATSO" or the "Association"). As the premier national trade association representing the truckstop and travel center industry, NATSO represents a substantial majority of retail sales of diesel fuel in the United States. Many of the Association's most successful members incorporate biodiesel into their fuel supply as a means of lowering prices for consumers.

- The retail fuels market is the most transparent, competitive commodities market in the United States. This compels retailers to pass through cost savings to consumers in order to maintain and increase their market share.

- Under the Renewable Fuel Standard ("RFS"), when a retailer blends biodiesel into diesel fuel, the retailer is able to separate and sell compliance credits known as Renewable Identification Numbers or "RINs." The RIN value is then passed along to consumers in the form of less expensive retail diesel fuel. Travel center operators have an incentive to blend biodiesel into our diesel fuel supply under the RFS because blending enables us to separate and sell RINs, which lowers the cost of the goods we sell every day and allows us to better compete for market share.

- My travel center has been incorporating biodiesel into our fuel supply for more than ten years. Once the RFS and similar state incentives became law, it was clear to me that I had to invest in biodiesel in order to remain competitive. In addition to spending more than $500,000 to update my infrastructure, I spend approximately 70 percent of my time today managing this line of supply.

- As my experience demonstrates, the RFS is well-designed to achieve its objectives. Congress recognized in designing the RFS that the only way to get truck drivers to buy more advanced biofuels is to make those fuels *less expensive* than straight diesel fuel. When EPA mandates growth-oriented, yet achievable volumes of biomass-based diesel that must be incorporated into the fuel supply, it rewards companies that blend biodiesel into diesel fuel because the companies can use the value of the RINs associated with biodiesel blends to lower their costs of goods sold.

- Unlike corn-based ethanol, biodiesel and other advanced biofuels cost more than the fuels they are trying to displace. Such biofuels must continue to be subject to robust federal incentives for a period of years if there is any hope for them to be remain competitive. Absent such incentives, advanced biofuels will not displace petroleum-based fuels.

- There are two primary factors affecting the price of and demand for biodiesel in the United States: EPA's Renewable Volume Obligations ("RVOs") and fuel marketers' access to biodiesel that can be incorporated into their diesel fuel supply in a manner that allows them to earn a profit. These two factors have a symbiotic relationship with one another: If EPA implements the RFS obligations in a stable, ambitious, and growth-oriented manner, it will encourage expansion of efficient sources of supply.

- The EPA's policy of liberally granting small refinery hardship exemptions is undercutting demand for advanced biofuels. When these waivers are issued retroactively, as they have been in recent months, they function as *de facto* mandate cuts in the RVOs, dramatically lowering RIN prices and in turn, demand for advanced biofuels. Unless Congress wants the market for advanced biofuels to decline precipitously, it is imperative that the EPA immediately reevaluates its criteria for issuing small refinery waivers.

- When the RFS was enacted, if I didn't invest in biofuel infrastructure and adjust my business practices to accommodate biodiesel, my business would be at a serious disadvantage today relative to my competitors that did adjust. That's why I made the adjustments. It seems unjust that companies that didn't plan ahead like this are being rewarded at my expense.

- If EPA is genuinely looking for a way to act consistent with the spirit of the RFS, the Agency could require that all waiver requests be received a minimum period of days *prior* to finalizing the volumetric obligations for a given compliance year. That way, once the Agency issues waivers, it can upwardly adjust the RVOs applicable to refiners that have not received waivers. This would allow the market to satisfy the entire RVO consistent with Congressional intent, while at the same time alleviating any purported hardship on small refiners.

INTRODUCTION

Chairman Shimkus, Ranking Member Tonko, and members of the Subcommittee, thank you for the opportunity to testify on the current status and future prospects of Advanced Biofuels under the Renewable Fuel Standard ("RFS").

My name is Robin Puthusseril. I am the Vice President and part owner of The Greater Chicago I-55 Truck Plaza in Bolingbrook, Illinois.[1] I am testifying today on behalf of the National Association of Truckstop Operators ("NATSO" or the "Association").[2] NATSO represents both large, multi-billion dollar travel center and convenience store chains, as well as small, single-store operators such as myself. Given the breadth of its membership, NATSO represents a substantial majority of retail sales of diesel fuel in the United States.

Due to the market conditions created by the RFS, many of the Association's most successful members have incorporated biodiesel into their diesel fuel supply as a means of lowering prices for consumers and competing for market share. I myself have been incorporating advanced biofuels into my diesel fuel supply for more than ten years.

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[1] My father John Puthusseril immigrated to the United States in 1968 on a student visa to study engineering. After more than twenty years working as an engineer and entrepreneur in Chicago, he bought the truckstop in 1995. Today our truckstop caters to interstate trucking companies and owner-operators, as well as passenger travelers and local citizens. We are a family-owned and operated independent truckstop employing more than 50 people, with a turnover rate that is more than 5 times lower than industry average.

[2] NATSO is the premier national trade association representing travel plazas, truckstops, and off-highway fuel retailers. It was through my work with NATSO that I first became aware of the financial benefits associated with advanced biofuels. NATSO recently launched a business venture called the "Alternative Fuels Council" that is designed to assist its members and the entire retail fuels industry in understanding alternative fuels markets and incentives, and work with its retailers to profitably incorporate alternative fuels into their supply offerings. Additional information *available at* http://www.natsoaltfuels.com.

My testimony today will focus on how Congress and the Executive Branch can continue to foster a policy environment that benefits the American consumer by incentivizing the displacement of petroleum-based fuels with renewable substitutes. Such policy, when done right, can lower fuel prices for over-the-road truck drivers, which in turns lowers the prices for all goods that are moved via truck.

BACKGROUND ON THE TRAVEL CENTER INDUSTRY

The travel center and truckstop business is a diverse and evolving industry. Every travel center location includes multiple profit centers, from motor fuel sales and auto-repair and supply shops, to hotels, sit-down restaurants, quick-service restaurants, food courts, and convenience stores. Although the industry once was tailored solely to truck drivers, it now caters to the entire traveling public, as well as the local population that lives in close proximity to a travel center location.

NATSO members' sole objective is to sell legal products, in a lawful way, to customers who want to buy them. As new fuels enter the market, retailers want to be able to sell those fuels lawfully and with minimal volatility and risk. We are agnostic as to which liquid fuel we sell to satisfy consumer demand, but we do have a strong bias in that we believe it is best for the American consumer—and America's industrial position in the world marketplace—to have reasonably low- and stable-priced energy.

PRICE FLOW AT RETAIL

The retail fuels market is the most transparent, competitive commodities

market in the United States. As every American knows, customers can see gasoline retailers' price signs from blocks away, or compare prices on apps on their cell phones. These signs represent more than just pricing information; they are value propositions to potential customers, not only with respect to fuel but also food and other convenience items that we sell in our stores.

While the gasoline market is extraordinarily competitive—consumers will often change where they buy gas to save just a few cents per gallon[3]—the retail diesel market is even more competitive and transparent as many travel centers' customers—truck drivers and trucking fleets—are more savvy and price-conscious than typical American motorists. (Fuel generally amounts to 30-40% of a motor carrier's overall costs.) Truck drivers are often aware of retail fuel prices when they are 100 miles away from potential refueling sites, and fleet managers use this information to direct drivers to specific retail locations in order to purchase the lowest-priced fuel available. This imposes strong downward pressure on retail diesel prices.

The competitive nature of the retail diesel market compels retailers to pass through cost savings to consumers in order to maintain and increase their market share. It is in retailers' interests to increase the amount of fuel that we sell to consumers. This is not only because those sales directly drive profit opportunity,

[3] According to a 2017 survey from the National Association of Convenience Stores, 67 percent of consumers say they would drive five minutes out of their way to save 5 cents per gallon and 61percent say that price is the most important factor in determining where they buy gas. See *How Consumers Behave at the Pump,* NACS, http://www.convenience.org/YourBusiness/FuelsCenter/Pages/How-Consumers-Behave-at-the-Pump.aspx#.Ws4QQS7wbb0.

but also because such sales drive in-store traffic, which is a source of profit for the retailer.

Given the structure of the retail fuels market, therefore, all of NATSO's members are "price takers" at retail. This means we must take the price of fuel that the market sets and compete to gain market share as the transparency of the market exerts a constant downward pressure on retail fuel prices. It is important to remember, however, that there is a long chain of supply before fuel is sold to consumers at retail—and any costs that are incurred along the fuel production and supply chain will be passed down to retailers and ultimately absorbed by consumers.[4]

To illustrate, under the RFS, when a retailer blends biodiesel into diesel fuel, the retailer is able to separate and sell compliance credits known as Renewable Identification Numbers or "RINs"; the RIN value is then passed along to consumers in the form of more competitively priced (less expensive) retail fuel to entice the customer to stop for fuel and come into our stores.

In short, travel center operators have an incentive to blend biodiesel into their diesel fuel supply under the RFS because blending enables retailers to separate and sell RINs, which lowers the cost of the goods we sell every day.

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[4] Nowhere is this price pass-through phenomenon more visible than in the retail fuel industry. *See* U.S. Energy Information Administration, Michael Burdette and John Zyren, *Gasoline Price Pass-Through* (2003), *available at* http://www.eia.gov/pub/oil_gas/petroleum/feature_articles/2003/gasolinepass/gasolinepass.htm (noting that "any change in price at the refinery, or any intermediate point of sale downstream, should be expected to affect prices at each successive sale").

RETAILERS DO NOT *CREATE* DEMAND, WE *RESPOND TO* DEMAND

Offering a product for sale does not guarantee that consumers will purchase it, as retailers cannot force consumers to buy a particular product. Rather, retailers sell what consumers demand. In fact, the number one trait of any successful retailer is an ability to identify what his or her customers want to buy, and then sell that product at a cost that enables the retailer to earn a profit.

If Congress wants to incentivize increased penetration of advanced biofuels, it must keep in mind this fundamental market reality: motorists and truck drivers do not purchase products because NATSO's members sell them; NATSO's members sell products because our customers purchase them. When they're buying motor fuel, our customers tend to purchase the least expensive product.

MY TRAVEL CENTER'S EXPERIENCE WITH BIODIESEL

My travel center has been incorporating biodiesel into our fuel supply for more than ten years. Prior to that point, there was very little demand for biodiesel because government incentives had not been implemented to make the product price-competitive with diesel. Once the RFS and similar state incentives were enacted into law, it became clear to me that I had to invest in biodiesel in order to remain competitive.

It was not something our industry *asked for*—we had a very successful business long before the RFS was enacted—but once it became law we adjusted our business accordingly.

The tangible investments we have made include new tanks, dispensers, lines, and other infrastructure that would allow us to store, blend, and dispense biodiesel. These investments cost upwards of $500,000. On top of this, the administrative and accounting costs associated with ensuring we comply with the various rules and regulations associated with blending biodiesel are extraordinary. We spend at least $100,000 annually on these types of expenses.

Furthermore, in order to remain competitive with larger truckstop chains that have entire teams of compliance and trading personnel, I spend approximately 70 percent of my time today managing our biodiesel line of supply. This includes identifying reasonable pricing proposals from producers and suppliers (many of whom try to take advantage of my company's small size and lack of buying power by charging me exorbitant prices for product), testing our fuel supply, coordinating deliveries, managing inventory, educating our staff and accountants on biodiesel requirements, recordkeeping, and ongoing administrative and regulatory compliance.

These investments are necessary in order for me to create a margin advantage that largely goes to our customers in the form of a more competitive price landscape.

For these reasons, I am very grateful that NATSO, our industry's national trade association, recently established the Alternative Fuels Council to help small-to-mid-size operators such as myself navigate these various complexities and minimize the costs associated with them. This should ultimately make it easier for more fuel retailers to begin incorporating advanced biofuels into their fuel supply.

THE RFS IS WELL-DESIGNED TO ACHIEVE ITS OBJECTIVES

In my experience, over the past decade, the RFS has successfully incentivized travel center operators to displace petroleum-based fuel with renewable substitutes such as biodiesel. It has succeeded because Congress, in designing the RFS, recognized that the only way to get truck drivers to buy more advanced biofuels was to make biofuel blends *less expensive* than straight diesel fuel. However, while the RFS creates for fuel retailers an *incentive* to blend as much renewable fuel as we can, this incentive only exists as long as our customers view the end product as an attractive value proposition. Of the various mandates contained in the RFS, Congress did **not** include a mandate for consumers to purchase anything.

Fuel retailers blend biofuels into their fuel supply to lower the price of the fuels that we sell. The incentive to blend is especially strong with respect to biodiesel. When the RFS is implemented properly (which it generally has been until recently), EPA mandates growth-oriented, yet achievable volumes of biomass-based diesel that must be incorporated into the fuel supply. These volumetric mandates reward companies that blend biodiesel into diesel fuel because the companies can use the value of the RINs associated with biodiesel blends (which are more valuable than most other RINs because they satisfy more categories of renewable fuel obligations) to lower their costs of goods sold. These incentives apply to both refiners that do their own blending, as well as wholesalers and retailers.

In the past decade, the United States has increased its consumption of biodiesel more than five-fold. This surge in biodiesel consumption, stimulated

largely by the RFS, has not only enabled retailers like me to lower fuel prices, but has also helped domestic biodiesel producers grow and create jobs.

UNLIKE CORN-BASED ETHANOL, BIODIESEL AND OTHER ADVANCED BIOFUELS COST MORE THAN THE FUELS THEY ARE TRYING TO DISPLACE

The only reason any fuel marketer blends biodiesel into their diesel fuel supply is to make the finished product less expensive. Absent government incentives, biodiesel as a commodity is substantially more expensive than diesel fuel. Thus, advanced biofuels such as biodiesel would not be blended into diesel fuel in the absence of the RFS and other government incentives. (Ethanol, by contrast, is an economical source of octane and therefore would be blended with gasoline even if the RFS were repealed.)

The "nesting" feature of the RFS's renewable fuel categories is such that "D4" biodiesel RINs satisfy obligated parties' requirements for not only the biomass-based diesel category, but also the advanced biofuel ("D5" RINs) and total renewable fuel ("D6" RINs) categories. The potential for growth in biodiesel consumption, therefore, amounts to potential for higher Renewable Volume Obligations ("RVOs") in the *other* renewable fuel categories under the RFS. EPA can raise obligations in other renewable fuel categories knowing that biodiesel can be used to satisfy those obligations, if necessary. These higher obligations, however, can provide the requisite certainty necessary to bring other advanced biofuels to market.

Because advanced biofuels cost more money than the fuels they are trying to displace, such biofuels must continue to be subject to robust federal incentives for a

period of years if there is any hope for them to be competitive. Absent such incentives, advanced biofuels will not displace petroleum-based fuels.

THERE IS NO BIODIESEL "BLEND WALL"

If the RFS's volume obligations exceed the volume of renewable fuel that the market can absorb, the market will have hit the so-called "blend wall"—the point at which there is an insufficient supply of RINs to allow obligated parties to satisfy their RVOs under the RFS. This would result in significantly elevated prices for the RINs that are available. For those obligated parties unable to acquire sufficient RINs, they could face fines from the EPA or might make other decisions to lower their obligations under the RFS by reducing or exporting production. Any or all of these situations would add costs to fuel production and, as happens in every industry, these costs would be passed down to retailers and, ultimately, the costs would be absorbed by consumers.

There is no "blendwall" for biodiesel. All diesel fuel infrastructure is certified to store up to 20 percent biodiesel, while EPA's biomass-based diesel RVOs amount to less than five percent of the volume of diesel fuel sold in the United States. What's more, virtually all over-the-road trucks are warrantied to run on biodiesel blends up to 20 percent. Simply put, there is more than sufficient diesel demand to eliminate any concerns about the market's ability to satisfy a very robust advanced biofuels mandate under the RFS.

THERE ARE TWO PRIMARY FACTORS AFFECTING THE PRICE OF—AND DEMAND FOR—BIODIESEL IN THE UNITED STATES

The two primary factors affecting the price of (and thus demand for) biodiesel in the United States are:

(1) The EPA's RVOs in conjunction with the RIN value that participants in the fuel supply chain can realize by incorporating biodiesel into their fuel supply; and

(2) Fuel marketers' access to biodiesel that can be incorporated into their diesel fuel supply in a manner that allows them to profitably sell the final blended product to their customers at a lower price relative to unblended diesel fuel.

These two factors have a symbiotic relationship with one another: If EPA implements the RFS obligations in a stable, ambitious, and growth-oriented manner, it will encourage expansion of efficient sources of supply. If the market is confident that biomass-based diesel and total advanced biofuel obligations will be responsibly implemented over a multi-year time horizon, it will incentivize efficient, vertically integrated producers to further enhance their production capacity.

Today, the global market is "long" on bean oil (from which most biodiesel is derived). Bean oil is in essence a secondary product that is generated when soybeans are crushed in order to generate meal for animals around the world. The global demand for meal is growing, particularly in Chinese markets. As soybeans are crushed, only 80 percent of the resulting product is meal; the other 20 percent is

bean oil. There is a sufficient quantity of bean oil to satisfy global demand for vegetable oil *and* ambitious growth in U.S. biodiesel production and consumption.[5]

Nonetheless, as long as the price of bean oil exceeds the price of diesel fuel, the RIN plays a necessary role in "bridging the gap" to sufficiently incentivize fuel marketers to buy, blend, and sell biodiesel and still earn a profit. The higher RIN prices are (*i.e.*, the more ambitious that EPA is in establishing annual volumetric obligations), the greater the incentive will be for diesel retailers to incorporate biodiesel into their fuel supply.

In addition to "bridging the gap" between bean oil and heating oil prices, the RIN must also compensate for other costs, namely biodiesel production and transporting the finished product from the place of production to the retail outlet. These costs vary by region; as a practical matter, biodiesel blends greater than 5 percent cannot be shipped through a pipeline; they can only move via truck, rail, or barge. There are a number of areas in the U.S. where it is exceedingly expensive to ship product from biodiesel plants (which are predominantly in the Midwest) to retail outlets.[6]

When RIN prices are sufficiently high, it incentivizes marketers in these regions to undertake the expense associated with purchasing, transporting,

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[5] *See generally* https://www.ers.usda.gov/webdocs/DataFiles/52218/AllYearbook%20tables.pdf?v=43189 (indicating that in 2017 the U.S. exported enough bean oil to run eight biodiesel plants at a standard size of 30 million gallons per year, much of these exports going to China).

[6] Successful efforts by domestic biodiesel producers to halt biodiesel and renewable diesel imports from Argentina and Indonesia have exacerbated this problem: Before, product from those countries could be imported to U.S. ports and then efficiently distributed to retail markets where blending economics were favorable; today, the costs of transporting product to these regions from Midwestern plants are so high that most retailers in these regions have chosen to simply sell diesel fuel rather than blend biodiesel.

blending, and selling biodiesel. When RIN prices not sufficiently high, the incentives are not there and marketers will sell traditional diesel fuel rather than biodiesel blends. This result appears to be inconsistent with Congress's objectives in establishing the RFS to, among other things, improve the emissions characteristics of the motor fuels consumed in the United States by encouraging growth in production and consumption of renewable fuels such as biodiesel. It also falls short of the "all-of-the-above" energy policy that is in our national interest.

THE BIODIESEL TAX CREDIT IS AN IMPORTANT FACTOR IN BIODIESEL DEMAND BUT IS SECONDARY TO THE RFS's RENEWABLE VOLUME OBLIGATIONS

The biodiesel blenders' tax credit is an additional value component that serves to lower RIN prices (because RINs need to "do less work" to incentivize blending when there is a $1.00/gallon blenders' credit available), while encouraging additional blending and consumption. In essence, the tax credit functions to shift RFS compliance costs from obligated parties (such as fuel refiners) to the taxpayer.

The biodiesel tax credit was enacted in 2004 and originally scheduled to expire on December 31, 2006. Congress, however, has extended the provision seven times. In some cases, the extensions were enacted just before the scheduled expiration, but the last few extensions were enacted after the provisions have expired. The latest extension, in February, was enacted retroactively more than 13 months after the provision had expired.

During times when the credit is not in place (such as the present time), biodiesel and RIN markets are distorted. This results in a net negative for biodiesel

demand. In essence, the market places a probability on the credit's retroactive reinstatement (based on Congress's past behavior). In these circumstances, RIN prices do not solely reflect market fundamentals (*i.e.*, the relationship between bean oil and diesel prices, transportation and logistical costs, and the EPA's RVOs for the year), but rather they also reflect the market's assessment of Washington, D.C. political dynamics and the prospects for the credit's retroactive reinstatement.

Thus the tax credit's relevance to biodiesel prices (and thus demand) is not simply whether it is currently in place, but rather the level of certainty in the market as to whether the credit will be extended (greater certainty leads to RIN prices that more accurately reflect blending economics and thus enhances the value that can be realized by incorporating biodiesel into one's fuel supply).

At the end of the day, however, it remains the EPA's RVOs and the associated RIN value that drives biodiesel supply and demand.

EPA'S POLICY OF LIBERALLY GRANTING SMALL REFINERY HARDSHIP EXEMPTIONS IS SERIOUSLY UNDERCUTTING DEMAND FOR ADVANCED BIOFUELS

In recent months, EPA has granted small refinery "hardship" exemptions to an unprecedentedly large number of refineries. This has dramatically lowered RIN prices and in turn demand for advanced biofuels. It has also diminished the value of investments that I have made, in response to government incentives, to bring such fuels to market.

EPA has granted these waivers without providing <u>any</u> basic information to market stakeholders. Market participants are not told when waivers are given, the

volume quantity that is waived, or the refineries that receive the waivers. The waivers have undercut Congress's intent when it enacted the RFS. Unless Congress wants the market for advanced biofuels to precipitously decline, it is imperative that EPA immediately reevaluate its criteria for issuing small refinery waivers.

When these waivers are issued retroactively (*i.e.*, for compliance years for which RVOs have already been finalized), as they have been in recent months, they function as *de facto* cuts in the RVO. Refineries that have *not* received waivers continue to have their static obligation, while refineries that *do* receive waivers have their obligations cut by an amount commensurate with the waiver they have received.

This depresses the price of RINs—refineries that have their obligations waived can sell all of their RINs in an open market, and the increased supply of credits diminishes the credits' value.[7] This in turn inhibits marketers' ability to lower their costs of goods sold by blending biodiesel and separating RINs, thereby diminishing overall demand for biodiesel and other advanced biofuels.

EPA officials frequently cite a court case from late 2017[8] as "tying their hands" and requiring them to issue the waivers. This is not true. That case simply stood for the proposition that waivers cannot be withheld in the absence of a demonstration that a refinery would go bankrupt but-for receiving a waiver. It did not stand for the proposition that EPA must hand out waivers to any refinery that

[7] On multiple occasions, EPA has reportedly gone so far as to artificially generate and distribute current year RINs as restitution to refiners that have previously had waiver requests denied under a standard stricter than the one it currently has in place. This exacerbates the price-reducing effect the waivers have had on RINs.

[8] *Sinclair Wyoming Refining Co. v. EPA*, No. 16-9532 (10th Cir. Aug. 15, 2017)

produces less than 75,000 barrels of fuel per day—which is how EPA has apparently chosen to interpret it.[9]

Moreover, EPA's distribution of "hardship" waivers is incoherent because the price of RINs are baked into refiners' so-called "crack spreads."[10] All refiners (large and small) are able to pay for the costs associated with buying RINs by simply charging more money for the fuel that they sell commensurate with RIN costs. Indeed, EPA itself has acknowledged this market fact: "[R]efiners can indeed expend significant funds to purchase RINs needed to demonstrate compliance with the RFS program, but the cost is offset by a corresponding increase in the market price of the fuel they sell that is attributable to the RFS obligations. The market price they receive for the gasoline and diesel fuel they sell reflects the cost of RINs." EPA further added that: "Obligated parties [are] charging more for domestic gasoline and diesel to ensure they recoup the costs associated with RIN prices. So while [an obligated party] is directly paying for RINs they buy on the market, they are passing that cost along in the form of higher wholesale gasoline and diesel prices."[11]

Perhaps most troubling, these waivers are being issued in secret. EPA has not solicited any public comment as to whether its reformulation of the waiver criteria is appropriate, nor does it inform stakeholders when waivers are given. As a

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[9] EPA has reportedly even granted "small refinery waivers" to refineries that have the capacity to produce *greater than* the statutory eligibility maximum of 75,000 barrels per day but have intentionally cut back on production in order to fall below the waiver threshold.

[10] Crack spreads are the difference between refiners' cost of *raw* products and the price at which they sell *refined* products.

[11] EPA (November 2017). *Denial of Petitions for Rulemaking to Change the RFS Point of Obligation*. (EPA Report No. EPA-420-R-17-008), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TBGV.pdf. (*See* page 23.)

practical matter, waiver recipients receive an inequitable advantage over other market participants by being permitted to sell RINs based on asymmetrical information with respect to the RINs' value.

To illustrate: If the market today values biodiesel RINs at $.50/RIN, and a refinery receives a waiver at 10:00am, that means that all RINs the refinery was holding in order to demonstrate compliance to EPA will eventually enter the market (since the refinery doesn't need them anymore), thereby diluting RIN values and lowering the cost of RINs (similar to how the value of money decreases when central banks print more of it). Once the refinery receives the waiver and begins selling its RINs to other market participants, the refinery can do so at the higher $.50/RIN price because their counterparties do not know that a waiver has been granted and that the price of RINs should be lower. It is not until after the RINs are sold that stakeholders can analyze market activity and determine that waivers were given and downwardly adjust RIN values accordingly.

Throughout all of this, fuel marketers such as myself that have invested in biodiesel tanks and blending equipment are seeing the value of such investments diminish because biodiesel demand is diminishing as RIN prices go down.

I made these investments because I saw the direction Congress was pushing retail diesel markets when it enacted the RFS and it became clear to me that these investments would be necessary in order to remain competitive. If I didn't invest in biofuel infrastructure and adjust my business practices to accommodate biodiesel, my business would be at a serious disadvantage today relative to my competitors

that did adjust. That's why I made the adjustments. It is wrong for companies that didn't plan ahead like this to be rewarded at my expense.

The EPA is certainly able to accommodate waiver requests in a manner that is consistent with the RFS by simply requiring that all requests be received a minimum period of days (*e.g.,* 60 days) *prior to* finalizing RVOs for a given compliance year. That way, when RVOs are finalized, the market can be confident that those numbers will not be adjusted downward after-the-fact. It would arguably be most consistent with Congress's intent if the Agency upwardly adjusted the RVOs applicable to refiners that have not received waivers; this would allow the market to satisfy the entire RVO while at the same time alleviating any purported hardship on small refiners.

FUTURE PROSPECTS OF ADVANCED BIOFUEL

The future prospects for advanced biofuel are in Congress's hands. As the last decade has shown, if Congress puts in place achievable, growth-oriented, market-based incentives, advanced biofuels can continue to grow. At the same time, if the current volatility and uncertainty surrounding the RFS and the biodiesel tax credit remain, the industry's growth will be stunted.

In examining reform proposals, Congress must recognize that because advanced biofuels cost more money than the fuels they are trying to displace, they must continue to be subject to robust federal incentives in order to penetrate the market. Additionally, although I recognize it is not this committee's jurisdiction, providing long-term certainty with respect to the biodiesel tax credit would also

improve the market environment for advanced biofuels. Finally, refiners seeking waiver requests for a given compliance year should be required to submit those requests *prior* to the RVOs for that year being finalized, and EPA should not be permitted to grant waivers after the RVOs are finalized.

CONCLUSION

Thank you for the opportunity to present testimony before you today. On behalf of NATSO, I look forward to continuing to work with Congress on the issues discussed above, and I am happy to answer any questions you may have.

Mr. SHIMKUS. Thank you very much.

Now I would like to turn to Mr. Randy Howard. For full transparency, REG operates national biodiesel refinery in Danville, Illinois, which is in the northern part of my congressional district. And he is the CEO of our renewable energy group.

You are recognized for 5 minutes. Welcome.

STATEMENT OF RANDY HOWARD

Mr. HOWARD. Thank you.

Chairman Shimkus, Congressman McNerney, and members of the subcommittee, it is my pleasure to be here with you this morning. I am Randy Howard, President and CEO of Renewable Energy Group, or REG. I am honored to speak to you today on behalf of the National Biodiesel Board and more than 60,000 men and women across the country that support the biodiesel industry.

Established in 1992, NBB is the leading U.S. trade association representing biodiesel and renewable diesel, including producers, feedstock suppliers, and fuel distributors.

Let me tell you a little about my company. REG is the largest domestic producer of advanced biofuel making biodiesel in 10 plants across the United States. We also own and operate a 75 million gallon renewable diesel refinery in Louisiana and two biodiesel plants in Germany. Combined, our plants have demonstrated the annual production capacity of 575 million gallons. We currently employ 840 people in our company in good-paying jobs and also support thousands of other jobs in agriculture, transportation, and energy sectors.

I first joined REG as a member of their board of directors after a 33-year career in the petroleum industry. When I retired from Unocal 76 in 2005, the oil industry was embracing renewable fuels as part of the Nation's all-of-the-above strategy. I saw then and continue to see biomass-based diesel as the key to the future of liquid transportation fuels, transforming waste, fats, and oils into high-quality, low-emission renewable fuel that extends our precious petroleum reserves and contributes greatly to the energy security of America.

The most important part I would like to make to you today is that biodiesel is truly a success story of the RFS, helping to realize the energy security and environmental benefits that are RFS was intended to achieve. Biodiesel is by far the most wildly used advanced biofuel, meeting more than 90 percent of the annual RFS advanced biofuel obligations. According to EPA, biodiesel reduces lifecycle greenhouse gas emissions by 57 percent to 86 percent compared to petroleum diesel. The greenhouse gas reductions from 15.5 billion gallons of biodiesel used through 2017 equates to the removal of over 30 million passenger vehicles from America's roadways.

Biodiesel has consistently delivered more than the RFS currently requires, and we can do much more. Federal and industry data shows the U.S. biomass-based diesel plants operate at the start of this year have an aggregate capacity of more than 2.6 billion gallons. Since that time, companies have announced or completed another 238 million gallons of expanded capacity. REG just completed

a 20 million gallon expansion of our first plant, and we are looking at a major expansion of renewable diesel in the future.

Biodiesel can also help to boost U.S. exports and rebalance international trade. The EIA estimates growth of another 200 billion gallons of distillate fuel demand worldwide by 2030. U.S. biodiesel is and should be a part of that growth.

Second, in addition to these energy and environmental benefits, biodiesel supports rural American jobs. Biodiesel can help solve the current farm crisis. Farm income has declined steadily over the last 4 years, reaching lows not seen since 2009. Last year, REG added value to nearly 4 billion pounds of agricultural waste.

Feedstock diversity continues to be a strength of our industry. U.S. producers utilize a wide range of feedstocks, such as recycled cooking oil, vegetable oils, animal fats, and distillers corn oils. This diversity allows biodiesel and renewable diesel producers to alter feedstock use based on regional and global market dynamics. Supplies are ample and continue to grow. There is also a number of feedstock pathway applications which EPA has not acted on, in some cases for several years, which would provide even more feedstocks.

Third, there are no infrastructure barriers to biodiesel's continued growth. While biomass-based diesel currently makes up less than 5 percent of the distillate pool, there are hundreds of fuel retailers across the U.S. selling biodiesel blends up to B20, or 20 percent. REG and other advanced biofuel companies are selling high biodiesel and renewable diesel blends to a growing list of corporate and municipal customers. We are proud to have customers such as FedEx, UPS, and the New York City sanitation department, just to name a few.

In closing, biodiesel is a renewable industry success story and stands ready to deliver more gallons and more economic and environmental benefits to the market. The RFS provides a winning combination of benefits for Americans, greater energy security, substantial environmental benefits, and enhanced value-added agriculture. We would ask Congress to continue the support of the program and to use its oversight authority to ensure the EPA administers the program according to Congress' intent.

I look forward to answering your questions, and thank you for this opportunity.

[The prepared statement of Mr. Howard follows:]

Testimony of Randy Howard, Renewable Energy Group (REG)
On Behalf of the National Biodiesel Board
Submitted to the Energy and Commerce Committee, Subcommittee on Environment
Hearing on Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects
June 22, 2018

Good morning, Chairman Shimkus, Ranking Member Tonko, and Members of the Committee. Thank you for having me.

I am Randy Howard, President and CEO of Renewable Energy Group (REG). I came to REG as a member of their Board of Directors after a 33-year career in the petroleum industry. When I retired from Unocal 76 in 2005, the oil industry was embracing renewable fuels as part of the nation's "all of the above" strategy. I saw then and continue to see biomass based diesel as a key to the future of liquid transportation fuels. Transforming waste fats and oils into high-quality, low-emission, renewable diesel fuel contributes to our energy security, economic growth, and job creation.

I am honored to speak to you today on behalf of the National Biodiesel Board and the more than 60,000 men and women across the country the biodiesel industry employs. Established in 1992, NBB is the leading U.S. trade association representing the biodiesel and renewable diesel industries, including producers, feedstock suppliers, and fuel distributors.

REG is the largest U.S. producer of advanced biofuel, making biodiesel at 10 plants across the nation. We own and operate a renewable diesel refinery in Louisiana, and two biodiesel plants in Germany. Together, these plants have a demonstrated production capacity of 575 million gallons of renewable fuel. REG currently provides good-paying jobs to 840 employees; we also support thousands of additional jobs in the agriculture, transportation and energy sectors.

The RFS has been the foundation for the biodiesel industry's growth over the past decade and remains a driver of new investment. Moreover, the biodiesel industry has continually proven its ability to produce greater volumes than those set in the annual RFS rules; the U.S. market has consistently supported demand for more than 2.5 billion gallons of biodiesel since 2013. Since the start of 2017, the industry has announced or completed 238 million gallons of additional production capacity. REG just completed a 20-million-gallon expansion of our first plant and we are looking at a major expansion of our Louisiana renewable diesel facility.

Biodiesel truly is a success story of the RFS. It is a renewable, clean-burning diesel fuel made from a diverse mix of resources, including agricultural oils such as soybean, camelina, and canola oil, as well as recycled cooking oil and animal fats. Based on the performance standards established by law, the U.S. Environmental Protection Agency (EPA) has defined biodiesel as an advanced biofuel — meaning it reduces greenhouse gas emissions from 57 percent to 86 percent compared to petroleum diesel, according to EPA. It is the nation's first domestically produced, commercially available advanced biofuel.

Biodiesel is used from coast to coast—for heavy-duty trucking, farm equipment, compliance with low-carbon fuel standards and fleets, such as emergency vehicles and buses. There are biodiesel production plants in nearly every state.

Biodiesel does not require special fuel pumps or engine modifications. In fact, the majority of automobile manufacturers support biodiesel blends up to 20 percent in their engine warranties. Biodiesel meets a strict fuel specification set forth by ASTM International—the official U.S. fuel-certification organization. Renewable diesel is a fuel made from the same feedstocks as biodiesel but using a different process—one more similar to petroleum refining. The resulting product (renewable diesel) is chemically indistinguishable from petroleum diesel but made from renewable feedstocks.

The RFS has been a tremendous success:

Jobs Are Created, Economies Grow. With biodiesel plants nationwide—from California to Texas to North Carolina—the biodiesel industry directly supports more than 60,000 jobs, $11.42 billion in economic impact, and $2.54 billion in wages paid. In many rural areas of the country, biodiesel plants are a driving force of the local economy, supporting the employment of technicians, plant operators, engineers, construction workers, truck drivers, and farmers. Producers nationwide are poised to expand production and hire new workers with steady growth under the RFS. Every 500 million gallons of increased biodiesel production directly and indirectly supports 16,000 additional jobs.

Value Is Added to Other U.S. Economic Sectors, Such as Agriculture. Biodiesel provides very strong soybean price support. Biodiesel importantly allows U.S. soybean farmers to be more competitive in the global protein market, as demand for biodiesel supports U.S. soybean processing and export opportunities. Policy certainty is one of the most important factors in making significant investment decisions in value-added businesses like biodiesel.

Consumers Get Choice at the Pump. Biodiesel is a cost-effective, renewable alternative to petroleum diesel that, with help from the RFS, is saving diesel consumers money. Each gallon of RFS-qualified biodiesel is accompanied by a RIN credit. The value of that credit, which is traded on the open market, is factored into the value of each gallon of biodiesel. This added value allows producers to sell biodiesel at a lower price to fuel distributors or fleet managers, who can then pass along savings to consumers.

Energy Security Is Enhanced. Biodiesel is diversifying our fuel supplies so that we are less dependent on global oil markets that are influenced by unstable regions of the world and global events beyond our control. Despite increased domestic oil production, consumers will remain vulnerable to volatile international oil prices without diversity and competition in the fuels market.

Environmental Benefits Are Secured. According to EPA, biodiesel reduces lifecycle greenhouse gas emissions by 57 percent to 86 percent compared to petroleum diesel. The 15.5 billion gallons of biodiesel used through 2017 have cut greenhouse gas emissions by the same amount as removing 30 million passenger vehicles from America's roadways. EPA consistently cites

tailpipe emissions from traditional diesel—primarily from older trucking fleets and other heavy-duty vehicles—as a major national health hazard. Substituting higher amounts of biodiesel for traditional diesel fuel is the simplest, most effective way to immediately reduce diesel emissions. In addition to dramatically reducing most major air pollutants, biodiesel keeps wastes out of both landfills and the nation's waterways.

So, what can Congress do to ensure that biodiesel and advanced biofuels continue to meet U.S. transportation fuel needs? In short, ensure stability and predictable growth in the program. We believe it is important for all stakeholders in the transportation fuels industry to have policy certainty – not only the farmers, biofuel producers and their investors, but also the blenders and customers who choose to purchase the fuels.

The biodiesel industry has proven its ability to produce over and above the volumes set each year by EPA. We continue to grow and to invest, even in the face of policy uncertainty. Congress should use its oversight authority to ensure that EPA sets annual volumes that support market growth for both biodiesel and advanced biofuels and make certain the agency continues to implement the RFS program as designed.

Thank you again for the opportunity to submit this testimony. REG, NBB, and I would be pleased to serve as a technical resource on the industry as the committee moves forward with its deliberations.

Mr. SHIMKUS. I thank the gentleman.

The chair now recognizes Mr. Brooke Coleman, Executive Director at Advanced Biofuels Business Council. He has been here before. Welcome back.

STATEMENT OF BROOKE COLEMAN

Mr. COLEMAN. Good morning, Chairman Shimkus, Congressman McNerney, members the committee. My name is Brooke Coleman. I am the Executive Director of the Advanced Biofuels Business Council. Thanks for the opportunity today to testify. We represent worldwide leaders in the effort to develop and commercialize the next generation of advanced and cellulosic biofuels.

By any measure, the RFS is doing what it was designed to do. The ethanol industry alone has built 200 biorefineries in the last 30 years to the oil industry's roughly 10 and now displaces the rough equivalent of Saudi Arabia and foreign oil. And few, if any, of the companies producing first-generation biofuels are not somehow invested in advanced biofuels.

It is politically expedient to cast the RFS as good for first-generation biofuels but less effective at promoting advanced biofuels. These claims are designed to divide and conquer the left-right coalition that made the RFS a reality and are wildly overblown. Already advanced biofuels make up about 20 percent of the volumes required under the RFS, and now the most technologically advanced biofuel, cellulosic biofuel, is on the precipice of large-scale commercial growth.

Policy and financing uncertainty notwithstanding, we are producing commercial volumes of cellulosic ethanol from agricultural residues and municipal solid waste. Not everyone has succeeded in the timeframe anticipated, but delay should not be mistaken for failure.

So let me address the elephant in the room. Why are we measuring cellulosic biofuels by the millions instead of the billions, as anticipated? Certainly, the global recession occurring shortly after the passage of the law slowed things down. When things started to get better in the 2012–2013 timeframe, the previous administration succumbed to oil industry pressure and stopped enforcing the law altogether. The RFS was back on track in November 2016, but the current administration almost immediately proposed to cut RFS volumes, ultimately turning to refinery waivers to roll the program back and create the investment uncertainty that biofuel innovators are too familiar with.

While it is certainly plausible to argue that these implementation issues could be cured by amending the statute, we disagree. Current law could not more clearly prohibit the type of waivers used by the Obama administration from 2013 to 2016 as recently confirmed by, I believe, the 10th circuit. But they did it anyway. Current law could not more clearly prohibit giving small refinery waivers to some of the largest refiners in the world, but the current administration did it anyway. Current law could not more clearly make woody biomass and corn fiber eligible for the RFS. But a decade later, we still don't have answers about trees, and many corn fiber pathways are logjammed at EPA.

These aren't statutory problems. They are political will problems, and not the political will in this room. We do not support trying to cure a political will problem by opening up an already strong Clean Air Act statute. It is unclear to me what political metric would suggest that the current political environment would produce a stronger statute for advanced biofuels than we have today. But either way, the process would not produce solutions to the problem at hand.

Let me finish with a couple of thoughts. The RFS is essentially a contract designed to convince the private sector to spend billions of dollars to bring new fuels to market, and they have done that. Single companies in my council have spent $500 million alone. If you want to keep U.S. investment, keep and hold program administrators to this commitment.

Two, proper enforcement of the law is extremely important for our fuel industry. Fuel markets are not free markets. Oil prices are manipulated at the top by OPEC often for the express purpose of weakening competition, including in the oil industry. At home, ethanol has been the cheapest form of octane for decades. But without policy, we struggle to find buyers because the oil industry would prefer to buy octane from themselves, even when it is cheaper.

Number three, while it may not seem like it, the oil industry is running out of ways to avoid the law. The courts have struck down prior misuse of RFS general waiver authority already, and the absurdity of the current small refinery waiver scheme has and will continue to be exposed.

Four, there are much easier ways to produce step change results for my industry and advanced biofuels in general. I will mention two. First, it is not easy work, and progress has certainly been made. But EPA must kick out eligibility pathways faster. For example, we can produce hundreds of millions of gallons of cellulosic ethanol from corn fiber in the near term if we can clear the pathway logjam at EPA. Clarity on municipal solid waste are two more that have already been mentioned.

Second, and this is largely for cellulosic ethanol. Regulator parity for RVP, which we have discussed, Reid vapor pressure, would open new and immediate opportunities for growth in cellulosic ethanol. As you mentioned, 15 billion gallons is capped.

I will close by saying that it may not be the sexiest answer to the question asked, but the best statutory path remains the path that we are on.

Thank you.

[The prepared statement of Mr. Coleman follows:]

Testimony of:

Mr. Brooke Coleman

Executive Director, Advanced Biofuels Business Council

U.S. House of Representatives

House Energy and Commerce Committee, Subcommittee on Environment

June 22, 2018

One Page Summary of Key Points

The Advanced Biofuels Business Council represents worldwide leaders who are developing and commercializing next generation, advanced and cellulosic biofuels, ranging from cellulosic ethanol made from switchgrass, wood chips and agricultural waste to advanced biofuels made from sustainable energy crops, municipal solid waste and algae.

The Council's website (AdvancedBiofuels.org) details roughly two dozen advanced/cellulosic biofuel projects in the United States and abroad.

My testimony today will focus on how to generate growth in the advanced and cellulosic biofuel sector.

The answer is straightforward: stay the course on the Renewable Fuel Standard (RFS). The RFS makes competition possible in an otherwise non-competitive market, making our industry's future prospects and the trajectory of our success tied to key decision-making by regulators and legislators.

Written Testimony of:

Mr. Brooke Coleman

Executive Director, Advanced Biofuels Business Council

U.S. House of Representatives

House Energy and Commerce Committee

Subcommittee on Environment

June 22, 2018

Good morning Chairman Shimkus, Ranking Member Tonko, and members of the Subcommittee. My name is Brooke Coleman and I am the Executive Director of the Advanced Biofuels Business Council (ABBC).

The Advanced Biofuels Business Council represents worldwide leaders who are developing and commercializing next generation, advanced and cellulosic biofuels, ranging from cellulosic ethanol made from switchgrass, wood chips and agricultural waste to advanced biofuels made from sustainable energy crops, municipal solid waste and algae. Our companies produce a wide variety of advanced biofuels and chemicals, including cellulosic ethanol, biodiesel, biogas and bio-jet fuel. Our members include those operating production facilities, those augmenting conventional biofuel plants with "bolt on" or efficiency technologies and those developing and deploying the technologies that make advanced biofuel production a commercial reality, including some of the largest cellulosic ethanol and advanced

biofuel enzyme production facilities in the world. The Council's website (AdvancedBiofuels.org) details roughly two dozen advanced/cellulosic biofuel projects in the United States and abroad.

My testimony today will focus on how to generate growth in the advanced and cellulosic biofuel sector. The answer is straightforward: stay the course on the Renewable Fuel Standard (RFS). The RFS makes competition possible in an otherwise non-competitive market, making our industry's future prospects and the trajectory of our success tied to key decision-making by regulators and legislators. Ongoing biofuel industry growth – particularly in advanced biofuels – will depend on consistent administration of the RFS as required by the statute, coupled with increased synchronization between the broader policy goal of increased biofuel use and the gasoline/motor fuel regulations that restrict or facilitate those outcomes.

1) **The RFS reduces our reliance on foreign oil and insulates American consumers from the price fluctuations in the global oil market, controlled by outside forces like OPEC.**

Global oil markets are (collusively) price-controlled by OPEC at the global level and are extremely consolidated and vertically integrated domestically. The absence of free market forces in the liquid fuel marketplace are a problem for the advanced biofuels industry (and other innovators) because non-competitive marketplaces do not properly facilitate and reward innovation.

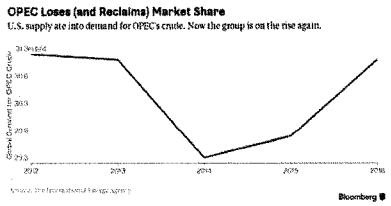
Non-competitive and non-price driven markets are almost impossible to predict regarding future demand opportunity, because the market does not behave based on free market fundamentals and the creation of a better product does not necessarily translate into market demand.

This lack of predictability increases investment risk – or makes risk difficult to assess precisely – which in turn drives investment and potential strategic partners to other sectors.

Recent trends are a case in point for why proper RFS implementation is so important to the development of advanced biofuels.

Certain members of OPEC decided in late 2014 to allow global crude oil prices to slip in part to stop competition from emerging U.S. domestic tight oil production and reclaim market control. In simple terms, colluding to lower the price of oil changes the economics on U.S. oil (and other fuel) production, which struggled to compete with collusively depressed oil prices in the 2014-16 timeframe.

A recent Bloomberg report entitled "OPEC Is About to Crush the U.S. Oil Boom" notes that the strategy worked during that period.[1] And an OPEC September 2015 report openly acknowledged the effort and its effects: "In North America there are signs that US production has started to respond to reduced investment and activity. Indeed, all eyes are on how quickly US production falls."[2] As U.S. domestic oil production slowed, dependence on OPEC oil turned directionally and increased again through 2016. The figure below shows how quickly Saudi Arabia recovered market share in the wake of artificially depressed oil prices.

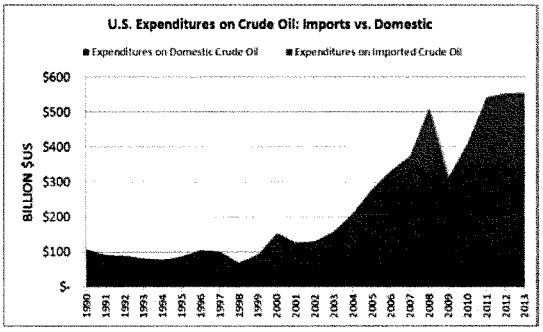


Even with "new" U.S. oil production, the vulnerability of the U.S. economy to foreign oil dependence is all about price. OPEC will inevitably reduce output at some point, and crude oil prices will increase sharply. If the U.S. continues to consume far more oil than it produces (inevitable) and oil prices

[1] See: http://www.bloomberg.com/news/articles/2015-10-20/after-year-of-pain-opec-close-to-halting-u-s-oil-in-its-tracks.
[2] See: http://www.opec.org/opec_web/static_files_project/media/downloads/publications/MOMR_September_2015.pdf.

increase (inevitable), consumers will continue to spend enormous sums of money on foreign oil and the U.S. economy will continue to suffer at the hands of its dependence on foreign oil.

The magnitude of the economic drain can be staggering. Americans transferred nearly $1 trillion to OPEC members during the oil price spike of 2008, in just 6-8 months. The figure below demonstrates how increasing U.S. oil production does not necessarily protect the U.S. economy and consumers from unsustainable and dangerous levels spending on foreign oil.

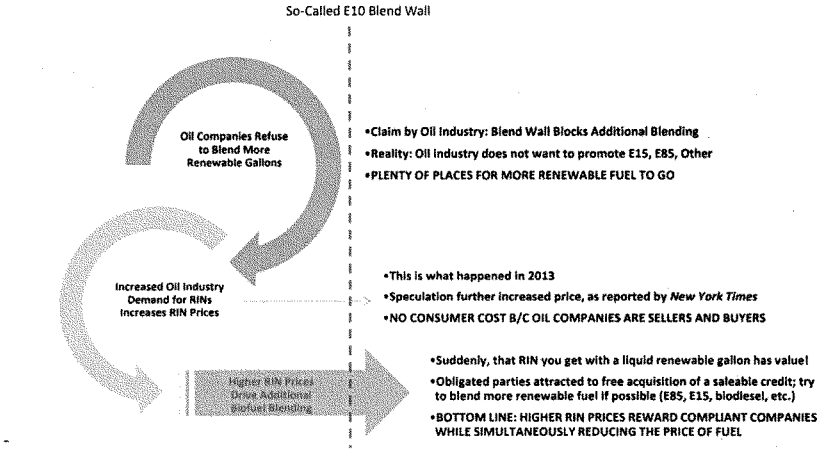


2) The RFS opens markets to renewable fuels, notwithstanding resistance among incumbents to utilizing low carbon renewable fuels.

With the RFS, Congress sought to bolster energy independence and security by increasing the amount of clean, renewable fuel used in the domestic transportation fuel pool. The RFS is an aggressive but flexible program that requires obligated parties to blend increasing volumes of various types of renewable fuel over time. The RFS does what a free market would do on its own: reward innovation.

The effectiveness of the program essentially boils down to how EPA manages market demand for Renewable Identification Numbers (RINs). The primary value of the RIN program, other than facilitating compliance and some level of compliance flexibility, is its ability to increase market access for renewable fuels. That is, when an oil company refuses to blend more liquid biofuel, they can buy a RIN on the open market instead. If a significant number of oil companies refuse to blend liquid gallons and seek RINs on the open market, RIN trading and values increase because of this affirmative non-compliance. Higher RIN prices then provide an extra incentive for other obligated parties to blend physical quantities of (liquid) renewable fuel, because they acquire a (now more) valuable and salable RIN with each gallon of renewable fuel purchased.

How RINs Work to Facilitate Objectives of RFS



Source: ABBC Presentation, Third Way Briefing, U.S. Senate Briefing

Actions to artificially depress the price of RINs – like a RIN cap or an export subsidy – depress biofuel demand and undermine the RFS program.

3) Cellulosic and advanced biofuels have significant growth opportunities under a properly administered RFS.

When the RFS is properly administered, there is enormous growth opportunity for advanced and cellulosic biofuels.

Gasoline demand is increasing, not decreasing. The week ending June 8, 2018 marked the highest weekly gasoline consumption ever recorded in the United States.[3] Gasoline consumption reached a new record high in 2016, breaking the previous record from 2007. Consumption is consistently matching that level and expected to reach another record high in 2018 and again in 2019. [4] Advanced and cellulosic biofuels cut emissions in every gallon and insulate U.S. consumers from the price impacts of the global oil market.

According to the Sandia National Laboratory, the U.S. could produce 75 billion gallons per year of cellulosic biofuels (one subset of the advanced biofuel industry) without displacing food and feed crops.[5] This would be enough cellulosic biofuel alone to displace more than half of gasoline demand. A Bloomberg analysis looked at select regions in the world to assess the potential for next generation ethanol production. The study found that eight regions – Argentina, Australia, Brazil, China, EU-27, India, Mexico and the United States – could displace up to 50 percent of their demand for gasoline by 2030 making cellulosic ethanol from a very small percentage of its each region's agricultural residue supply alone.

It is both an exciting and challenging time for the cellulosic biofuels industry and the advanced biofuel industry as a whole. The technology is commercially ready, and the industry is deploying at

[3] See https://www.eia.gov/petroleum/weekly/gasoline.php, June 20, 2018

[4] See https://www.eia.gov/outlooks/steo/marketreview/petproducts.php; June 20, 2018.

[5] See https://share.sandia.gov/news/resources/news_releases/biofuels-can-provide-viable-sustainable-solution-to-reducing-petroleum-dependence-say-sandia-researchers/.

commercial scale. We are embarking on the process of securing efficiencies that can only be achieved via commercialization (i.e. the "experience curve") and economies of scale. When the corn ethanol industry started building plants, their production costs exceeded their feedstock costs by a large margin. However, corn ethanol producers have reduced their production costs by roughly 60 percent since the first commercial plants were built in the 1980s. Likewise, some solar companies have seen a similar 60-70% production cost reduction in just the last ten years, as capacity has increased significantly. The U.S. is in position to lead the world when it comes to the development of advanced, low carbon biofuels. And yet, we face as much policy uncertainty as we ever have before, almost always generated by fabricated claims about renewable fuels and the RFS. Incumbents in the fuel energy space are going after our tax provisions, our farm bill programs, and of course, the RFS. It is important to understand that this is happening because of the effectiveness, rather than ineffectiveness, of these programs to drive consumer choice at the pump.

4) **EPA's failure to act on regulations to permit year-round sales of E15 is impeding market growth for cellulosic ethanol and sidelines a policy action that will increase biofuel blending and reduce RIN prices, lower gas prices and cut emissions.**

The Environmental Protection Agency has failed to move forward with regulations to permit year-round sales of E15, creating market uncertainty and preventing growth.

E15 adoption – as essentially a 3-season fuel – has helped cellulosic ethanol makers demonstrate growing ethanol demand, which can be a challenge for investors to internalize in a complex, regulated market. However, the unavailability of E15 in the summer has dampened retailer interest in making the arrangements to offer the fuel at all. And it has thereby dampened enthusiasm on the project finance side due to uncertain market demand.

- E15 is currently available in 30 states, but the current regulations limit the availability of E15 during the summer months when consumers are spending more time on the road. E15 is currently not able to be sold from June 1 to September 15. Fixing the Reid Vapor Pressure (RVP) regulations would put us on the path to an additional 1.3 billion gallons of ethanol demand within five years.
- Fixing the RVP would also reduce costs for retailers. E15 retailers face costs of up to $1.5 million dollars each year just to relabel pumps around RVP when E15 can and cannot be sold, while other markets are entirely shut off for consumers because retailers cannot adjust for these barriers.
- Allowing E15 to be sold year-round will increase RIN supply and bring down RIN prices – a request refiners repeat frequently.
- Increased use of E15 will lower gas prices for consumers.

Some have argued that the cellulosic ethanol industry does not need a growing overall ethanol marketplace to succeed since second-generation ethanol can theoretically displace first-generation ethanol in a constrained marketplace. This is a well-meaning, but illogical, argument for two primary reasons.

First, the biofuel industry is inherently linked together. As shown in a Third Way report, most cellulosic ethanol first movers are also first-generation ethanol producers.[6] As such, any policy that requires second-generation ethanol production to displace first-generation ethanol essentially requires cellulosic ethanol first movers to cannibalize their current business model. Ethanol companies are not going to innovate to undercut their own existing technology any more than solar and wind companies would invest hundreds of millions of dollars in better panel and turbine technology if they were only

[6] See http://www.thirdway.org/report/cellulosic-ethanol-is-getting-a-big-boost-from-corn-for-now

allowed to displace existing solar panels and wind turbines. Notably, it is the revenue from first generation technology that is often being used to develop second generation technology advanced biofuel technology. And project investors – many of which have existing stakes in these companies – are not going to undercut current assets either.

Second, the primary objective of U.S. biofuel policy – embodied in part by the Energy Independence and Security Act of 2007 – is to reduce the use of foreign oil (i.e. energy independence and security rather than independence from U.S. production of first generation biofuels). Many of the proponents of the replacement of first-generation ethanol with second-generation ethanol cite climate change concerns as the basis of the position (i.e. because cellulosic ethanol has a better carbon footprint than corn ethanol). However, it is unclear how it is more prudent climatologically to displace corn ethanol (recently assessed by USDA to be 43 percent better than petroleum on a full lifecycle basis) rather than petroleum derived from tar sands (~20 percent more carbon intensive than average petroleum) or other increasingly carbon-intensive methods with cellulosic ethanol. [7]

Independent analysis confirms that most types of first- and second-generation biofuels reduce greenhouse gas emissions, in many cases by very large amounts. This includes analysis conducted by U.S. EPA, the California Air Resources Board (CARB), the U.S. Department of Energy, the U.S. Department of Agriculture and top energy labs such as Argonne and Oak Ridge National Laboratories.

For example, the latest peer-reviewed analysis coming out of the U.S. Argonne National Laboratory shows that all types of ethanol – the type of renewable fuel usually scrutinized for its GHG emissions – have significantly lower lifecycle greenhouse gas emissions than petroleum, even with penalty for indirect land use change. It is worth highlighting that the Argonne National Laboratory developed the GREET model, which remains the gold standard for modeling carbon lifecycle emissions

[7] See https://www.usda.gov/oce/climate_change/mitigation_technologies/USDAEthanolReport_20170107.pdf; http://www.businessinsider.com/canadas-oil-sands-produce-20-more-greenhouse-gases-2015-6; and, http://www.ibtimes.com/us-shale-oil-boom-when-it-comes-co2-emissions-not-all-crude-oil-created-equal-1843616.

from fuels (e.g. and is the analytical basis for the California Air Resources Board Low Carbon Fuel Standard as "CA-GREET"). In particular (as S. 517 allows for more ethanol use), all five types of biofuels shown below are ethanol. Many of these biofuels are significantly more carbon reductive than technologies often regarded to be the most innovative (electric drive, hydrogen). Some cellulosic ethanol facilities can deliver fuel to market with more than a 90% greenhouse gas emission reduction.

Latest Well-to-Wheels Greenhouse Gas Emissions Reduction

Relative to Average Petroleum Gasoline

WTW GHG emission reductions	Corn	Sugarcane	Corn stover	Switchgrass	Miscanthus
Including LUC emissions	19–48% (34%)	40–62% (51%)	90–103% (96%)	77–97% (88%)	101–115% (108%)
Excluding LUC emissions	29–57% (44%)	66–71% (68%)	89–102% (94%)	79–98% (89%)	88–102% (95%)

Source: Argonne National Laboratory[8]

The carbon benefits of increasing the use of renewable fuels are even greater when you consider real world conditions – i.e. the fact that renewable fuels replace marginal (rather than average) gallons of petroleum. To illustrate, Petrobras chief Jose Sergio Gabrielli has declared that "the era of cheap oil is over." This means that oil companies are shifting very quickly to an increasing reliance on more expensive and riskier "unconventional" fuels – including tight oil (e.g. the Bakken), deep water (e.g. Gulf of Mexico, Deep Water Horizon) and Canadian tar sands (e.g. Keystone) – to meet the global demand for fuel energy.[9]

[8] See http://iopscience.iop.org/1748-9326/7/4/045905/pdf/1748-9326_7_4_045905.pdf
[9] See http://www.eia.gov/forecasts/aeo/MT_liquidfuels.cfm#crude_oil

Unconventional oil is harder to find and can result in serious ecological problems (earthquakes, drinking water contamination, ecosystem destruction in the case of the Gulf). But these fuels are also more carbon intensive than the "average petroleum" often used to compare the carbon value of renewable fuels. There are many recent studies that have looked at the real world "marginal" impact of increasing the use of renewable fuels. One of the more extensive is a 2014 analysis conducted by Life Cycle Associates in California, which concluded that today's first-generation ethanol – assessed by EPA in 2010 to be 21 percent better than 2005 petroleum with regard to lifecycle GHG emissions – is 32 percent better than 2012 average petroleum and 37-40 percent better than petroleum derived from tar sands and fracking. The report notes that using less renewable fuel will increase the use of these "marginal" or unconventional types of oil:

> The majority of unconventional fuel sources emit significantly more GHG emissions than both biofuels and conventional fossil fuel sources ... [t]he biggest future impacts on the U.S. oil slate are expected to come from oil sands and fracking production ... significant quantities of marginal oil would be fed into U.S. refineries, generating corresponding emissions penalties that would be further aggravated in the absence of renewable fuel alternatives." *Source: Life Cycle Associates, January 2014*

These findings are consistent with recent (lower resolution) assessments by federal agencies. For example, a recent report released by the Congressional Research Service (CRS) found that Canadian oil sands are 14-20 percent more carbon intensive than the 2005 EPA baseline.[10] As such, it is an inescapable reality that any proposal to increase renewable fuel blending is a proposal to reduce U.S.

[10] See http://www.fas.org/sgp/crs/misc/R42537.pdf

consumption of high carbon intensity, unconventional oil. If the high-carbon-intensity marginal gallon of oil is displaced by cellulosic ethanol, the carbon benefits are enormous.

5) EPA actions have destroyed demand for biofuels, limiting growth of advanced and cellulosic biofuels.

This year, EPA approved at least 25 small refinery waivers for refiners, some of which are not small or experiencing hardship.[11] These actions are a massive expansion of the previous use of the waiver authority. It has been reported that EPA granted small refinery waivers to almost any refiner who applied, including industry giants.

The improperly granted waivers are destroying biofuel demand and have rolled back the amount of renewable fuel blended into our transportation fuel to 2013 levels. The waivers have cut biofuel consumption by 1 to 1.5 billion gallons to 2013 levels, cutting demand for corn by over 2 million acres at a time when farm incomes are at 2006 levels. [12]

EPA has also granted at least two retroactive waivers, further destroying biofuel demand and forgiven 500 million gallons of a single refiner's obligation as part of a bankruptcy proceeding.[13]

And, the EPA has failed to act on a Court remand to add 500 million gallons back into the 2016 RVO.[14]

Because of the importance of the RFS in providing market access to a non-competitive market for biofuel producers, administration of the RFS in this manner, which is inconsistent with the law, impedes growth in the biofuel sector.

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[11] See https://www.reuters.com/article/us-usa-biofuels-epa-refineries-exclusive/exclusive-epa-gives-giant-refiner-a-hardship-waiver-from-regulation-idUSKCN1HA21P.

[12] Letter from National Corn Growers Association to EPA Administrator Pruitt, April 4, 2018.
Letter from Growth Energy to EPA Administrator Pruitt, April 4, 2018.

[13] See https://www.reuters.com/article/us-usa-biofuels-waivers-exclusive/exclusive-epa-grants-refiners-biofuel-credits-to-remedy-obama-era-waiver-denials-idUSKCN1IW1DW.

[14] See https://www.cadc.uscourts.gov/internet/opinions.nsf/5F1D8BC9815C4C698525816B00543925/$file/16-1005-1686284.pdf.

6) EPA delays in approving new pathways for advanced and cellulosic biofuels are slowing growth.

In 2017, EPA staff identified ethanol made from corn fiber as a cellulosic biofuel exceeding expectations and forecasts. And yet, the proposed 2018 RVO included very low targets for corn fiber ethanol and EPA lowered them in the final rule.

Registrations for the individual companies seeking to be eligible for D3 RINs are held up in the regulatory process at EPA. Corn fiber cellulosic ethanol is commercial-ready, stands to create a huge potential growth opportunity in the middle of the country, yet is being held back by red tape. This approach creates a self-fulfilling prophecy in which cellulosic biofuels are held out of the marketplace due to regulatory delay.

7) Refiner regulatory and legislative proposals will reduce demand for advanced and cellulosic biofuels and impede growth.

A) 95 RON Standard

E15 is approved for all 2001 and newer automobiles, representing roughly 90 percent of the vehicles on the road today and has been run for nearly 4 billion consumer miles without any issues. It is sold in 30 states today.

There are clear benefits of moving to a high-octane, midlevel ethanol blend, such as E30, including vehicle engine efficiency, lower tailpipe emissions, and increased use of renewable fuel. But, the refining sector is focused on moving to a 95 RON fuel and repealing the RFS. There are numerous problems with this approach.

- A 95 RON fuel could easily be met with today's premium gasoline, and there would be little to no incentive to move to biofuel blends above 10 percent.

- Most significantly, it cannot be assumed that an increase in octane to 95 RON will be the necessary driver to continue to grow demand for American-made biofuels and for corn *without the access to the market* provided by the RFS.
- A refining industry witness made the point during a hearing before this Subcommittee in response to questions that refiners could choose to move to a non-biofuel, synthetic additive (like MTBE) to meet a 95 RON standard.

B) Export Subsidy RIN

Export subsidy RINs would undermine the goal of the RFS by artificially depressing RIN prices and destroying biofuel demand, reducing demand for corn and hurting farmers. Attaching RINS to exports would lead to retaliatory trade measures by our trading partners, cutting off export markets for U.S. biofuels. U.S. Corn producer revenues losses are estimated to be between $4.2 billion and $16.7 billion over the next five years under an export subsidy scheme. Prices are expected to fall between 4 and 40 cents per bushel.[15]

Conclusion

The RFS is critical to reinvigorating growth in America's heartland and making America more energy secure. The RFS already supports hundreds of thousands of manufacturing jobs, creates new market opportunities for America's farmers and innovators, and has attracted billions of dollars of investment in first-of-a-kind technologies in the advanced and cellulosic biofuels industry.

As previously explained, the RFS is poised to drive the next manufacturing wave across America. Many of the same companies and regions producing first-generation biofuels are now commercializing

[15] "The Impact of Applying RINs to U.S. Ethanol Exports on Corn Farm Revenues," Agribusiness Consulting, presented at Fuels America Briefing June 7, 2018.

EPA-approved advanced and cellulosic biofuels from agricultural residues. The first-generation ethanol industry and our advanced biofuel industry are inherently linked. And, emerging technologies can convert an even broader assortment of biomass and waste materials into American-made biofuels.

The RFS makes competition possible in an otherwise non-competitive market, making the trajectory of our success tied to key decision-making by regulators and legislators. Ongoing biofuel industry growth – particularly in advanced biofuels – will depend on consistent administration of the RFS as required by the statute, coupled with increased synchronization between the broader policy goal of increased biofuel use and the gasoline/motor fuel regulations that restrict or facilitate those outcomes.

Thank you for the opportunity to speak with you today, and I look forward to your questions.

Mr. SHIMKUS. The chair thanks the gentleman.

The chair recognizes Mr. Collin O'Mara, President of the National Wildlife Federation. You are recognized for 5 minutes.

Welcome back.

STATEMENT OF COLLIN O'MARA

Mr. O'MARA. Thank you, Mr. Chairman, and thank you, Mr. McNerney, for convening this session today.

Is this on?

OK. My name is Collin O'Mara, and I am head of the National Wildlife Federation. We are America's largest conservation organization with 6 million members, a couple million hunters and anglers and as well as birders and gardeners, completely bipartisan, representing every part of the country.

And 2 years ago today, I was before this committee talking about this exact issue. And at the time, I said, we were supporters of the original RFS and the RFS2 because of the promise of getting to advance truly sustainable fuels and the promise that was made that there would not be adverse impacts to habitat and to wildlife, both of which have kind of proven not to be true.

And so, at the time, I said, the road to hell is paved with good intentions. But at the end of the day, as my old boss Jack Markell used to say, he used to be Governor of Delaware, a vision without execution is nothing but a hallucination. And I do think that we have to have an honest conversation about the role of government in getting us to the point where we are today. We have distorted these markets to the point where we are basically reducing the amount of investment that we are seeing in the advanced, and we are basically creating a massive incumbent industry that is having adverse impacts on the landscape.

And so I want to talk about three things today. The first one is to expand on the vision for what an advanced biofuel future could actually look like. The second is I want to offer a perspective for why we failed to achieve the vision so far. And I want to suggest some ways that Congress can actually right the ship and reach these elusive goals because I do think—and I do disagree with some of my panelists here. I do think that there is this fallacy that we all accepted 7 years ago, or 11 years ago now, that if we invest in first-generation biofuels, they will automatically lead to kind of the future that we want for the advanced biofuels. And we just simply haven't seen that happen.

And if you look at the amount of venture capital money and equity money going into the advanced fuels, it is a fraction of the money going into traditional corn ethanol. And the reason is pretty simple. If you give a fairly guaranteed return from a fairly predictable program on the first-generation side and you have wildly unpredictable volumes on the next-generation side, of course you are going to put the smart on the last generation. It is just good economics.

In my previous testimony, I talked a lot about the wildlife impacts, the loss of grasslands in the plains. Right now, 87 million acres of land are in corn production. That is the most since World War II. Eighty-nine million acres are in soy production. If you look at those 176 million acres, the production on them, the productivity

on them, is absolutely fantastic. We are getting better and better at being more efficient in the amount of crop that we are producing. This is because of biotechnology, because of the application of fertilizers and pesticides.

The landscape is shifting, so we are losing acres in more arid places—we are basically taking acres that are more arid places out of production, and then we are putting more acres that were habitat in the grassland into production. And what has ended up happening, for folks that care about wildlife and sportsmen, folks who like to duck hunt and pheasant hunt, we are losing some of the best habitat in the country for ducks and for pheasants.

And so kind of the point I wanted to make on the vision was that sustainably harvesting native grasses, native prairie, these could provide feedstock and provide revenues for ranchers and for folks across rural America while continuing to sequester additional carbon, providing homes and forage for wildlife species, and maintaining or enhancing water storage capacity, and offering diversified revenue streams.

The same thing with cover crops. Instead of just paying folks for cover crops that are taking up nutrients, actually harvesting those cover crops, turning those into feedstock for biofuels creates another revenue stream for farmers that are already trying to do their part to improve water quality.

Same thing in areas with more trees and grasses. They could benefit significantly from thinning and using other woodywaste to create a few feedstocks for advanced biofuels.

And so the question is, why aren't we there? If there is all these potential food stocks that have good economics behind them at a micro level, why can't we get to the macro growth? And I would argue it is mainly for two reasons.

The first reason is that EPA's having to lower the statute for their overly ambitious target has really strangled the industry in its infancy. And then, once these annual targets are set, they are consistently undermined by the issuance of these waiver credits. And I think you are hearing broad agreement on that point today.

These moving targets are horrible for both the producers as well as the investors that are looking to make decisions. And so there isn't that incentive to make the big investments for the next generation of fuels.

And so the two industries are in a very different place. If you think about where the corn ethanol industry was 11, 12 years ago, it was in its infancy. We are at 10 percent now. I mean, soybeans right now, it is 2 billion gallons. We have made incredible progress in those areas to the chagrin, in some ways, of the wildlife impacts.

But we haven't seen any of that on the other side. And I think what I would really encourage this committee to do is look at the GREENER Fuels Act that Congressman Welch has introduced. There are a lot of commonsense solutions, bipartisan solutions in that act that will create a lot more certainty in the industry, reduce the conservation and the wildlife impacts from the current RFS, and do it in a bipartisan way.

The longer we wait for a solution, the harder it is going to be to get one. I do think that there is a bipartisan solution here that

could have a huge benefit for wildlife and still achieve that incredible vision for a sustainable energy future at the same time.

I look forward to your questions. Thank you, Mr. Chairman.

[The prepared statement of Mr. O'Mara follows:]

Summary of Testimony
Collin O'Mara, President and CEO National Wildlife Federation
Hearing on Advanced Biofuels under the Renewable Fuel Standard
Friday, June 22, 2008

My written statement and oral presentation will discuss the potential for truly advanced biofuels to displace petroleum fuel while offering ecosystem services such as wildlife habitat, improvements to water quality and storage, and climate change mitigation. I will discuss what the National Wildlife Federation believes have been the primary obstacles to the development and commercialization of advanced and cellulosic fuels. Finally, I will discuss a path forward for the Renewable Fuel Standard and our vision for the role of advanced biofuels in the future. Some of the specific points will include:

- Scientific analysis has shown that second generation advanced fuels can be produced from sources that avoid the pitfalls that have accompanied first generation corn- and soy-based fuels and actually improve the environment while stimulating local economies all across the country.
- These alternatives are badly needed, because increased corn and soy production has destroyed millions of acres of wildlife habitat, sent additional pollution into our waters that feeds massive algal blooms and dead zones, and most likely contributed to climate change.
- The main impediment to development of the advanced sector has been the uncertain and non-binding nature of the RFS2 mandate. The shifting annual volume requirements have created a constantly moving and uncertain target, while the issuance of waiver credits undermines the mandates and the need for the liquid fuels.
- Governmental support for advanced fuels must be prioritized over conventional biofuels.
- The GREENER Fuels Act (H.R. 5212) offers a path forward for the RFS that deemphasizes first generation fuels while creating real mandates to bring advanced fuels to market parity, primarily for use in aviation and shipping, while the rest of the transportation sector moves toward electrification.

Statement of Collin O'Mara

President and CEO of the National Wildlife Federation

Before the House Energy and Commerce Committee, Environment Subcommittee

Hearing on Advanced Biofuels under the Renewable Fuel Standard

Friday, June 22, 2018

Chairman Shimkus, Ranking Member Tonko, Members of the Committee:

Thank you for the opportunity to testify before you today. My name is Collin O'Mara, and I serve as President and Chief Executive Officer of the National Wildlife Federation, the nation's largest conservation organization with more than 6 million members and supporters and 51 state and territorial affiliates, representing hunters and anglers, birders and gardeners, and outdoor enthusiasts from across America. Our mission is to unite all Americans to ensure wildlife thrive in a rapidly changing world—and we work collaboratively to conserve habitat and waterways, promote our outdoor heritage, and connect the next generation with nature.

Today's hearing is an important addition to the Subcommittee's efforts to analyze the successes and shortcomings of the Renewable Fuel Standard (RFS) since it was first passed in 2005. A central feature of the current version of the law is the vision that cellulosic and other advanced biofuels would gradually dominate the renewable fuel hierarchy over time, bringing with them tremendous reductions in climate pollution and other environmental and economic benefits. Yet, as we all know, that promise has failed to materialize, and the next generation of truly advanced fuels made from materials other than food crops currently plays only a tiny role in meeting our fuel demands with little expectation of meaningful growth in the near term.

I fully support this Committee's investigating how this missed opportunity came to pass, and specifically, how the statute creating the RFS has failed to spur – and even inhibited – the growth of the advanced biofuel industry. I would urge you to next go further and act to reform the law to fix the

underlying problems. Given all that is at stake in terms of our changing climate, efforts to clean up our water, and the law's contribution to an escalating wildlife crisis in this country, there is no more time to wait. The RFS must be reformed now, before the problem gets worse and more expensive to solve.

The Potential of Advanced Biofuels vs. the Reality

The National Wildlife Federation supported passage of the RFS in its current form in 2007 because we believe in the potential for truly advanced fuels, if done the right way, to play a meaningful role in our transportation sector while benefiting our environment. The science continues to show that sustainably harvesting native grasses and other plants for biofuels, along with utilizing waste products and residues, can be done so as to protect water quality and quantity, provide habitat for numerous wildlife species such as pollinators and birds, and sequester carbon in the soil. All of these things can be done in concert with other land uses such as livestock grazing, offering farmers, ranchers, and other landowners valuable new revenue streams. A diverse array of biofuel production methods dispersed all around the country, with local options appropriate for each state, region, or soil and climate type: that is the vision we supported.

Corn stover from farms in Iowa, Illinois and Ohio; methane from digesters on dairy and poultry farms from Upstate New York to North Carolina to California; forest thinnings from Georgia, Colorado, and Oregon; and diverse grasses from North Dakota down to Mississippi: all of these could be providing fuel, helping the climate, and benefiting wildlife. This is the type of innovation and entrepreneurship that this law was intended to foster.

What has come about, instead, is by and large an industry dominated by corn and soy production in the center of the country, with fuel transported by truck or rail to the rest of the country. Rather than a mosaic of varying land uses and feedstocks, rising demand for corn and soy has led to an expansion of industrial-scale crop production, some on newly cropped land, and an intensification of

production on existing cropland. Both sides of that coin – expansion and intensification of monocrop agriculture – have negative impacts to wildlife, water quality and availability, and the climate.

Even though it is required by the law to report every three years on the environmental impacts of the RFS, the Environmental Protection Agency (EPA) has failed to issue a report since its first one in 2011, depriving the public and the Congress of the necessary review of the entirety of the impacts of the RFS on our land, water, and air – including the damage that has been done as domestic corn ethanol production surged to more than 16 billion gallons annually, and soy biodiesel to two billion gallons. Yet independent scientific research and modeling have consistently shown that increased crop production has led to conversion of millions of acres of native prairie and other wildlife habitat; increased chemical runoff into waterways that fuels devastating algal blooms like those in Lake Erie, and dead zones like the largest ever in the Gulf of Mexico last summer; declining biodiversity across farm country; and massive climate impacts from land conversion and increased fertilizer use that calls into question the benefits of these first generation fuels.

Furthermore, consumers and local communities have borne the brunt of these impacts. The 400,000 residents of Toledo, Ohio lost access to clean drinking water for three days in 2014 due to a massive toxic algal bloom fed by farm runoff. Polluted waters and dead zones prevent fishing, swimming, and boating, depriving local economies of valuable tourism dollars. Declining pheasant and quail populations and converted natural and conservation lands have prevented hunting opportunities.

Meanwhile, the cellulosic fuels that hold the potential to reverse these alarming trends have been left behind. Even though the law calls for seven billion gallons of those fuels this year, the EPA is requiring a mere four percent of that amount, or 288 million gallons. The rest of the "advanced" category is being filled with soy-based biodiesel, a first generation fuel with nearly the same land, water, and biodiversity challenges as corn ethanol.

What Went Wrong?

While there are many reasons why cellulosic and other next-generation advanced fuels have not come online at any scale, it is critical members of this Committee understand the role the statute, itself, has played in holding them back. For more than a decade, the stagnation of the advanced biofuel industry has not been met with any meaningful revisions to the program. The statute has seen no revision over this time, and the administration of the program has been beset by legal squabbling and political infighting. Meanwhile, fundamental flaws with the program have been left to fester.

At its core, the RFS is a mandate to blend biofuels into gasoline. But for that mandate to mean anything, it has to be binding. In the case of cellulosic and advanced fuels, that has not been the case, leaving this fledgling industry at a loss as to what the requirements are from year to year, and without the certainty that its products will actually be consumed in the market if produced. This has impeded financial investment in the development of new technologies that were proven in labs across the country. In my view, the other factors that have piled on to complicate development and success of the advanced sector are secondary to this fundamental failure of the mandate.

This failure is rooted in the problem of an aspirational mandate. While corn ethanol and soy biodiesel have been around for decades, the RFS2 was meant to stimulate new production methods that did not yet exist – and to do so in a big way. In light of higher-than-expected technological hurdles and a global recession that dried up investment capital, the statutory targets proved wildly optimistic and, in the end, impossible to meet. Faced with having to require so-called "phantom fuels" that did not exist, the EPA has relied on the law's waiver provisions, both waiving down the statutory volumes every year to quite nominal levels and offering waiver credits that obviate the need for actual production of the fuels. Thus, the RFS "mandate" has proven completely non-binding.

The annual volume setting process has been an incredibly fraught political high-wire act. Each year it is met with lawsuits from parties who think the obligations require too many or too few gallons of the various fuel types. The litigation and other difficulties have led EPA to miss numerous deadlines,

setting standards as far as three years retroactively. How can we expect an innovative company trying to make fuel from algae or switchgrass or paper waste to bank on a target that is always changing and uncertain from year to year, and which is most likely to be undercut by waiver credits, which are pieces of paper an oil refiner can purchase in lieu of the required gallons? It is no wonder companies have not been able to attract the necessary capital and investment to turn innovative research into development and actually construct the facilities necessary to bring these fuels to market. Even when companies who do have the capital, like POET, have tried to break into cellulosic fuels, they have found the market untenable and have stepped back.

Others testifying here today can provide better insight into these market realities, as well as the regulatory obstacles that have bedeviled the cellulosic industry. I would just highlight one other factor holding back the next generation of fuels that hold such great promise: the continued, unyielding governmental and political support for corn ethanol. The existing corn ethanol industry and the nascent advanced and cellulosic industries are not the same, and their needs from government intervention are not the same. One is a mature industry that has reached scale and market penetration. Let us be honest and acknowledge that if the RFS were to go away tomorrow, corn ethanol as a fuel additive is here to stay, probably at around the current level of nearly 10 percent. But advanced and cellulosic fuels are unlikely to reach competitive parity without government assistance through some combination of massive research and development, tax credits, and market assurance through the RFS.

The last decade has demonstrated quite clearly that complete fealty to the structure that gave rise to first generation biofuels does not translate to success of the next generation. The corn ethanol "bridge" has been built. It is now time to exit the bridge and build the final destination envisioned by the RFS2, one where cleaner biofuels dominate.

The ethanol industry claims that the blend wall is now standing in the way of next generation fuels by preventing the space for new fuels to enter the market, and that the only way to make space is

to increase the availability of high fuel blends such as E15. This simply is not true. Any fuel could be used to meet the current year mandate of 19.29 billion gallons of renewable fuel. Corn ethanol dominates because it is the cheapest alternative. There is no actual mandate for corn ethanol, while there are supposed mandates for advanced and cellulosic fuels. If EPA decided to increase the cellulosic mandate by 7 billion gallons, cellulosic fuels could be blended instead of corn ethanol. This obviously cannot happen given the state of the cellulosic industry, but it is false to state that the blend wall is the problem. Furthermore, if E15 were to become the new standard, it is equally false to state that the extra ethanol demand would be met by cellulosic fuels. More of the relatively cheaper and available corn ethanol would flood in to fill the gap, thereby exacerbating the existing environmental impacts of industrial corn production.

Looking Ahead

The current structure under RFS2 has worked well for corn ethanol. It has failed to stimulate more advanced fuels. The statutory structure, therefore, needs to be overhauled if the goals of the RFS as envisioned by Congress are to be realized. Tinkering around the edges and applying band aids to appease various aggrieved parties will not suffice.

A blueprint for how to stimulate the next generation of biofuels while protecting and enhancing our natural resources exists. Introduced by Congressman Welch, the GREENER Fuels Act (H.R. 5212) reduces reliance on corn ethanol over time to make room for alternatives. It brings statutory mandates for cellulosic and advanced fuels back to reality and makes them binding. That market certainty, combined with an extended timeline, offer the industry the very basic assurances it needs to know that investment will be rewarded and its product will be consumed rather than discarded. By the time the advanced mandate would sunset under the bill in 2037, the industry will have had a real opportunity to reach economic parity to compete with corn ethanol in a market free from mandates.

This legislation also would address many of the unintended environmental consequences of the RFS and failures of the EPA to monitor or address them. Notably, it includes billions of dollars to help private landowners protect and restore wildlife habitat and conservation areas on their lands, including on working farms and ranches. It also would compel EPA to enforce the existing statutory prohibition of producing biofuels from crops grown on recently converted land. The bill is a shining example of how to protect the environment while shifting U.S. biofuel production in a more sustainable direction.

However, in the long term, the National Wildlife Federation does not envision biofuels completely replacing petroleum to fuel our cars and trucks. We believe the country must move to electric vehicles powered by renewable sources such as wind and solar. The true value in developing cleaner biofuel alternatives is to make an immediate improvement in the transport fuel profile as that transition happens, while developing the alternative biofuels that will power aviation and long-range shipping, which cannot be electrified easily with current technology. The RFS has an important role to play as a proving ground and market stimulator to get those fuels up and running.

In closing, I would reiterate that it is so important for Congress to use the clarity of hindsight to assess where we have been in order to inform the action needed to take us where we want to go. The RFS2 was a visionary attempt to stimulate a cleaner future. In the most important aspects, however, it has largely failed. No law is perfect, and long-term visions require periodic course corrections. Now is the time to take stock and put this policy back on track.

Comprehensive reform of the RFS is badly needed. The core tenets of reform from the National Wildlife Federation's perspective are: deemphasizing first-generation, food-based biofuels over time; establishing realistic, binding mandates for truly advanced and cellulosic fuels that can grow to supplant first-generation biofuels; and confronting and reversing the negative impacts to our climate, water, land, and wildlife stemming from biofuel production. These impacts include the conversion of millions of acres of native prairie and other habitats into crop production, additional nutrient and pesticide

pollution of our waters, loss and degradation of wildlife habitat and other contributions to stress on species, as well as massive emissions of soil carbon and other climate impacts. I strongly encourage members of this Committee to endorse the approach embodied in the GREENER Fuels Act and build on this hearing with swift legislative action.

Thank you, and I look forward to your questions.

Mr. SHIMKUS. Thank you very much.

And last but not least is Mr. Luke Morrow, managing director at Morrow Energy on behalf of the Coalition for Renewable Natural Gas.

Sir, you are recognized for 5 minutes. Welcome.

Mr. MORROW. Thank you. Are you able to hear this?

Mr. SHIMKUS. You are good.

STATEMENT OF LUKE MORROW

Mr. MORROW. OK. Excellent.

Thank you, Chairman Shimkus, Ranking Member, and members of the subcommittee. I am Luke Morrow, President and Founder of Morrow Renewables. I also serve on the board of directors of the Coalition for Renewable Natural Gas, which is the trade association for the renewable natural gas industry. I appreciate having the opportunity to testify today about renewable natural gas, or RNG, and the important role it plays in the RFS program.

RNG is biogas-derived biofuel. Our industry takes untreated biogas captured from landfills, wastewater facilities, and anaerobic digesters and refines it to meet the fuel qualify standards of geologic natural gas. It is fully fungible in existing pipeline infrastructure.

RNG qualifies as cellulosic biofuel under the RFS. It represents over 95 percent of the fuel used to meet the program's cellulosic biofuel requirement and reduces lifecycle greenhouse gas emissions by 80 percent or more compared to conventional diesel fuel.

My company, Morrow Renewables, is based in Midland, Texas. We have been involved in the natural gas industry since 1986 and have been active in the RNG industry for the last 18 years. We work collaboratively with landfill owners, operators, and waste management companies to bring RNG projects to fruition. Our company developed and utilizes patented technologies to refine biogas into high BTU RNG that can be readily used in natural gas vehicles. We employ over 180 people and have seven projects across the Texas, Louisiana, and Arkansas producing cellulosic biofuel.

In fact, 2 days ago, I was the ribbon cutting for our latest project in Melissa, Texas, which is one of our biggest projects to date. This project will produce, at a minimum, 12 million gallons of cellulosic biofuel annually. In total, our current projects produce about 35 million gallons of cellulosic biofuel every year, which we expect to almost double by the end of this year.

Since 2011, the RNG industry has developed over 45 facilities capable of producing high BTU RNG that can be used for transportation applications. There are currently an additional 48 projects under construction or consideration.

Our industry has produced increasing volumes of cellulosic biofuel since RNG was incorporated into the RFS program. RNG production for transportation fuel grew from approximately 33 million ethanol equivalent gallons in 2014 to over 240 million gallons in 2017. That is more than a 620-percent increase in the 3 years—620 percent.

For 2018, the EPA estimated that RNG production would increase by approximately 21 percent over the previous year's levels. EPA actual data show that the industry has grown 29 percent over

the last 12 months. In other words, our industry is currently on track to exceed the EPA's estimate of 274 million gallons of production for 2018.

America's RNG industry has a great story to tell. We are converting waste into a transportation grade fuel that can be used in natural gas vehicles, such as the Metro buses here in Washington, D.C.

In addition, we are providing the fuel needed to meet the RFS program's cellulosic biofuels target and doing it in an environmentally sustainable manner while adding high-paying engineering, manufacturing, construction, and operations jobs to our economy.

As this subcommittee thinks about the future of the RFS program, I want to convey how important policy certainty is to the stability and growth of our nation's RNG industry. I can tell you from firsthand experience that bringing an RNG project to fruition requires significant capital investment and long-term contractual arrangements.

There are things that the EPA can do to provide this stability. Keeping the annual rulemaking process that sets the program's volumes requirements on schedule is helpful. The use of a consistent methodology that recognizes historic growth while accounting for new investment when setting the cellulosic biofuel volume targets will help provide the certainty required to attract additional investment and expand cellulosic biofuel production.

Lastly, I would note that reports of the small refinery exemptions being applied in new expanded ways have injected uncertainty and undermine the economic assumptions upon which capital investments were made and continue to be made in the RNG industry.

We would encourage the subcommittee to take appropriate steps to ensure that the small refinery exemption is being applied in a manner consistent with the letter and intent of the law and in a way that does not undermine our industry's ability to produce additional volumes of cellulosic biofuel.

Chairman Shimkus, ranking member, and subcommittee members, thank you again for the opportunity to testify. I would welcome any questions you may have, and may God bless America.

[The prepared statement of Mr. Morrow follows:]

Testimony of Luke Morrow

President, Morrow Renewables

On behalf of the Coalition for Renewable Natural Gas

Before the U.S. House Committee on Energy and Commerce

Subcommittee on Environment

Hearing on Advanced Biofuels Under the Renewable Fuel Standard:

Current Status and Future Prospects

June 22, 2018

Summary of Testimony:

- Renewable natural gas (RNG) is biogas-derived biofuel. The RNG industry takes untreated biogas captured from landfills, wastewater facilities and anaerobic digesters and refines it to meet the fuel quality standards of geologic natural gas. It is fully fungible in existing pipeline infrastructure.

- RNG qualifies as cellulosic biofuel under the Renewable Fuel Standard (RFS). It represents over 95% of the fuel used to meet the RFS program's cellulosic biofuel requirement, and reduces lifecycle GHG emissions by 80% or more compared to conventional diesel fuel.

- RNG production for transportation fuel grew from approximately 33 million ethanol-equivalent gallons in 2014 to over 240 million gallons in 2017. That is more than a 620% increase in three years. For 2018, EPA estimated that RNG production would increase by approximately 21% over 2017's levels. EPA data shows that the industry has grown 29% over the last 12 months. In other words, our industry is currently on track to exceed EPA's estimate of 274 million gallons of production for 2018.

- Policy certainty is vital to the continued growth of the RNG industry. EPA should administer the program in a stable, predictable manner that is consistent with the RFS program's underlying goal of increasing the domestic production and use of advanced biofuels.

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Chairman Shimkus, Ranking Member Tonko and members of the subcommittee, I am Luke Morrow, President of Morrow Renewables. I also serve on the Board of Directors of the Coalition for Renewable Natural Gas (RNG Coalition). I appreciate having the opportunity to testify today about renewable natural gas (RNG) and the role it plays in the RFS program.

RNG is derived from biogas that has been captured from organic waste streams at landfills, wastewater treatment facilities and anaerobic digestion of manure and agricultural waste. The captured biogas is subsequently refined and upgraded to fuel quality standards that make it indistinguishable from geologic natural gas. RNG is fully fungible in our nation's existing energy infrastructure and can be used to fuel natural gas vehicles. RNG currently fuels more than 20% (by volume) of the nation's medium and heavy duty natural gas vehicles.

RNG qualifies as cellulosic biofuel under the Renewable Fuel Standard (RFS) and generates D3 RINs under the program. RNG represents more than 95% of the fuel used to meet the RFS program's cellulosic biofuel requirements, and is an environmentally-friendly fuel that reduces lifecycle greenhouse gas (GHG) emissions by 80% or more compared to conventional petroleum diesel.

About the Coalition for Renewable Natural Gas:

The RNG Coalition is a not-for-profit association that provides public policy advocacy and education for the RNG industry in North America. The RNG Coalition has over 130 members who represent the full value chain of cellulosic waste feedstock conversion to transportation fuel as regulated under the RFS, including producers of 90% of all the RNG in North America. The association is dedicated to the advancement and increased utilization of RNG as a sustainable domestic fuel resource.

About Morrow Renewables:

Morrow Renewables is a family-owned business based in Midland, Texas. We provide an integrated, end-to-end landfill gas-to-energy solution to the municipal solid waste sector. Working with landfill owners, operators and waste management companies, Morrow Renewables qualifies, finances, develops, installs and operates projects that capture and process vented and fugitive methane to generate new revenue streams and reduce compliance risk for landfill partners.

Morrow Renewables engages in methane recovery by capturing landfill gas through existing or planned gathering systems. We then treat the captured gas with a proprietary technology that removes and destroys volatile organic compounds, heavy hydrocarbons, and hydrogen sulfide, while removing carbon dioxide to produce RNG that is indistinguishable from conventional natural gas.

Morrow Renewables employs over 180 people who have years of experience in energy and gas markets. We have 7 RNG projects across Texas, Louisiana and Arkansas, and have another project that is currently under construction near Houston, TX. We take great pride in the fact that we are using technology developed here in the United States to produce a high-quality fuel from waste, and in the process, are contributing to our nation's energy independence in an environmentally-friendly manner.

U.S. RNG Industry is Providing Increasing Volumes of Fuel to Meet the RFS Program's Cellulosic Biofuel Requirements:

The Energy Independence and Security Act of 2007 (EISA)(P.L. 110-140) requires the use of set volumes of renewable fuel, which is to increasingly include advanced biofuels, under the RFS program. The

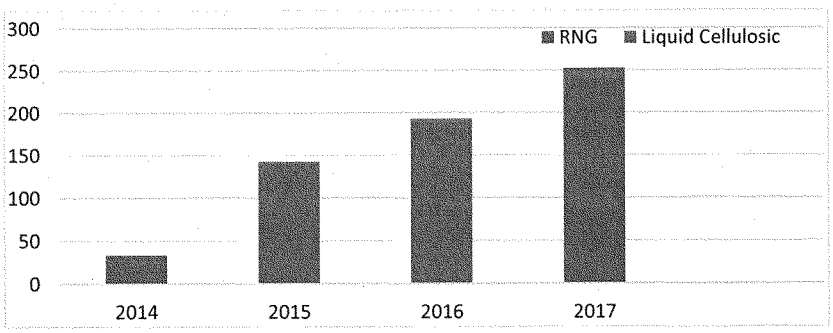
expansion of the RFS program under EISA was intended to, among other things, diversify the transportation fuel market beyond gasoline.

EISA sent the signal to the marketplace that the production of increasing volumes of advanced biofuels, including cellulosic biofuels, was a priority. RNG now represents in excess of 95% of the fuel used to meet the RFS program's cellulosic biofuel requirements.

Upon EPA's inclusion of RNG as a cellulosic biofuel under the RFS program, RNG production for transportation fuel grew from approximately 33 million ethanol-equivalent gallons in 2014 to over 240 million gallons in 2017. That is more than a 620% increase in three years. For 2018, EPA estimated that RNG production would increase by approximately 21% over 2017's levels. EPA data shows that the industry has grown 29% over the last 12 months. In other words, our industry is currently on track to exceed EPA's estimate of 274 million gallons of production for 2018.

RNG Production Under the RFS (D3)

EMTS Data (Million Ethanol Equivalent Gallons) (data as of May 10, 2018)



Cellulosic biofuels industry entrepreneurs, business owners, financiers, and marketers have invested over a billion dollars in response to Congress enacting the RFS program. We have worked diligently on gathering data and industry information to assist EPA in setting the cellulosic biofuel volumes under the program. The RNG industry has developed over 45 production facilities capable of producing high-btu gas that can be used for transportation applications since 2011, with an additional 48 projects under construction or consideration as of May 2018. On average, each RNG project creates 173 direct and indirect jobs and attracts between $10 million and $70 million in capital investment.

Our experience at Morrow Renewables reflects these overall industry trends. Since 2011, Morrow Renewables has developed 7 RNG projects across Texas, Louisiana and Arkansas. In fact, two days ago, on Wednesday June 20, 2018, I attended the ribbon cutting for our newest and biggest project in Melissa, TX. This project will produce at least 12 million ethanol-equivalent gallons of cellulosic biofuels annually.

As a result of the RFS, our company and the industry at large are converting waste into a domestically produced cellulosic biofuel that can be readily incorporated into our existing infrastructure and be utilized by medium and heavy duty natural gas vehicles. Further, this is being done in a way that reduces harmful emissions. This is a win-win scenario.

Policy Certainty is Vital to Advanced Biofuel Producers:

The RFS is promoting growth and efficiency in the RNG industry and as a result, increasing the domestic production and use of advanced biofuels. For this success to continue, certainty must be provided to the market. RNG projects require significant capital investment and the deployment of new infrastructure. They often involve 20-year offtake agreements with fuel marketers and end users. Thus,

stable and reliable policy at the federal level is essential if entrepreneurs are going to continue investing in these worthwhile projects and we are to continue reaping the energy, economic and environmental benefits associated with RNG projects.

To promote marketplace stability, EPA should administer the program in a stable and predictable manner. Despite some delays, EPA has now been on track in setting the RFS program's volume requirements since the 2016 compliance year. The continuation of the annual standard-setting process on a regular schedule will send positive signals to markets, investors and project developers.

Using consistent methodologies in projecting cellulosic biofuel volumes under the RFS program is another key aspect of administering the program in a stable, predictable manner. EPA changed the methodology used to set the RFS program's cellulosic biofuel volume requirements for 2018. For the sake of providing a reliable regulatory framework, the RNG industry is asking the EPA to use a consistent methodology for the upcoming 2019 RFS proposal. That methodology should recognize the investments that have been made and continue to be made by the RNG industry. Additionally, we continue to urge EPA's incorporation not merely of fuel production but also of fuel available due to other factors like excess volumes available due to obligated parties' cellulosic waiver credit purchases.

Widespread reports of potential administrative changes to the program have had the practical effect of injecting uncertainty in the marketplace. For example, rumors of caps on RIN prices, allowing exported fuel to generate RINs and other administrative changes to the program caused great volatility in the market, even for cellulosic biofuels. I can tell you first hand that the swirl of rumors and innuendo about these potential changes had a very real impact in the marketplace, and lingering questions surrounding the future of the RFS are limiting financing and contract commitments that would otherwise move forward. Congress and EPA should be mindful of this impact and take great care to ensure that

production and investment made by businesses based on existing statute and regulations are not stranded or undermined.

EPA's implementation of the small refinery exemption has also injected uncertainty in the market. The statute provided a temporary exemption from the annual RFS requirements for small refineries, defined as a refinery whose average aggregate daily crude oil throughput does not exceed 75,000 barrels per day. Like other biofuel stakeholders, the RNG industry is concerned by reports indicating that EPA is applying the small refinery exemption in a substantially broader manner than in previous years, and that this application of the small refinery exemption has had the practical impact of reducing the RFS program's renewable fuel volume targets.

RNG stakeholders have made business and investment decisions based on the RFS program's statutory and regulatory requirements, and reports that the small refinery exemption is being applied in a new and expanded way is undermining the marketplace fundamentals upon which these significant capital expenditures and investments were based. Further, stakeholders have noted that the lack of transparency associated with these exemptions and the basis for granting them is causing additional uncertainty and speculation in the marketplace and making it more difficult to bring otherwise viable RNG projects to fruition. We encourage the subcommittee to take the steps appropriate to provide marketplace certainty and ensure that the small refinery exemption is being applied in a manner that is consistent with the both the letter and intent of the law and in a way that does not undermine growth and investment in the production of cellulosic biofuels.

Conclusion:

Chairman Shimkus, Ranking Member Tonko and members of the subcommittee, I again thank you for

the opportunity to testify today. There are significant energy, economic and environmental benefits associated with the expanded domestic production and use of RNG. On behalf of both Morrow Renewables and the RNG Coalition, we look forward to working constructively with you going forward to ensure the RFS program achieves its worthwhile objectives.

Mr. SHIMKUS. May God bless America. Thank you very much.

Especially after this testimony here, we need a lot of blessing going on here.

So let me thank you for your testimony and move to the question-and-answer portion the hearing. I will recognize myself 5 minutes for the beginning.

So we are here because, really, the policy certainty question, right? So anyone know who is going to be elected President in 2022? Anyone know who will be the next Administrator of the EPA? The answer is no, right? Does anyone know when it is perceived that the RFS program will be turned over to the next Administrator? 2022, right?

So let me start with my question for McAdams, Howard, Puthusseril, Morrow, and Morgan. What are your main concerns with the RFS post-2022? And what, in your view, is the best way to address those concerns?

Mr. MCADAMS. So I would answer by doing a reform bill so that we have clarity, not only before 2022 but after 2022, instead of waiting for a reset. And the reason I say that is because so many of the current provisions in the statute and in the current regs are so ambiguous that EPA doesn't have the ability to make the calls they need to make. And I have seen two major companies build plants, one in China and one in Sweden, because we couldn't make the calls on how to apply the policy in the first place.

So I know I have disagreements with folks on this panel about that. But having represented those two companies who couldn't build a plant here because we couldn't make a decision on whether tall oil was a waste when it is 2 percent residue in a tree or whether a single-cell organism is an algae, but——

Mr. SHIMKUS. OK. I have got other people to go. We got your point.

Mr. Morgan.

Mr. MORGAN. I would say it is certainly a little bit of the uncertainty question post-2022. But the main point is that ultimately fuel should be standing on their own two feet and competing in a free and open marketplace where there is a willing seller and a willing buyer. Both people are better off after the transaction.

So we need to move toward a free market. And doing that now would actually be good, because it would give you more of an opportunity, more of a runway to figure out how to do that post-2022. So now is the time for reform.

Mr. SHIMKUS. Ms. Puthusseril.

Ms. PUTHUSSERIL. I run a truck stop, and so we look at things on a day-to-day basis. And so for my customers, what they are looking for is the most affordable fuel prices. They are looking for a fuel that they can get that is good. And we have seen the RFS, as it is intended to work, is working. Whenever I can offer low price fuel for the drivers——

Mr. SHIMKUS. Let me ask, you have you been briefed by the association of a concern on 2022?

Ms. PUTHUSSERIL. No.

Mr. SHIMKUS. OK. Let me move—I am running out of time, so let me go to Mr. Howard.

Mr. HOWARD. Thank you, Mr. Chairman.

Frankly, Mr. Chairman, I am not sure we see much difference post-2022 with the uncertainty that we have seen to date in the RFS and the implementation. Certainly we would like to see updates in transparency and consistent long-term growth that is clear for biodiesel and renewable diesel. Clearly, it has been a success story, but it has been in fits and starts, and we don't see much difference.

Mr. SHIMKUS. OK. Let me go to Mr. Morrow.

Mr. MORROW. Yes. Thank you, Mr. Chairman.

So we have only been as cellulosic biofuel RNG in the market for 3 years, and 2022 is right around the corner. So our entry is making massive investments. So we would just like to see some certainty going forward and to know what that is to make investments to continue to do what we do.

Mr. SHIMKUS. So does your industry feel that there is certainty right now?

Mr. MORROW. Not at all.

Mr. SHIMKUS. OK. And this is kind of outside. But one of the main drivers of us possibly moving forward is the octane debate. The basic debate is best fuel engineers and the best vehicle passenger engineers producing the best vehicles to meet CAFE and low carb and some of those other issues.

I would like to go through the panel, but quickly. I know that is not in your segue, but since that drives about 75 percent of this debate, what are your thoughts on that?

McAdams, you want to——

Mr. MCADAMS. Oh, I——

Mr. SHIMKUS. Quickly though. Quickly.

Mr. MCADAMS. OK. I am on the optimal task force with DOE, and they going through a range of different fuels. And you want to make sure that you leave enough flexibility that you can have a drop in fuel that is renewable. And it doesn't have to necessarily——

Mr. SHIMKUS. OK. Let me go to Mr. Morgan because he is really the person I want to ask this of.

Mr. MORGAN. Yes. We definitely see potential in a 95 octane specification in exchange for a sunset of the RFS that could potentially work better for everybody, including for consumers. A 95 RON level would be a nationwide fuel on day one. That is important to the automakers. The automakers tell us and testified before this committee that that is the optimal level that would allow them to engineer the vehicles. And if the RFS goes away, it will free up enough investment for us to be able to compete in a free and open market.

Mr. SHIMKUS. And I will end here. But I think, in observation of the other panels, you would probably be alone in the statement of sunsetting the entire RFS? Just instructional.

So, with that, I will turn to the ranking member, Mr. McNerney, for 5 minutes.

Mr. MCNERNEY. I thank the chairman.

Mr. O'Mara, how can Congress work to improve the RFS and ensure it includes other biofuels and biogasses?

Mr. O'MARA. Thank you, Mr. McNerney.

And I think, if you look at the legislation that Congressman Welch just put forth, the GREENER Fuels Act, looking at having more clear, kind of, definitions for the types of fuels that are allowed but then being a little technology agnostic. Like, we shouldn't be picking winners and losers from LG versus native grass versus, you know, different technologies. Set performance standards and let the market actually work. And I think, right now, we are overly prescriptive. And the process of having EPA allowing new next-generation fuels into the process has been absolutely abysmal.

And so, again, I mean, I do think there are models in California and other places that have set standards, and then let American innovation work.

Mr. MCNERNEY. I have heard a couple of panelists refer to Mr. Welch's legislation.

Is there anyone that is familiar with it that would oppose that legislation?

Mr. COLEMAN. Yes. We oppose Mr. Welch's legislation. So there is a number of things in that bill that, quite frankly, are mind blowing, from my perspective. There is a whole bunch of asks from the American Petroleum Institute: a cap of ethanol use, a total exclusion for corn fiber, cellulosic ethanol, sunsetting where it shouldn't exist.

We have a number of problems with that bill, and we would ask for opposition.

Mr. MCNERNEY. Thank you.

Anyone else?

Mr. McAdams, does your industry find the playing field for biofuels, gas, and diesel to be level?

Mr. MCADAMS. No, sir, because they are at different economic places at the current time. And that is part of the problem with the program when you have had 40 years and $20 billion, as the incumbent corn industry has, and you are trying to compete ethanol to ethanol, they are not on a level playing field.

So you have to buoy up if you are going to have the advanced fuels compete with the incumbent fuels on both an octane basis and just on an entry to the market basis. And, frankly, the teeth in the RFS didn't do that for cellulosic.

Mr. MCNERNEY. Does anyone on the panel feel that the EPA's waiver for small refineries that is actually given to large refineries is a good idea? Does anyone think that is a good idea?

Mr. MORGAN. I will just say we don't take positions on any individual refinery waivers because it deals with confidential business information and all that. But we oppose the idea of doing a retroactive reallocation. We are not sure how they could do that legally and logistically under the statute. And it points to the need, really, for a comprehensive solution. That is why we are here. I would just say to my fellow panelists, if they are frustrated with how the RFS is run, welcome to the club. And if you think it is bad now, wait for 2022 when there is even more uncertainty. So all of this to me points right back to the need for a comprehensive solution.

Mr. MCNERNEY. Mr. O'Mara, who do you think that that policy benefits, the policy that the Administrator is pushing forward?

Mr. O'MARA. Yes. I think there are places where the uncertainty and the RIN cost and things like that have adversely impacted some manufacturers and some refiners. I do think that reduces some pressure on kind of habitat impacts, especially as prices get up higher and higher.

But I think the challenge of this debate continues to be projected as just corn versus oil. And there are a whole series of constituencies that are badly influenced by the status quo. And I think the problem is that we keep trying to have these little quick fix kind of get through the press cycle and do something from either the administration where we need to have a bigger conversation because it is just more complicated than any individual action that the Administrator has taken.

Mr. MCNERNEY. Well, I certainly agree with the chairman on this. It is a good diverse panel, and so we get some different viewpoints on that.

Mr. MCADAMS. Mr. McNerney, I just want to make the committee aware that I have actually sued the Environmental Protection Agency over the way they are issuing the small refinery waivers. And what they have done is they have purposely driven down the price the D6 RIN. And that is a direct benefit to the merchant refiners.

Then what they did was they went from an average of 7 to 10 to 30. And some of my largest distributors of diesel have lost millions and millions of dollars as a result because they were sitting there holding a hundred million RINs. So our guys have received economic harm and that some of the people they gave them to didn't pass the economic harm test.

Mr. MCNERNEY. Thank you.

Mr. COLEMAN. One additional point. When it all comes down to it, what those waivers do is they transfer wealth from rural America into the pockets of refinery owners. That is what they do in the short-term. And rural America is hurting and refineries are not.

Mr. MCNERNEY. I just want to end by saying, Mr. Morrow, I was pretty excited hearing your testimony. Let's see how we can continue that success story.

Mr. MORROW. Thank you, sir.

Mr. MCNERNEY. Mr. Chairman, I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

The chair recognizes my friend and colleague from Texas who has been laboring with me on this issue, Mr. Flores, for 5 minutes.

Mr. FLORES. Thank you, Mr. Chairman. I apologize to the audience for being late today. My mother experienced a significant medical condition earlier this week, so I had to deal with some of those things this morning.

Mr. Morgan, your organization has been supportive of the high octane concept. What, if any, changes need to be made to the advanced biofuels provisions in the RFS in order for a high octane program to move forward?

Mr. MORGAN. Thanks for the question.

Yes, I think the key thing is there that we need to be moving toward a free market. We are open to all ideas about how to do that in the advanced space. We feel like the octane idea has the potential to do that in the conventional ethanol space.

We don't have a specific solution, to be honest, on the advanced space, but we are open to ideas and looking for an off-ramp toward all the fuels competing on an equal basis.

Mr. FLORES. OK. Would your constituents accept a sunset date for advanced biofuels that is later than a sunset date for the remainder of RFS?

Mr. MORGAN. We feel so strongly that the program needs to be sunset over time that we are open to all ideas. The timetable needs to be reasonable of course. But we are open to hearing what the colleagues on this table and others need to have the certainty that they need and the timeframe that they need. We will take a look at that, take it back to our membership, and we are open to ideas.

Mr. FLORES. OK.

Mr. McAdams, do you envision a sunset date for RFS that includes advanced biofuels? And if so, what would that sunset look like?

Mr. MCADAMS. Well, I think you have to base it on how you would get your financing. And so 20 years is what most people have in terms of the debt that they take when they have a loan. And if you gave the plants, when the plants came on, like you do in the Tax Code, you flip the switch on and you get 20 years of a RIN, then people are going to have the confidence to finance those plants.

Twenty is not the only answer you could have, but I think you have got to have some longevity where they can repay the loan just like you have a 30-year loan on your house because it is easier to pay for.

So that is the game that has to be worked on in terms of how long you would go forward in order allow these plants to be financed and built.

Mr. FLORES. OK. Thanks for the answer. Just to clarify, you are saying most of the capital investments have about a 20-year financing——

Mr. MCADAMS. Yes. When you look at the electric side, you usually see a 20-year agreement between the purchaser of the power and a purchase power agreement, right? That is generally what the electric industry does, so I just borrowed that from the electric——

Mr. FLORES. Oh, OK, I see what you are saying.

Mr. MORGAN. And I would just point out that would be 17 plus 20, which is 37 years, is a long time to wait.

Mr. MCADAMS. Well, you wouldn't have to do it that way. You could do it in some other constructions is what I am saying. You have to work that out. Because you guys had to have 30 years to pay for the $6 billion refineries. It is the same issue.

Mr. FLORES. OK. Well, this is helpful.

Mr. Morgan, there are recent reports that the EPA is considering reallocating waived volumes from exempted small refineries in the 2019 RVO. What is your perspective on these reports?

Mr. MORGAN. I would just say that——

Mr. FLORES. Just to be clear there, reallocating from small refineries to everybody else.

Mr. MORGAN. Yes. We have very grave concerns about that, particularly trying to retroactively put in waived volumes into a new

rule. I am not sure how they could do that. We have very strong concerns for that legally.

Also, I think, to my point just a minute ago, I think this points out why we need to have a comprehensive solution, clarity in the statute, rather than relying on administrative action. And in 2022, the statutory guidelines fall off and there is more administrative discretion.

So for those of us who are concerned about how the program is being operated now, it is much more so in the future, which is why we all need to figure out a path forward.

Mr. FLORES. OK. Mr. McAdams, am I interpreting correctly that that is one of the catalysts for your litigation?

Mr. MCADAMS. Yes, sir. Absolutely. I mean, who is going to finance a $200 million plant in 5 years?

Mr. FLORES. OK. I thank the panel. It has been great.

And, Mr. Chairman, I yield back the balance of my time.

Mr. SHIMKUS. Wow, the gentleman yields back his time.

The chair recognizes, I think, the gentleman from Texas—maybe not—for 5 minutes.

Mr. GREEN. The chair and I have some little competition.

I want to thank all of the panel for being here today.

One of the frustrations—and I think the chair and I were on the committee when this system we have now was created from a number of energy legislation over the last decade or so—the frustrating thing I have is that, not only coming from an oil and gas community, but biofuels hasn't taken on, and what is picked up is the corn ethanol.

And I know from the environmental perspective, biofuels really have a plus for the environment, whereas corn ethanol doesn't, and that is the frustration.

So, Mr. Morgan, has the RFS had help to commercialize and develop cellulosic biofuels and advanced biofuels other than biodiesel?

Mr. MORGAN. Not really. I think you have heard the numbers today, that it is overwhelming, that biodiesel has been in the advanced pool with only 10 million gallons of liquid cellulosic fuels at this point, setting aside the biogas, the compressed natural gas.

Mr. GREEN. Have we seen domestic production rise dramatically? Has the mandate kept pace with the domestic production capabilities?

Mr. MORGAN. No, it has not.

Mr. GREEN. And how do existing mandates prioritize imports over domestic production?

Mr. MORGAN. Yes, I think you see that in a couple of different ways. So if the mandate is placed higher than demonstrated domestic production, then you are either going to have some increased domestic production, which we have seen a little bit of that, but you also have a lot of increased foreign imports. And that is kind of against the whole purpose of the Energy Independence and Security Act.

Mr. GREEN. And I agree that one of the concerns is that we should be producing it. If you don't like bringing in foreign oil, you surely wouldn't want to bring in biofuels.

Mr. MORGAN. Yes, that is right, and especially because we produce the diesel here in the United States, our members. So we

are actually, in terms of refined products, we are a net exporter, the largest net exporter in the world of refined products.

So when you bring in the biofuels from overseas, you are actually displacing American fuels. Again, some of that is derived from foreign crude oil, but it is domestically produced.

Mr. GREEN. Speaking for AFPM, what effect has Mr. Pruitt's RFS waivers had on the industry? Are some of the refineries concerned that they will be left holding the short end of the stick when the burden of compliance only applies to remaining refiners who do not receive those waivers?

Mr. MORGAN. I would say it certainly splits our members. It is between those who have received waivers and those who have not.

And as to how they are reallocated, we have very strong concerns about that. That would actually hurt everyone, including, for example, like PES, for example. It would be reallocated to them when they are in financial distress at the moment. That is just one example.

Mr. GREEN. And the chair and I have been wrestling with RFS for a number of years. And a lot of it is just—the RIN system is just broken and somewhere along the way Congress needs to fix it. And I think everybody at the table ought to be there to help, because I like domestic production, but I also see that a lot of folks making money out of the energy sector, it is not putting one drop of gas in our vehicles.

Mr. Chairman, that is all the questions. I yield back.

Can I save it for next week?

Mr. SHIMKUS. I think you already owe us numerous minutes.

Mr. FLORES. Will the gentleman yield the balance of his?

Mr. SHIMKUS. Mr. Flores would like to——

Mr. FLORES. Thank you.

Mr. Green brought up an issue that I think is important to consider. Do any of you think the EPA can fix this on its own administratively or do you think that it is going to require a statutory initiative? As quickly as you can.

Mr. MORROW. That sounds like a loaded question.

Mr. FLORES. It is not intended to be a trick question.

Mr. MORROW. I think, from our industry's standpoint, as we are new in the RFS, I think maybe any type of legislative post-2022 would be good for us in knowing that there would be some certainty and potentially something that would transcend the next election. So that would probably be helpful for us.

Mr. FLORES. Mr. O'Mara?

Mr. O'MARA. Yes. I think if there was absolute certainty and multiple year out and actually saying the volumes are going to be consistent and not having all these the workarounds, I think there are some abuses that could be a avoided.

I also think if the Triennial report on the environmental impacts, which is now 7 years overdue, because there are things that they can do to reduce filings based on impacts and that work isn't being done. But the only way to make sure it is right, to the chairman's point, long term, regardless of administration, regardless of administrators, have Congress take action.

Mr. COLEMAN. EPA has the administrative authority to fix everything that I have heard mentioned. And so I think if there is disagreement, it is how to get those things fixed.

Mr. HOWARD. Yes, I would agree. I think a long-term consistent plan is easily implemented if the guidelines are there.

Mr. FLORES. Do you agree with the statutory approach or the administrative approach?

Mr. HOWARD. I think there needs to be changes and updates to the RFS. I think it can be fixed to give more clarity, to give more transparency. A lot of the issues I have heard articulated here are due to the lack of transparency in the policy.

Mr. FLORES. I need to move on. I am running short on time. Sorry.

Mr. MCADAMS. We did this program 10 years ago and a lot has changed in the industry on the innovative technology side and the original statute didn't take that into consideration.

So a lot of projects now are multifaced projects with two elements to them instead of one. The statute was written for one element, not two. There are all kinds of problems with respect to how they put the programs together. For the use of wood, they just box these facilities.

Mr. FLORES. Just to summarize, you are saying statutory, right?

Mr. MCADAMS. It needs to be reformed.

Mr. FLORES. OK.

Mr. Morgan.

Mr. MCADAMS. And I have given you a list of 21 things that directly need to be statutorily reformed.

Mr. FLORES. OK.

Mr. MORGAN. We believe the statutory reform is the best path going forward.

Ms. PUTHUSSERIL. I agree with that.

Mr. FLORES. OK. Thank you. I yield back my negative time.

Mr. SHIMKUS. The gentleman from Texas yields back his time.

The chair now recognizes the gentleman from South Carolina, Mr. Duncan, for 5 minutes.

Mr. DUNCAN. Way over here on the far right.

Thank you, Mr. Chairman.

Thanks to the panel for being here.

I want to examine the future of advanced biofuels under the RFS. We need to set demands and mandates that the market can actually meet. I think Mr. Morgan addressed in his testimony that nearly a third of all the RFS advanced biofuel mandates were met in the last 2 years with imported fuels. So it seems to me that the demands and mandates are exceeding what the market here in America can provide.

It seems counterproductive, especially since RFS was set to mitigate the dependence on foreign sources. We have, in fact, decreased dependence on foreign oil, but I am not so sure that much of that can be attributed to RFS standards. Most of it is due to aggressive exploration and production here at home of fossil fuels. And so just because the government set up biofuels demand doesn't mean we are able to domestically meet it.

So, Mr. Morgan, your testimony directs EPA to set a reasonable advanced biofuel mandate tied to domestic production. In your opinion, what is a reasonable advanced biofuel mandate?

Mr. MORGAN. Yes, I think you would look at the previous year's production domestically here and set it at it that level so you have a track record there. And then as it grows, then you can increase the number the next year.

But you are exactly right, that if a third of this is being met by foreign imports—and again, as I just mentioned, some of that is displacing American-produced fuel, or it all is—some of which is derived from feedstocks from overseas certainly, but it is all American-derived fuel, it is kind of at counterpurposes.

Mr. DUNCAN. Mr. Howard, do you want to comment on that?

Mr. MCADAMS. Isn't a third of the fuel you use in the U.S. refineries from overseas?

Mr. MORGAN. In terms of feedstock, now our percentage of imports is the lowest it has been since 1967.

Mr. MCADAMS. But it is still a third.

Mr. SHIMKUS. OK. I love this banter. This is a throwback to Billy Tauzin. We will let Mr. Duncan control his time.

Mr. HOWARD. Yes, Mr. Duncan, I think you——

Mr. DUNCAN. Let's go to Mr. Howard.

Mr. HOWARD. Yes. So let me say, Mr. Morgan, some of these numbers are very misleading. As of through last year, through August of last year, 600 million gallons of Argentine biodiesel were dumped into this market and that preceded the prior 3 years. Countervailing duties were put in place last August that restricted that volume.

The biodiesel industry has stepped up. We were running at two-thirds capacity because of that. Now that those countervailing duties are in place and we have fair trade, the biodiesel industry is meeting the RVO requirements. And we have continued growth and plans to continue to meet that from domestic production.

Mr. DUNCAN. Let me just ask you this. Because, look, I drive a Chevy Duramax diesel pickup truck. That is my truck when I am at home in the district. I like biodiesel. I think the viscosity actually helps my engine probably more than anything. So I am not a novice on this.

But I will say this, that biodiesel is much more expensive than regular diesel fuel. So how can we overcome that? Because if I as a consumer—and trust me, I am—if I can find biodiesel in South Carolina now, I think there is one distributor that has got it.

So if I want to buy biodiesel and I find a station that has it, why am I paying 30, 40 cents more a gallon for biodiesel? Because I can tell you, even though I want to do that, because think it will help my engine, and I like the whole idea of biodiesel, I am not going to buy it, I am not, not with 30 or 40 percent price difference.

So until you can overcome that, you are not going to have the consumer buying your product. So how do you overcome that?

Mr. HOWARD. Well, I think you have heard from one of my customers sitting next to me that she is able to lower her price by blending biodiesel.

Part of the industry's need for continued growth is to be able to have the distribution network to get to everywhere in the country.

Right now we have great distribution in the Chicago area, where her truck stop is. We do not have great distribution in your area.

We need to continue to invest in infrastructure. Last year REG, we opened 10 new distribution terminals.

Mr. DUNCAN. What is the price point difference in the areas where you have great distribution?

Mr. HOWARD. Right now, typically biodiesel with incentives is sold less than diesel price and passed on to the consumer.

Mr. MCADAMS. Congressman, I represent Pilot Flying J and Love's, which are the two largest distributors of diesel in the United States, 15 billion out of 50, and they generally pay 25 percent less for the diesel and blend it because they get margin. And when the marginality isn't there, they don't blend.

And because of the small refinery waivers, the RIN collapsed on the floor pool and now we are 15 percent lower blending. So all the truckers supported us on the tax credit because we provided cheaper fuel over the long haul in the entire United States.

Mr. DUNCAN. Let me just say this in the 5 seconds that I am actually over.

Mr. SHIMKUS. Ms. Matsui.

Mr. DUNCAN. The market will dictate what is purchased. And if we as an American government want to see more of these products on the market, they need to be cost competitive, cost effective, right? They need to be almost equal to or less than the competitive fossil fuel brand.

With that, I will yield back.

Mr. SHIMKUS. The gentleman yields back.

At this time the chair recognizes the gentlelady from California, Ms. Matsui, for 5 minutes.

Ms. MATSUI. Thank you, Mr. Chairman. I do appreciate the testimony we have heard today.

Advanced biofuels can have a substantially lower climate impact than traditional gasoline and even corn ethanol. The California Air Resources Board last year reported that about one-third of all biofuels in the state's fuel mix were categorized as advanced. That is a significantly higher percent than the rest of the country as a whole.

The key to California's success has been the State's biofuels program, known as the Low Carbon Fuel Standard, which sets goals based on the carbon content of the fuel rather than the feedstock. Under the program the state measures the carbon intensity of the fuel over its full lifecycle. Low carbon intensity fuels generate credits that can be traded.

This performance-based standard clearly has greater climate benefits, but it seems to me that its flexibility is also better for the advanced biofuels industry.

Mr. McAdams and Mr. Coleman, would you say it is more beneficial to have standards that are performance-based, like the Low Carbon Fuel Standard, or technology-based, like the RFS? What are the benefits of each?

Mr. MCADAMS. Go ahead.

Mr. COLEMAN. Thank you, Congresswoman Matsui, for the question.

So I worked on that program for a while out there. And you are right to point out that not just advanced biofuels have carbon benefits. So we are playing this game right now where we draw a line between advancing corn ethanol even though corn ethanol is the largest investment in cellulosic ethanol. So you have gains with corn ethanol and then you have bigger gains with advanced biofuels.

In terms of the answer to your question, we like both policies. The RFS is prescriptive. It is very clear for investors when it is properly implemented. And the Low Carbon Fuel Standard has more flexibility.

If there was an opportunity to talk about performance standards, we are more than willing to have that conversation. Right now those policies are perfect complements to each other.

And if you go to California and talk to the California Air Resources Board, they will tell you the RFS drives gallons towards California and makes compliance with that program helpful and possible. So it is a tremendously important. We would be happy to have further conversation with you.

Ms. MATSUI. Well, another difference between the two standards is that California standards are structured to incentivize the lowest-carbon fuels possible. So under the RFS, once the fuel has achieved the requisite 50 or 60 percent greenhouse gas reduction, it is eligible to compete in the market, but there is no benefit for fuels that go beyond the standard.

So on the other hand, the California standard rewards lower carbon-intensity fuels by allowing them to generate more credits than fuels that barely meet the standard. This creates an incentive to develop fuels that can reduce carbon emissions to the greatest extent possible.

Once again, Mr. McAdams or Mr. Coleman, what do you think about the different market signals created by the two standards? Are there benefits to using a sliding scale of rewards based on carbon intensity?

Mr. MCADAMS. So I think it is a great program they have. I think the political situation in the Congress makes it hard to take the California standard and put it into Federal law, to be candid with you.

But I think you could address the same impact by simply saying any fuel that delivers more than the baseline of 50 percent or 60 percent of the statute will receive an extra one-tenth of a RIN would give an incentive.

So, for instance, if my colleague down here with the Biodiesel Board uses a tallow, he gets an 80 percent reduction fuel, he would get three-tenths of a RIN.

Well, three-tenths of a RIN on a 40 cent RIN value is quite a bit of incentive for the margin for him and that would help bring the fuels into the market in the same way that California's standard does, but using the existing format of the RFS.

Ms. MATSUI. OK. In 2014 the EPA finalized regulations permitting biogas to count as cellulosic biofuel under the RFS when converted to electricity to power electric vehicles or used directly in natural gas vehicles.

Applications to generate RINs using electricity from biogas to fuel EVs are currently pending before the EPA, but the Agency has yet to approve an application.

The potential impact of the electric pathway under the RFS is great for both biogas producers and EV manufacturers. DOE estimates that a proved electric RIN pathway could reduce the cost of electric vehicles and potentially put an additional 3.5 million battery electric vehicles on the road by 2025. The demand for biogas would also rise dramatically.

Let me ask probably Mr. Morrow first. Are you familiar with electric RINs and what type of benefits do they have and the potential to provide for the environment and biofuels industry?

Mr. MORROW. Thank you for the question.

The electric pathway there, it is just like anything, I think the devil is in the details. We are not really sure how many RINs would be generated on a per MMBTU or per kilowatt basis, so it is hard for me to comment on what that might look like if it becomes a proved pathway. So really all we know right now at this time is what an MMBTU of treated RNG going to the pipeline looks like. I am familiar with the pathway.

Ms. MATSUI. OK. Well, it seems I am going to run out of time. I think this is an area we ought to explore further.

Thank you very much. I yield back.

Mr. SHIMKUS. The gentlelady yields back her time. Shows you that there is interesting opportunities in future, good or bad, for those at the panel.

So we want to now turn to another Californian, Mr. Peters, and you are recognized for 5 minutes.

Mr. PETERS. Thank you, Mr. Chairman.

And I apologize, I was on floor so I didn't get to hear some of the testimony from the beginning. So if you answered it I hope you will bear with me.

I also want to wish the best to my colleague Mr. Flores' mother, hope she is all right.

I wanted to ask Mr. O'Mara, in general, given the timeframe and what has happened since this was first adopted, how does the dramatic price collapse in natural gas affect all the incentives? And is that part of your thinking as you suggest we take another look at how to incentivize next-generation biofuels?

Mr. O'MARA. Yes. I appreciate the question.

We feel strongly that we should be looking at actual reductions, right, where are the performance based, where do we actually achieve the greatest kind of environmental outcome, and don't pick winners and losers on the technology side. Because I do think that there was a price—like, any time a fuel has a dramatic decrease in the price, it does drive greater competition and forces other people to try to meet that price in the marketplace. And so we have seen it in the electrical sector and we are seeing it a little bit here.

And I just think the less Congress is being prescriptive on technology and the more they are focused on outcomes and performance, the better off for everybody, particularly better off for the environment.

And David De Janeiro from my team is over here who has been working with your staff and others on this. There are a lot of these

kind of safeguards you can put in place and also performance standards. And I would encourage folks to look at Congressman Welch's bill, the GREENER Fuels Act, because it actually gets in that direction.

Mr. PETERS. In terms of technological, in terms of performance standards, how would you define those?

Mr. O'MARA. So there are the examples that Congresswoman Matsui talked around actual performance. Let's talk about emission reductions based on some kind of full lifecycle analysis that we can all agree upon.

I do think that there are lessons that could be learned there fairly easily. I think the easiest one is the carbon content, because it is one that has—there is more standardization of the methodology and it is a way to basically compare apples to apples across the entire fuel portfolio.

Mr. PETERS. Mr. McAdams, did you have a comment on that kind of approach? Is that what you were talking to Ms. Matsui about?

Mr. MCADAMS. I was just saying you could solve a lot of these problems in different ways. So if you wanted to reward from a behavioral standpoint, just like the Tax Code that sometimes scales things at percentage bases, you could amend the RIN, give away portions. They are done on energy density now and you could change that section of the law.

Mr. PETERS. And that is another way of tracking the subsidy with the need for the subsidy I suppose, right?

Mr. MCADAMS. And so that gives guys more headroom, right, to sell their fuel against incumbent fuels that are going to be cheaper. So it lets them play in the market.

Mr. PETERS. I would just say it strikes me—and I haven't really looked that deeply at the Welch bill yet, it strikes me there must be a difference today in the market from what would happen when this was enacted. And it seems to me that I am skeptical that staying with this program has got to be the best we can do.

But I am going to take you at your word, Mr. Coleman, and sometimes the best is not to do anything. But it does strike me that given the dramatic change in the whole price structure in the energy market and the fact that we have 100 years of energy here domestically now, the way you incentivize alternatives must have been affected by that.

Mr. Howard, did you want to say something?

Mr. HOWARD. Yes. Thank you, Mr. Peters.

Let me just make sure that it is clear that the industry has transformed, REG specifically. Ten years ago we made 50 million gallons; last year over 500 million gallons.

The foundation of our business is a waste collection business, used cooking oil, agricultural byproducts. And so when you think about how we have transformed, 80 percent of our feedstock now is a waste fat and oil, not a refined vegetable oil.

So, yes, the market has changed, and we have responded to the California incentives that the Congresswoman mentioned. So, yes, there is a transformation of our industry much more towards that foundation of waste-based conversion. In that, you also get the tremendous environmental benefits.

So however you think about this program going forward and giving us a long-term kind of consistent pathway, you need to make sure that both those functions are valued, the environmental benefits as well as this kind of waste-based environmental collection process. And that is never mentioned as something that is really foundational to our business and must be valued.

Mr. PETERS. Yes. That is a very fair point. And I think it is useful going forward.

I would just observe in closing that it is very clear to me that the states as laboratories is very constructive in terms of giving each state a little bit of leeway to do that. And I would forward that message on to Administrator Pruitt who seems to not want California to be able to do these kinds of experiments. I think it is very useful.

I yield back.

Mr. SHIMKUS. The gentleman yields back his time.

And I, again, appreciate the panel. You all are great. And I think it illustrates the challenge that we have.

I would just note for my colleagues one of the concerns I deal with is we have incentivized based upon current law and so we have to be careful about taking away from folks that we have already got into the market and the investments that have been made. And not just current production levels, but as I tell people stay, still in the ground and things moving based upon the law as written.

So it is a very challenging exercise, as we continue to find out.

Seeing that there are no other members wishing to ask questions for this panel, I would like to thank you all for being here.

Before we conclude, I would like to ask unanimous consent to submit the following document for the record: a letter from Representative Bruce Poliquin, which has a question for the record. The Democrat majority has agreed with that.

[The information appears at the conclusion of the hearing.]

Mr. SHIMKUS. And pursuant to committee rules, I remind members that they have 10 business days to submit additional questions for the record. And I ask that witnesses submit their response within 10 business days upon receipt of the question.

Without objection, the subcommittee is adjourned.

[Whereupon, at 10:44 a.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

PREPARED STATEMENT OF HON. GREG WALDEN

Thank you, Mr. Chairman, for recognizing me for this opening statement.

As you mentioned in your remarks, today's hearing is the first time in this subcommittee's hearing series on the future of fuels and vehicles where we have directly tackled advanced biofuels. Before I get to more general remarks on that subject, I want to observe how today's subject highlights a problem facing my constituents and a solution that could help the nation in several ways. Mr. Chairman, I know you are very proud of the corn and soybean growers in Illinois that you represent. In Oregon, we're equally proud of the generations of foresters and millworkers who have been helping manage our forests since the days of the Oregon Trail.

As we learned in our hearing last October on air quality impacts from wildfires, federal forests in Oregon and across the West face the threat of catastrophic wildfires pumping harmful particulates and carbon into the atmosphere. Our witnesses that day made clear the importance of thinning our forests and removing the

fuel that's out there. A key component of this preventative management is addressing chips and slash material that are volatile in a fire and help carry the fire up into the tree canopy. With limited economic value for this wood product, much of it is burned in piles in the winter. While this is much better than a wildfire, an even better alternative is to utilize this wood as a carbon neutral energy source to power our vehicles.

We used to think the main barrier to garnering sustainable and economic wood-based biofuels was technical in nature—such as developing ways to economically remove lignin from forest materials. That in turn would allow us to access and utilize the valuable cellulosic material for productive, value-added purposes.

However, it turns out that beyond the technical barriers, another significant barrier to growing the use of sustainable wood-based biofuels is the arbitrary limits established within the Renewable Fuel Standard (RFS). Specifically, the RFS renders biofuels sourced from woody biomass off federal land ineligible for RIN credits. As a result of these RFS limits, we are missing another opportunity to clean up and improve the management of our federal lands. Going forward, I hope we can address this matter.

As for the broader topic of advanced biofuels, the 2007 amendments to the Renewable Fuel Standard were passed with the expectation of a fully mature advanced biofuels marketplace—one that, four years from now, was supposed to be 28 percent larger than that of corn-based ethanol and other first-generation biofuels. While some people think it was a mistake then to include cellulosic biofuels in the RFS, the fact is they are not going away and should be part of any discussion on this complex and interdependent program. For this reason, it is important that when discussing the RFS program we keep these fuels in mind.

I want to thank our witnesses for joining us to share their experiences and expertise on this subject. We appreciate them taking time out of their busy schedules to help us better understand intricacies of advanced biofuels.

Thank you, again, Mr. Chairman for the time. With that, I yield back.

BRUCE POLIQUIN
2ND DISTRICT, MAINE

COMMITTEE ON
FINANCIAL SERVICES

426 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-6306

Congress of the United States
House of Representatives
Washington, DC 20515–1902

June 19, 2018

Dear Chairman Shimkus,

Thank you for holding a hearing on Advanced Biofuels under the Renewable Fuel Standard (RFS) on Friday, June 22nd, 2018. The Maine forest products industry is extremely interested in this program and the potential for bio based ethanol to revive the rural Maine economy, which has been hit hard by several mill closures the past couple decades.

If a representative from the Environmental Protection Agency (EPA) is a witness at the hearing, I respectfully request the following question be submitted for the record:

1. Mr./Mrs. (EPA employee): There are many agriculture-based fuels out there other than corn ethanol. Some of them, like biomass power, have even been approved to produce RINs under the Renewable Fuel Standard - but the agency has yet to process any of these applications.
    a. When can we expect to see biomass power qualified to produce RINs so that states like Maine that have little corn production can also participate in the RFS?

Thank you for your consideration of this request and please let me know if there is anything I can do to help with this process.

Sincerely,

Bruce Poliquin
Maine 2nd District Congressman

PRINTED ON RECYCLED PAPER

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FIFTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–6115
Majority (202) 225–2927
Minority (202) 225–3641

August 21, 2018

Mr. Mike McAdams
President
Advanced Biofuels Association
800 17th Street, N.W.
Washington, DC 20006

Dear Mr. McAdams:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

Advanced Biofuels Association

September 4, 2018

The Honorable John Shimkus
Chairman
House Energy & Commerce Subcommittee on Environment
2125 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Paul Tonko
Ranking Member
House Energy & Commerce Subcommittee on Environment
2125 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Shimkus and Ranking Member Tonko:

Thank you for the opportunity to testify before the Subcommittee on June 22, 2018 at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects." Please find enclosed my responses to the questions for the record that you requested on August 21, 2018.

Please do not hesitate to reach out with any additional questions or if I can be of further service to the Subcommittee in the future.

Sincerely,

[redacted]

Michael McAdams
President, Advanced Biofuels Association

1. What are the main regulatory barriers that are preventing the growth of advanced biofuels in America?

There are several key regulatory barriers preventing advanced biofuels from realizing market commercialization.

First, there must be consistency in how EPA implements the mandates from year to year, and the mandates themselves must reflect the actual number of gallons produced and used in the United States. While prospective standards are already challenging to implement, the EPA's recent actions to approve an unprecedented 48 small refinery exemptions (SREs) have adversely impacted the market in a number of significant ways. These exemptions are evaluated and granted without any transparency, which alone creates significant uncertainty about the direction of the RFS program for advanced biofuel producers. Further, reducing the obligations sends a negative signal to the markets, showing that EPA intentionally undermined the law by granting compliance exemptions which in total reduced the mandated RVO by approximately 10%. How can investors, technology companies, producers, and even obligated parties be expected to commit to deploying and commercializing advanced biofuels under such uncertain circumstances?

Second, EPA must continue to approve new advanced biofuel pathways for emerging technologies and feedstocks. Since the program's inception, approval delays have been a significant impediment to commercialization. At one point, the average wait time for a pathway approval was 2.9 years, more than enough time for companies to whither on the vine while waiting for regulatory action. Many such companies abandoned their efforts in the biofuels market and moved into other sectors. Under Administrator Pruitt, EPA's pathway approval process ground to a screeching halt. EPA must continue to move forward with these pathways to ensure new, innovative fuels can come to market.

Finally, and of utmost importance, EPA must simplify some of the regulatory compliance requirements that drive the cost of advanced renewable fuels up beyond fuels produced by the incumbent industries. For example, unnecessary restrictions on the use of proven and viable intermediate feedstocks continue to block promising opportunities for innovative advanced biofuels. This can and must be addressed Administratively – and done so quickly. The Agency actually proposed almost two years ago to take action on these issues in the Renewable Enhancement and Growth Support (REGS) Rule, but EPA has failed to finalize these necessary actions.

2. Is there a potential future scenario where advanced biofuels could successfully compete and participate in the market without the Renewable Fuels Standard?

At this point in the industry's development, policy tools are necessary to assist with developing, financing and commercializing advanced biofuels.

There is no question that the RFS helped develop and deploy the first generation of renewable fuels virtually overnight and has spurred significant advancement and interest in advanced biofuels. With ethanol now at over 10% of gasoline supply and use and biodiesel and renewable

diesel approaching three billion gallons out of a fifty-billion-gallon market, we have seen massive growth – albeit of an already-proven and -supported renewable sector.

However, EPA's approach to implementation and further uncertainty associated with the Agency's recent decisions has significantly stymied the advanced industry. The challenges for the advanced and cellulosic fuels are two-fold. First, EPA failed to consistently issue the annual RVOs on-time; second, EPA issues cellulosic waiver credits for RFS compliance in lieu of buying the actual gallons of fuel, has critically impacted the cellulosic sector.

Furthermore, concerns are mounting in the industry about the upcoming "reset" rule, which could increase uncertainty for the program's future. An already limited number of financiers may be more reluctant to commit amidst this uncertainty. Because RIN value is a significant driver, particularly in the advanced fuels sector, the prospect of a "reset" brings into question support of the RIN for producers of emerging fuels.

Even if tax credits were applied, like the current extenders for biofuels, it may not provide the necessary support for successful deployment unless that credit is significant and long-term. However, as demonstrated thus far, the on-again, off-again history of these tax credits have created no certainty for the financial community, as investors will not include the credits in their return models for financing decisions. It may be possible for some combination of policies to be structured to specifically focus on the deployment of the advanced fuels of the future. Some have also argued that a carbon tax would provide a more certain and comprehensive approach, affording the economic lift to help underwrite more sustainable industries including advanced biofuels.

3. Why haven't we seen greater production of cellulosic fuels that utilize woody biomass?

Woody biomass and wood residues offer one of the most significant opportunities for the advanced biofuels industry. RFS-compliant woody biomass is plentiful, and would enable us to diversify both the geographic footprint for feedstock utilization and the variety and tonnage of feedstock available for production and commercialization of advanced biofuels in the United States.

The conversion of woody feedstocks into approved fuels, including renewable diesel, gasoline, and jet fuel is not only viable but also can be largely accommodated throughout existing infrastructure. Today, wood products can be used to create a renewable crude oil and then converted into a range of fuels in existing refineries – just as if produced from petroleum-based crude oil. The production of these drop-in fuels could be generating RINs today if EPA were to finalize the REGS Rule's biointermediate section, drop the proposed carbon-14 dating requirements for wood, and apply logical definitions of wood for use under the RFS program.

For example, using proportionality in production facilities processing both approved and unapproved feedstocks, with appropriate oversight controls in place, could quickly move this sector forward. Furthermore, restricting the use of naturally regenerative forest products is frustrating to producers in many states where there aren't any incentives to use this material under the RFS program. These trees and residues are typically still harvested anyways, but instead converted to pellets and shipped overseas for climate reductions elsewhere. These and other regulatory constraints have thwarted one of the most significant opportunities to produce

renewable drop-in fuels for aircraft and diesel engines given the economic burden associated with compliance.

Congress should request that the Agency take all necessary steps available to address these issues with wood administratively. Legislation may also be necessary to advance the second-generation biofuels industry.

4. What are your views on the EPA's 2016 proposed Renewable Enhancement and Growth Support Rule?

While the REGS Rule is broad in scope and addresses a slew of important regulatory issues with the RFS, one piece in particular should be finalized immediately: the section on biointermediate feedstocks. EPA's proposed action is agreeable to ABFA's members, and, if enacted, would rapidly further the commercialization of advanced biofuels. The Agency could separate this piece from the full REGS Rule to be finalized immediately and then complete, as appropriate, other proposed actions at a later date. We recommend the Administration indeed move forward immediately to finalize this section.

ABFA also specifically supports the REGS Rule's proposals to allow for space cooling and the current heating regulations moving forward.

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FIFTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

2125 RAYBURN HOUSE OFFICE BUILDING
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Majority (202) 225–2927
Minority (202) 225–3641

August 21, 2018

Mr. Derrick Morgan
Senior Vice President
American Fuel and Petrochemical Manufacturers
1800 M Street, N.W.; Suite 900 North
Washington, DC 20036

Dear Mr. Morgan:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

American
Fuel & Petrochemical
Manufacturers

1800 M Street NW
Suite 900 North
Washington, DC
20036

202.457.0480 office
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afpm.org

September 4, 2018

The Honorable John Shimkus
Chairman
Subcommittee on the Environment
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Shimkus,

The following are responses from the American Fuel & Petrochemical Manufacturers in response to your questions for the record following the June 22, 2018 hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects." AFPM appreciates the opportunity to provide its views.

1. **Is there a potential future scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?**

   Yes, and AFPM would welcome market-driven competition from advanced biofuels. However, as with any new technology, advanced biofuels' ability to compete and ultimate market size will be dictated by economics, logistical and market barriers, and consumer preferences. The fact is, excluding biodiesel, biogas, and sugarcane ethanol, advanced biofuels are not currently a commercial-scale technology. The few facilities that have opened since 2007 have largely failed to sustain steady production, driven by logistical challenges and costs. These challenges have persisted despite the RFS. Simply mandating a technology's use is not sufficient to ensure it is viable.

   As for biodiesel, the continuing challenge is cost. Biodiesel can be successful if the industry can improve the efficiency of the production processes and reduce the cost—much like corn ethanol has done. For instance, AFPM's members have successfully commercialized fuels like renewable diesel, which can be co-processed in the refining complex and is cost-competitive.

2. **What are your views on the EPA's 2016 proposed Renewables Enhancement and Growth Support (REGS) Rule?**

   The REGS rule was a broad rulemaking that covered multiple issues. AFPM and API submitted joint comments on multiple aspect of the rule, supporting EPA's proposals in some areas, opposing others, and offering alternative suggestions. The bulk of our



comments focused on the treatment of bio- intermediates, ethanol flex-fuel, and a long list of regulatory amendments. A copy of our comments is attached for the record.

Please contact me at [redacted] if I can be of further assistance.

Sincerely,

[redacted]

Derrick Morgan
Senior Vice President, Federal & Regulatory Affairs
American Fuel & Petrochemical Manufacturers Association

Cc: The Honorable Paul Tonko

Attachment: AFPM/API Joint REGS Rule Comments – Docket ID No. EPA-HQ-OAR-2016-0041

energy API

AFPM
American
Fuel & Petrochemical
Manufacturers

February 16, 2017

Air and Radiation Docket
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Renewables Enhancement and Growth Support Rule
Docket ID No. EPA-HQ-OAR-2016-0041

Submitted via www.regulations.gov

The American Petroleum Institute (API)[1] and American Fuel & Petrochemical Manufacturers[2] appreciate the opportunity to provide comments to EPA's Proposed Rulemaking entitled Renewables Enhancement and Growth Support Rule. AFPM and API support EPA's intent to apply the environmental controls on fuels in a uniform, balanced, and equitable manner.

A. BIOINTERMEDIATES

1. General

AFPM and API support EPA's proposal to maintain the current regulatory framework that ensures, with very few exceptions, that only the renewable fuel producer is permitted to generate RINs.[3] This provision of the regulations helps minimize RIN double-counting and provides more confidence in the integrity of these RINs.

We support the multi-facility approach to biointermediates and end-products. Biointermediates may be easier to transport than whole or even pre-processed biomass. This allows for more feedstock flexibility and product flexibility and may allow for easier deployment of second-generation biofuels (however, it does not intend to limit production of first generation biofuels any more stringently).

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[1] The American Petroleum Institute (API) is the only national trade association that represents all aspects of America's oil and natural gas industry. Our more than 625 corporate members, from the largest major oil company to the smallest of independents, come from all segments of the industry. They are producers, refiners, suppliers, marketers, pipeline operators and marine transporters, as well as service and supply companies that support all segments of the industry.

[2] AFPM is a national trade association representing nearly 400 companies that encompass virtually all U.S. refining and petrochemical manufacturing capacity.

[3] 81 Fed. Reg. 80836

AFPM and API agree with EPA's proposal to require biointermediate producers to undergo annual attest engagements similar to current annual attest engagement requirements for renewable fuel producers.[4] This is necessary to assure that biointermediate producers are treated the same way as renewable fuel producers and that the finished renewable fuel fully complies with regulatory requirements.

EPA proposes that for a renewable fuel producer to generate a Q-RIN, both the biointermediate producer and the renewable fuel producer must have in place an EPA-approved pathway-specific QAP.[5] AFPM and API agree. This requirement is critically important to ensuring RIN integrity at a time when fraud may be continuing in the renewable fuel producer industry.

EPA proposes that during the interim implementation period, biointermediate producers and renewable fuel producers using biointermediates must have EPA-approved pathway-specific QAPs. During the proposed interim period, this proposed QAP restriction should not apply to foreign ethanol producers who are currently covered under RFS regulations.

2. Biointermediates Lifecycle Assessment

The application of sound science requires EPA's GHG Life Cycle Assessment (LCA) to include the entire carbon footprint of the biofuel produced under the RFS, including emissions associated with the transportation of biointermediates. EPA's assumption that transportation of biointermediates would not need a revised LCA should be tested, as transportation distance could impact GHG emissions significantly. Options to address this issue include:

- A limit on transport distance could be set to ensure a robust LCA for multiple facilities; greater transportation distances could require the establishment of a more precise LCA.
- LCA could be conducted to quantify the highest emissions potentially associated with transport of a biointermediate from one coast to another. If this "highest emissions scenario" is not significantly different than the registered pathway, then this assumption can stand.
- The energy density of the biointermediate can also affect GHG emissions. For example, if biomass is processed into a dilute sugar intermediate and then transported across the country where it is then fermented, the emissions associated with transporting a high water-content biointermediate would be significantly higher (per unit energy) than transporting undenatured ethanol, for example. This issue is especially relevant for cellulosic sugars, where the biointermediate produced between pretreatment and upgrading can be quite dilute.

B. ETHANOL FLEX-FUEL

a) Definition

[4] 81 Fed. Reg. 80839
[5] 81 Fed. Reg. 80840

AFPM and API support EPA's intent to apply the environmental controls on fuels in a uniform, balanced, and equitable manner (i.e. equally to gasoline and EFF). EPA must decide whether to keep the current classification of E16-50 as gasoline or to re-classify it as Ethanol Flex Fuel (EFF) in the same category as E51-83. EPA proposes to categorize E16-50 blends as EFF for FFVs only. This regulatory determination would have significant consequences for fuel manufacturers and the environment. EFF currently is not subject to the same level of environmental controls as gasoline. AFPM and API agree with EPA "*...it is important that clear quality standards apply to any fuel used in an FFV, including sulfur, benzene, RVP, and composing only of carbon, hydrogen, oxygen, nitrogen, and sulfur, or 'CHONS.'*"[6] These parameters are regulated based on health and environmental considerations and must apply equally to all motor fuels.

API and AFPM support the proposed sulfur, benzene and elemental composition requirements for EFF mirroring those for gasoline.

EPA proposes RVP standards for EFF upstream of blender pumps that parallel those for gasoline without the 1 psi waiver for E10, but does not propose an RVP standard for blender pumps. The RVP standards placed for blender pump EFF are insufficient when E0 is a parent blend.

API and AFPM support equal treatment for EFF and gasoline with regard to the Registration and Health Testing in Part 79. The Testing Requirements for Registration in Subpart F of 40 CFR Part 79 also apply to fuels other than gasoline. The definitions in section 79.50 are general, not specific to only gasoline. Therefore, the regulations in Part 79 require testing for all fuels, including E16-50 and E51-83. Characterizing E16-50 as an EFF does not exempt E16-50 from these testing regulations. This testing is required, since the same kinds of emissions and exposure-related issues those regulations address could also exist for E16-50.

The Agency proposes that E16-50 is EFF and not gasoline, but does not propose to modify §79.56(e)(1)(i) to exclude E16-50 as part of the Gasoline Family. In addition, EPA could create a new family for E16-50 in Part 79. E16-50 does not meet §79.56(e)(1)(iv):

> *"(iv) The Ethanol Family includes fuels composed of at least 50 percent ethanol by volume and their associated fuel additives. The base fuel for this family is E85 as specified in §79.55(e)."*

b) EFF and 3 Proposed Options

We support the classification of E16+ as EFF as EPA proposed in the NPRM. In addition, we support EPA's proposed framework that would require EFF to meet sulfur, benzene, RVP and CHONS requirements the same as gasoline. We oppose suggestions that EPA deviate from their proposed approach for blender pumps (i.e, sulfur, benzene). Compliance testing at retail is done at the pump so it is uncertain how EPA would verify compliance with that suggested approach. Deviation is not necessary. The refiner/bulk blender options provide an option where the natural gasoline can be at any sulfur levels. The point of the expedited blender pump approach is that one can only rely on the product transfer documents (PTDs) to ensure

[6] 81 Fed. Reg. 80831

compliance if the components are compliant. We would like to provide the following comments on the three compliance mechanisms that were identified to produce EFF: the EFF Full-refiner option, the EFF Bulk blender-refiner option, and the EFF Blender pump-refiner option.

EFF full-refiner option:

We agree that the full-refiner option allows for the most flexibility to produce EFF since it allows refiners to utilize uncertified natural gasoline, certified natural gasoline EFF blendstock, certified gasoline, BOBs, denatured fuel ethanol (DFE) and undenatured ethanol as EFF blendstocks. We support the batch testing requirements that EPA proposed as requirement to select this option. It seems reasonable that the use of uncertified natural gasoline as a blendstock would require additional testing and certification requirements to assure product quality. We find the ethanol producer comments that the proposed per-batch testing requirements are not consistent with the current practice of in-line blending unpersuasive. Facilities that utilize in-line blending to produce EFF would need to follow the provisions of the EFF bulk blender-refiner option. Another alternative would be to blend up EFF in a tank and certify it before sales. This would allow the facility to utilize any of the approved blending components listed above.

Additionally, we offer the following:

- We support a summer 9 psi RVP standard in conventional gasoline (CG) with the 1-psi vapor pressure waiver granted by the Clean Air Act and implemented by the EPA. We also support a 7.8 psi RVP standard where gasoline is subject to 7.8 psi RVP standard, and a 7.0 psi RVP standard in RFG areas.
- We support consistent registration, record keeping, annual reporting and PTD requirements for EFF producers similar to those for gasoline.
- We support EPA's proposal that once EFF has been certified, no additional blendstocks could be added downstream; no commingling batches of EFF downstream of the production facility except at EFF blender pump-refiner facilities and retail/WPC facilities that dispense EFF from dedicated dispensers.

Consistent with other fuel programs and in order to enhance compliance flexibility, we recommend allowing for averaging EFF compliance by refiners, and not EPA's proposal of refinery-by refinery basis. We also support benzene and sulfur trading provisions vs. EPA's proposal not to allow trading.

EFF bulk blender-refiner option:

The EFF bulk blender-refiner option allows parties to avoid per-batch testing and rely upon PTD documentation to prove that the EFF was only produced using certified EFF blendstocks, participate in the proposed EFF quality survey and utilize the RVP compliance tool depending upon which components were used at outlined in Table IV.B.2-1 Methods Available to EFF Bulk Blender-Refiners To Demonstrate Compliance With the Proposed EFF Requirements. We agree that use of the certified blendstocks to avoid per-batch testing is a reasonable tradeoff. Enhanced PTD language will be the key to enforcement of E16-50 produced at a Bulk Blender

facility. Relying on compliant blendstocks is not as rigorous as requiring E16-50 to be certified via sampling and testing and could represent a greater risk to the environment.

We support the proposed use of certified natural gasoline for EFF, including reporting, sampling and testing requirements. EPA seeks comments on whether the RVP compliance tool should be allowed instead of measurement. We believe the compliance tool needs validation. EPA should continue to require compliance through testing, either by per batch certification or through refinery hand blends as is currently done for E10 and E15 blends. The compliance tool is based on blends of only 13 test fuels, none of which represents natural gasoline, and only two of which represent "E85" parent blends. This tool needs to be verified with a much wider set of test fuels before it could be used for compliance.

Specifically we support the proposed specifications and limitations for the certified natural gasoline EFF blendstock of:

- 10 ppm per gallon sulfur cap
- 0.62 volume percent benzene cap
- 275 degree F T90 distillation cap
- 375 degree F final boiling point cap
- 15 psi RVP cap
- 30 volume percent cap on natural gasoline in the product

EFF blender pump-refiner option:

The final option is the use of blender pumps at the retail station to make EFF only from compliant gasoline (E0, E10 with or without the 1 psi waiver, and E15) and EFF. The retailer demonstrates compliance through the use of PTD's showing the blends were produced from compliant components.

Relying on compliant blendstocks is not as rigorous as requiring E16-50 to be certified via sampling and testing and could represent a greater risk to the environment. Given the different permutations for EFFs at the blender pumps, EPA must set an RVP standard produced at blender pumps to prevent higher emissions. EPA proposes they *"would monitor the RVP of EFF produced at blender pumps, and if the results of this evaluation indicate that additional controls of EFF at blender pumps are warranted, such controls may be proposed in a later actions."*[7] To ensure level playing field and avoid negative environmental impacts, EPA should first implement RVP controls and monitor/enforce compliance. We support EPA's proposal requiring that E51-83 be the EFF parent blend used at blender pumps to provide additional quality control.
Our biggest concern with this option is the potential for misfueling if the product was dispensed from pumps that utilize a single hose. Since the hose traps EFF, a customer fueling a vehicle not certified to operate on EFF, a motorcycle, or a fuel can for small engines could put the wrong fuel in their equipment. EPA must rework the E15 misfueling mitigation program to address this real world concern. Alternatively, the EPA could require that EFF be dispensed from a separate hose than gasoline.

[7] 81 Fed. Reg. 80852

Natural gasoline as blendstock for EFF

EPA proposes that full refiners and EFF-blender refiners can use natural gasoline in the blend, subject to certain requirements, including a maximum RVP of 15 psi. We question the technical basis for this 15 psi max RVP requirement. We support provisions requiring refiners and importers of certified natural gasoline to register with EPA, and submit batch reports annually and issue PTDs.

c) EFF and Octane Number

AFPM and API oppose EPA setting an octane number specification for EFF and support the Agency's decision to omit an octane specification for EFF from the Proposed Rule. Congress has not explicitly granted EPA the authority to regulate octane and AFPM and API question EPA's authority to establish an octane standard under the CAA. Octane number is only mentioned once in 42 USC 7545 and that is in connection with the definition of "baseline gasoline" under the reformulated gasoline (RFG) program. Regulating octane would require EPA to first address numerous procedural requirements and would require several determinations and findings. AFPM and API believe that the Agency cannot meet the heavy burden imposed on it to justify regulating octane in this rulemaking. In addition, ASTM test methods for octane, D2699 and D2700, cannot be applied to all EFF because they include an upper limit – maximum 25 vol% ethanol.

d) EFF Benzene Standards

AFPM and API support the stipulation that compliance with the proposed 0.62 volume percent annual average benzene standard would be evaluated annually on an EFF refinery-by-refinery basis.[8]

e) EFF Summer RVP

AFPM and API support applying the same summer RVP standard to EFF as the summer RVP standard for gasoline. This would benefit air quality and level the playing field. EFF should not have a summer RVP standard that is independent of the local RVP standard that is applicable to gasoline. FFVs have a greater capability to control evaporative emissions compared to conventional gasoline vehicles, and we support EPA's proposal to limit the RVP of EFF to 8.8 psi in CG areas where gasoline is subject to a 7.8 psi RVP standard and to 8.0 psi in RFG areas to provide a comparable level of evaporative emissions for FFVs operated on EFF compared to conventional gasoline vehicles operated on gasoline.[9]

f) EFF Samples at Blender Pumps

[8] 81 Fed. Reg. 80842. *See also* 40 CFR 80.1520(b)(2)
[9] 81 Fed. Reg. 80852

API and AFPM support sampling the final blended fuel (EFF or E15) not the individual components of the product. The National Institute for Standards and Technology (NIST) developed a recommended sampling procedure titled, "Taking an E15 Sample from a Multiple Product Dispenser (MPD),"[10] after weights and measures officials discovered that the E15 gasoline they sampled experienced erratic ethanol content between samples (15% on first sample, 33% on second sample).[11] The background for the sampling procedure explains the importance of the issue:

> "[i]f the [E15] flow is interrupted prior to collecting at least 7.5 L (2– gal) the product must **not** be used in a fuel sample. By following the recommended procedures to collect samples for fuel quality determinations, an official should obtain an accurate representation of the fuel that the dispenser has delivered." [emphasis added]

From that statement one can infer that you must test the blended product, not simply test the individual fuel components to determine if the RVP of E15 or EFF is meeting specifications. Testing the individual components would not prove that the fuel meets the requirements.

Additional clarification is found in the following excerpt found in the background to the NIST Handbook 158 recommended sampling procedure:

> "It is important to recognize that the fuel blend is also affected by both the flow rate of the dispenser and system pressure, which vary depending on the number of dispensers on the system drawing from the different fuel storage tanks. The blend ratios will be different when using a MPD to produce E15 and mid-level ethanol blends (Exx). Because the normal fuel sampling process involves taking a small quantity of fuel at a slow flow rate (and that may involve re-starts), it is likely that the fuel blend in these samples are not representative of the fuel delivered in a typical customer transaction. The Environmental Protection Agency (EPA) has recognized that this operational characteristic of MPDs for blending E15 may result in the inadvertent mis-fueling of E15 in vehicles, engines, and equipment not covered under the EPA's E15 waiver to the Clean Air Act. To help ensure that customers do not inadvertently mis-fuel vehicles, engines, and equipment not covered underE15 waiver, the EPA requires retailers to dispense E15 at a MPD only through EPA-approved MPD configurations." "For these reasons, it is recommended that a fuel quality sample (e.g., 1 L) be taken from a larger sample of between 7.5 L (2-Gal) and 9.4 L (2.5- Gal) or more. The sample should be collected in a clean container (e.g., a 9.4 L (2.5- Gal) or 19 L (5-Gal) safety can under a continuous flow delivered at or near the fullflow rate of the device because this allows the dispenser adequate time to account for system variations in making its adjustments to the blend ratio. If the flow is interrupted prior

[10] "Field Sampling Procedures for Fuel and Motor Oil Quality Testing A Handbook for Use by Fuel and Oil Quality Regulatory Officials," NIST Handbook 158, http://nvlpubs.nist.gov/nistpubs/hb/2016/NIST.HB.158.pdf

[11] Email Feb 8, 2016, at 2:35 PM, Benjamin, Steve, CPM, Director, Standards Division, NCDA&CS

to collecting at least 7.5 L (2– gal) the product must not be used in a fuel sample. By following the recommended procedures to collect samples for fuel quality determinations, an official should obtain an accurate representation of the fuel that the dispenser has delivered."

g) Controls and Prohibitions on Ethanol Flex Fuel Volatility

EPA should review the proposed language used in 80.1531 detailing the state-by-state volatility requirements for the Commonwealth of Massachusetts copied below:

> *(19) Massachusetts. No person may sell, offer for sale, dispense, supply, or offer for supply ethanol flex fuel that has an RVP that exceeds a 9.0 psi standard except that no person may sell, offer for sale, dispense, supply, or offer for supply ethanol flex fuel that has an RVP that exceeds a 7.0 psi standard in Barnstable, Berkshire, Bristol, Dukes, Essex, Franklin, Hampden, Hampshire, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester Counties.*

The proposed language suggests that part of Massachusetts is RFG and part is CG at summer maximum 9.0 psi RVP. However, RFG is state-wide in Massachusetts. This proposed regulatory text should be replaced by the same text as other states with state-wide RFG, i.e., Connecticut, Delaware, the District of Columbia, New Jersey and Rhode Island.

h) EFF Deposit Control

EPA proposes to remove the deposit control requirement for E51-83 and not to adopt deposit control requirements for E16-83. EPA's decision was made on the basis of insufficient data. SAE 2007-01-4071 showed that for E85, the 15% gasoline portion with an LAC treat rate of DCA might not be sufficient to prevent IVD in FFVs. While midlevel ethanol blends were not tested, this work suggests that an LAC treat of the gasoline may not be sufficient to mitigate IVD in those blends.

i) EFF Quality Survey Program:

We support the notion of an EFF Quality Survey, but believe that the survey should be voluntary for full refiners. Full refiners test and certify each batch of fuel, so the quality survey has less importance for them as regulated parties. We believe that if a refiner participates in the EFF Quality Survey, it should be given an affirmative defense for any compliance violations related to fuel produced during the period of time during its participation.

j) EFF Pump Label

EPA made the appropriate decision not to propose labeling requirements for EFF pumps. FTC promulgated rules for labeling EFF and we would not support duplicative labeling requirements.

k) Third Parties

API and AFPM support proposed requirements for third party professional engineers and electronic submission of engineering reviews to EPA. In addition, we support the proposed requirement for third-party auditors to minimize RIN fraud. Third-party professional engineers must comply with the requirements for QAP providers, must register with the EPA and must submit the reports directly to EPA instead of the renewable fuel producer. Third- party professional engineers are prohibited from failing to identify incorrect information in a renewable fuel producer's registration, failing to properly conduct an engineering review, failing to disclose to EPA any financial, professional business or other interests with parties for whom the third- party professional engineer provides services under the RFS. To avoid conflicts of interest, we support EPA's proposal to preclude third- party auditors from providing initial and triennial engineering reviews for the same renewable fuel producer.

C. RENEWABLE FUEL STANDARD

1. RVO for EFF

API and AFPM do not support, and question EPA's authority, to defer imposition of an RVO on parties making EFF with natural gasoline blendstocks. These non-renewable hydrocarbon blendstocks should have the same RVO obligation as BOBs. The finished EFF is used in transportation, similar to EFF, E10, and E15 fuels formulated with BOBs.

2. eRINs

EPA expresses a concern shared by API and AFPM with the validity of RINs generated for electricity produced from biomass and used as transportation fuel. EPA emphasizes that two requirements must be met: 1) the electricity must be produced from biomass, and 2) the electricity must be used as a transportation fuel. As a means of addressing this concern, EPA provides potential structures for assuring valid RIN generation and electric vehicle consumption. However, these potential structures fail to meet both requirements.

There is a fundamental disconnect between biogas production and certainty that the electricity produced from the biogas is used as vehicle fuel in transportation to support valid RIN generation. Several parties are involved along the way: biogas producers, pipelines, IPP's, utilities (who both produce and distribute), distributors, fleet stations, public EV charging stations, and individual EV customers (who charge at home). The processes established through the Renewable Energy Certificate (REC) market is an already established alternative for measuring the renewable power feeding into the grid that puts additional renewable sources (power, solar, hydro) on a level playing field to generate eRINs. Though under any measuring process, the complex system has a high risk for fraudulent RIN generation if proper regulatory controls are not implemented. The biogas producer, similar to a biointermediate producer, captures the biogas, but it isn't ready for use in a vehicle until it is compressed, liquefied, or used in power generation. Efficient transport is likely in fungible pipelines, which would require some material tracking / management to the biofuel producer at the facility that generates CNG/LNG/electricity/other, where the RIN would be generated. If the fuel/electricity is not used in vehicle fuel, the RIN would need to be retired. The

responsibilities for RIN separation, and accountability for sale to vehicle fuel would need to be clearly defined, but have parallels with the rules regarding traditional biofuels sales into US domestic transportation/heating oil/jet fuels for domestic use.

EPA must propose for public comment through the rulemaking process a regulatory structure meeting both requirements to move forward with an eRIN provision. In addition, EPA must take public comment on the number of RINs to be generated per unit of electricity consumed as transportation fuel (i.e. energy equivalency value) accounting for energy losses during vehicle charging and vehicle use, and the appropriate reductions for vehicle electricity consumption that is used for non-transportation purposes, to reflect the actual electricity used to propel a transportation vehicle.

API and AFPM submitted joint comments on renewable electricity pathways in response to EPA's Proposed Rulemaking "RFS Pathways II and Technical Amendments to the RFS2 Standards" (Docket ID EPA-HQ-OAR-2012-0401 on July 13, 2013). They are re- inserted below as they continue to be relevant:

> "As EPA states, "Landfills can generate electricity by combustion of the methane in their biogas...once generated, the electricity enters the electric grid." Net GHG environmental benefits from this electricity generation process would be assessed and tracked by EPA's tailoring rule. We agree with OMB, who pointed out this issue in its comments to the EPA during the interagency review of this proposed rule.
>
> *The scheme proposed by EPA is particularly troubling, as it could potentially result in proliferation of invalid RINs. EPA's recently proposed rulemaking "RFS Renewable Identification Number (RIN) Quality Assurance Program" (Federal Register, vol. 78, pages 12158-12217) does not address the issue of RIN validity for biogas and renewable electricity produced and used for transportation.*
>
> How does one know that the renewable electricity is not displacing other renewable or low carbon electricity in the grid (solar, wind, hydro, natural gas, nuclear)? Further, how does one account for down time at the landfill generating station? Even in the case when 100% of the electricity generated by the landfill facility is used to charge electric vehicles directly at the plant, how are these RINs separated, validated, and transferred to the obligated parties for compliance? This proposal, if finalized, has the potential to result in invalid RINs similar to the issue with fraudulent biodiesel RINs in 2011-2012, as a result of biodiesel producers' ability to separate RINs provided they are introduced in the transportation sector as neat fuel.
>
> Notwithstanding the discussion in the previous section regarding the high GHG emissions that should be included in landfill gas for not recycling paper, if the landfill gas displaces other renewable electricity, such as from wind or solar, there should be no RINs available.
>
> Finally, Table 3 below shows two possible pathways for electricity generated from landfill gas and the use of electricity in electric vehicles; the Table uses EPA's data. Pathway 1 supplies electricity from the plant directly to electric vehicles, as would be the case with a contract. Pathway 2 supplies electricity into the grid, where it

displaces grid electricity used for non-transportation purposes. At some other point, a user uses grid electricity to power electric vehicles. Note that in both cases the GHG emissions are equivalent. There is no change in GHG emissions because of the existence of a contract between the two parties, and so no RINs should be generated. Consider the case of a landfill that is already generating renewable electricity from landfill gas. With the increasing availability of PHEVs and EVs, it is likely that at least some of this electricity is going to charge these vehicles. However, if the landfill now signs contracts with these users, although there is no change in GHG emissions, RINs would be allocated to the landfill."

Table 3. Renewable electricity pathway comparison.

	Data from Table V.B.-2		Pathway 1: Renewable Electricity to EV	Pathway 2: (a)Renewable Electricity to Grid (b)Grid to EV
	kg CO2eq/ mmBtu electricity	kg CO2eq/ mmBtu fuel equivalent*	kg CO2eq/ mmBtu fuel equivalent*	kg CO2eq/ mmBtu fuel equivalent*
Renewable Electricity	12	4	4	4
U.S. Average Grid Electricity	220	73		73
2005 Baseline Gasoline	N/A	98		
TOTAL Emissions			4	77
Base Emissions				
Electricity			N/A	73
Gasoline			98	98
Total Base GHG Emissions			98	171
Renewable Electricity / EV Emissions			4	77
GHG Emissions Change			-94	-94

3. Reporting

EPA proposes that obligated parties would now report the constituent products described in 40 CFR 80.1407(c) and (e) separately, instead of in total, beginning with the 2017 compliance year, stating that it would "enable the EPA to more easily track the production of gasoline and diesel by obligated parties and verify that the reported volumes are accurate."[12] This reference to 40 CFR 80.1407(c) and (e) is not clear. We support reporting of constituent products (gasoline, diesel), but need an exact definition of volumes to report by category instead of referencing 80.1407(c).

A refinery can report Total Diesel Volume and Heating Oil Volume. However, a refinery will not know the volume of renewable fuel blended into diesel outside of the refinery, such as a terminal. Renewable Fuel Blended into Diesel should not be required.

The new requirement in section 80.1451 (1)(vii), as currently proposed, requires reporting under the RFS program for heating oil "beginning with the 2017 calendar year and every year thereafter, the production volume and import volume for heating oil, as defined in §

[12] 81 Fed. Reg. 80900

80.2(ccc)." That section also states that "volumes of renewable heating oil for which RINs were generated under § 80.1426 shall not be included."

Even though the production and import volumes of heating oil can be obtained from existing records, companies do not have the capabilities to track the amount of renewable fuel in HO imports, distillate blendstocks used to produce HO, and previously designated HO and ULSD designated at the refinery as HO. The new proposed reporting obligation for heating oil will require companies to exclude these renewable volumes. This can be complex within a refinery system and with imports, and that capability will require time to develop.

The proposed 2017 compliance year is implemented too soon. This should be applicable the year after promulgation. For example, if this requirement is promulgated in 2017, then it should be effective beginning with the 2018 compliance year.

4. Revising the Requirements for the Generation of RINs for Fuel Made From Vegetable Oils

Viscous Renewable Diesel

EPA proposes to allow the generation of RINs by blenders of straight vegetable oil (defined as viscous renewable diesel (VRD)) and petroleum diesel. To generate RINs, EPA would require VRD Blenders to produce a fuel that meets the specifications of ASTM D975 Grade No. 1-D or No. 2-D. We believe that this provision could be misinterpreted to be limited to only the list of specifications within ASTM D975 and not the entire standard. EPA should clarify that this meet the entire ASTM standard- the totality-not just the numerical specifications.

Furthermore, a review of the entire standard appears to prohibit the use of VRD to produce a fuel that meets ASTM D975. Regardless, we believe that petroleum diesel/VRD blends would cause motor fuel quality issues related to oxidation stability and filter plugging and should not be allowed. ASTM D02 Subcommittee E has determined that raw vegetable oil or "viscous non-ester renewable diesel" is not fit for use in diesel engines or heating oil burners. The subcommittee balloted an update to D396, the heating oil specification, to explicitly exclude any blending of raw vegetable oil as it was found to cause rapid and severe fouling of heating oil burners even when present at a low level.

Non-viscous renewable diesel

The definition of "non-viscous renewable fuel", as currently proposed, requires diesel produced from co-processing to meet ASTM D975 without subsequent blending at the production facility. Typically, both gasoline and diesel fuel are produced at petroleum refineries by the blending of hydrocarbon components to meet applicable ASTM specifications and EPA and state requirements. It is fairly typical that the hydrocarbon components by themselves do not meet ASTM specifications, but the final product does so after the blending process. EPA's proposed definition of "non-viscous renewable fuel" would treat that renewable feedstock differently than hydrocarbon feedstocks thereby unnecessarily restricting the use of that component. API/AFPM suggest a revision to the definition of that

term which we believe preserves the integrity of the RIN generation process, levels the playing field for renewable fuels, and would increase the availability of renewable diesel.

API and AFPM suggest the following changes to the proposed definitions of "viscous renewable diesel" and "non-viscous renewable diesel" (page 80928 of the proposal):

Non-ester renewable diesel, also known as renewable diesel, is either viscous or non-viscous renewable diesel:

(1) **Non-viscous renewable** diesel satisfies all of the following conditions:
(i) Is not a mono-alkyl ester.
(ii) Is produced by processing renewable biomass, or co-processing renewable biomass and non-renewable feedstocks, through a hydrotreating process.
~~Meets the ASTM D975–13a (incorporated by reference, see § 80.1468) Grade No. 1–D or No. 2–D specifications prior to blending with any other product.~~

(iii) Either in its neat form or combined with other blendstocks prior to shipment from its production facility, (a) meets the ASTM D975-13a (incorporated by reference, see §80.1468) Grade No. 1-D or No. 2-D specifications, or (b) meets all specifications incorporated in a non-viscous renewable diesel's registration under 40 CFR part 79.
(iv) In its neat or combined form, can be used in an engine designed to operate on conventional diesel fuel.
~~(iv) Is produced through a hydrotreating process.~~

(2) **Viscous renewable diesel (VRD)** satisfies <u>all</u> of the following:
(i) Is not a mono-alkyl ester.
(ii) Is a straight vegetable oil
(iii) Is intended for use as ~~one of the following:~~
~~(A) A blend in an engine designed to operate on conventional diesel fuel (referred to as <u>VRD for blending or VRD–B</u>).~~
(~~B~~) ~~A~~ a neat fuel for use either: In a vehicle or engine that has been converted to use such fuel under an EPA-approved Clean Alternative Fuel Conversion under 40 CFR part 85, subpart F; as heating oil; or as jet fuel (collectively referred to as VRD for neat use or VRD–N).

~~***Viscous renewable diesel blender or VRD blender*** means a party that blends <u>VRD–B</u> with petroleum diesel to produce fuel that meets the specifications of ASTM D975 Grade No. 1–D or No. 2–D (incorporated by reference, see § 80.1468).~~

5. Confidential Business Information (CBI)/RFS: Public Access to Information

EPA is proposing regulations that would streamline the processing of claims that RFS-related information should be withheld from public disclosure under the Freedom of Information Act (FOIA), 5 U.S.C. § 552(b)(4), as CBI. If finalized, the rules would identify the RFS information that would receive confidential treatment and the information that would be available for disclosure in response to a FOIA request without the need for the often time-consuming

notice and substantiation procedural requirements that would otherwise be required under 40 CFR Part 2, subpart B.[13]

We support specifying what RIN transactional information and RFS compliance information that is submitted through EMTS is entitled to treatment of CBI. With respect to the buy, sell, separate, and retire transactions, there are a number of fields identified that are system files that appear to be generated by EMTS, typically identified as system 1 through system 9 or 10. Consistent with the March 27, 2015 FOIA findings, we understand that those fields contain no data identifying the company or its personnel. While the field relating to Data Preparer is not currently identified as CBI, if that field or the other system generated fields do, in fact, contain information that could lead to the identification of the submitting company or its personnel, we request that those fields be treated as Confidential Business Information.

6. RIN Retirement

We support EPA's proposal for collecting information and placing it in one place within the regulation. EPA should ensure all required RIN retirement scenarios are included in the proposed new section of the regulation. We support the provisions for redesignation of renewable fuel on a PTD for non-qualifying uses, except that the proposed language in RIN Retirement Section 80.1434(a)(3) needs further clarification and is inconsistent with the language proposed in 80.1433. The requirement for RIN retirement should apply regardless of whether the renewable fuel was received with RINs. 80.1434(a)(3) states that only RINs received with the fuel need to be retired, in contradiction with proposed language in 80.1433.

7. Employment

EPA proposes the following at 80.1471:[14]

> *(12) The independent third-party auditor and its contractors and subcontractors shall ensure that all personnel involved in the third-party audit (including the verification activities) under this section do not accept future employment with the owner or operator of the renewable fuel producer, foreign ethanol producer, or biointermediate producer for a period of at least three years. For purposes of this requirement, employment does not include performing or participating in the third-party audit (including the verification activities) pursuant to §80.1472.*

The intent of this restriction is understandable, but the proposed regulatory language is unclear and unworkable. There is no way for an auditing company to control or even know what a former employee does after he/she resigns. Perhaps, the requirement should be placed on the biofuel producer, who could be prohibited from hiring an individual that audited the company for a period of three years following the audit.

Also note that both AFPM and API oppose the requirement to use 3rd party auditors in the RMP rule.

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[13] 81 Fed. Reg. 80909

[14] 81 FR 80952

8. EPA Must Close the Biodiesel Loophole for RIN Separation

RIN fraud remains pervasive. AFPM and API continue to support regulatory changes suggested in 2013 comments on EPA's QAP proposal (pp 12-13 of comments):

> *One of the primary reasons that fraud occurred was that only one party (i.e., the biodiesel producer) was involved in the generation, separation, and sale of RINs. Including independent third parties in the transaction creates a powerful deterrent to fraud.*
>
> *AFPM and API support an RFS regulatory amendment that prohibits biodiesel producers from separating RINs. As part of a Final Rule, EPA should revise 40 CFR § 80.1429 to make clear that a biodiesel producer may not separate RINs unless that biodiesel producer also is an obligated party and then only to the extent that the quantity of RINs separated is less than or equal to its RVO under the RFS. Currently, RFS allows RIN separation in the isolated cases where neat biodiesel is used in transportation. In the marketplace, this scenario is extremely rare, yet the separation provision is widely exercised and has been abused. AFPM and API opposed allowing biofuel producers to separate RINs in the RFS1 and RFS2 regulatory proposals. In the known cases of invalid RINs, biodiesel producers generated RINs on biodiesel that was not produced, separated those RINs, and sold them into the marketplace. Preventing biodiesel producers from separating RINs would have prevented the 140 million fraudulent biodiesel RINs and will eliminate this avenue for invalid RINs in the future.*
>
> *In the RFS2 regulations, 40 CFR 80.1429(b)(4) allows a biomass-based diesel producer to separate RINs for neat fuels that are designated and used as transportation fuel, heating oil, or jet fuel. Allowing biodiesel producers to separate RINs removes a significant protection against the creation of RINs that have no corresponding link to "wet gallons" of biodiesel. In the known cases of invalid RINs, biodiesel producers generated RINs without actually producing any physical biodiesel and sold the RINs into the marketplace. The RIN purchasers did not suspect the fraudulent generation of the RINs due to the fact that biodiesel producers are allowed to separate RINs and sell them apart from the physical volume of biodiesel and because the RINs were generated by an EPA-registered biofuel producer. Preventing biodiesel producers from separating RINs will eliminate this avenue for fraud.*
>
> *In the Preamble to the RFS 1 regulation, EPA stated: "Our program basically requires RINs to be transferred with renewable fuel until the point at which the renewable fuel is purchased by an obligated party or is blended into gasoline or diesel fuel by a blender." EPA needs to return to this principle in the case of biomass-based diesel RINs.*
>
> *There is no harm from requiring the biodiesel RIN to remain attached to the biodiesel gallon until the biodiesel is acquired by an obligated party, blended at a 20% or lower ratio with diesel fuel or consumed in an approved manner.*

In the extremely rare case where biodiesel is actually used as a neat fuel, the RIN should only be separated by an independent party downstream from the original producer. By requiring all biodiesel RINs to remain attached when sold by the producer, EPA can provide the RIN marketplace with additional confidence that the biodiesel associated with the RIN was actually produced, distributed and used.

To implement this significant risk reduction measure, we suggest the following modifications to 40 CFR § 80.1429(b)(4):

> *(4) Any party that produces, imports, owns, sells, or uses a volume of neat renewable fuel, or a blend of renewable fuel and diesel fuel, must separate any RINs that have been assigned to that volume of neat renewable fuel or that blend if:*
> *(i) The party designates the neat renewable fuel or blend was designated by the producer or any party downstream of the producer as transportation fuel, heating oil, or jet fuel; and*
> *(ii) The neat renewable fuel or blend is used without further blending, in the designated form, as transportation fuel, heating oil, or jet fuel.*

9. Other Compliance Issues

a) E15 Misfueling Mitigation Harmonization:

Proposed changes to E15 PTDs should be harmonized with PTD provisions in Tier 3 gasoline sulfur program and incorporate new language to help EFF blender pump-refiners comply with EFF requirements.

b) Flexibilities for Renewable Fuel Blending for Military Use

We agree with the proposal to allow delegation of RFS related responsibilities to upstream parties for military applications, as this is consistent with other existing provisions (i.e. delegation allowances for small renewable fuel blenders).

c) Heating Oil Used for Cooling

We believe that amending the definition of heating oil to include cooling applications is appropriate and consistent with CAA section 211(o) requirements.

d) CCS Implementation Under the RFS

Based on the data provided in EPA's memorandum EPA-HQ-OAR-2016-0041, the LCA for sorghum ethanol did not include the carbon footprint of chemicals used at the biorefinery. We suggest that EPA publish these data on the chemicals used (type and amounts) at the sorghum ethanol biorefinery and include their individual carbon footprints in the LCA calculation. Then they can compare the LCA footprint of "sorghum ethanol coupled with CCS" to that of gasoline, in order to determine if sorghum ethanol with CCS meets the "advanced biofuel" threshold or not.

In the proposal, EPA notes that if a renewable fuel producer fails to notify EPA of a surface leak and fails to comply with the potentially invalid RIN administrative procedures, the renewable fuel producer will be deemed to have failed to take corrective action and "all RINs generated under the CCS pathway **during the five years preceding the leak** could be considered invalid." (p. 80883 of the *Federal Register*, emphasis added.) Invalidating five years of RINs is a severe consequence and places obligated parties at risk of having used invalid RINs for compliance purposes. This seems particularly unfair to obligated parties who would have no access to knowing or monitoring whether surface leaks were occurring. If such is the consequence, renewable fuel producers using CCS should be required to either verify all RINs as Q-RINs under the QAP or establish escrows or similar accounts for replacing RINs found to be invalid so as to protect the due process rights of obligated parties.

e) Renewable Fuels Produced From Short-Rotation Trees

- For poplar, EPA cites a yield range of 2.0 – 5.8 dry tons/acre/yr, but claims that their estimate of 4.57 is "on the lower end of the range". EPA should use a median value.
- For willow, the dry content estimate of 66.7% is at odds with the 55% cited. If the lower figure was used in combination with the EPA wet yield estimate, the dry matter yield would be only 5.47 x 55% = 3.00 dry tons/acre/yr instead of 3.65. EPA is underestimating the GHG emissions and should use consistent estimates.
- Diesel fuel use for poplar cited as 6 – 10 lbs/acre. This appears to be a typo and should be 6 – 10 gals/acre. For willow, the range is 5 – 17 gal/acre. EPA's estimates are below or at the low end of the cited ranges at 4.8 and 7.7 gal/acre for poplar and willow respectively. EPA should use a median value.
- Nitrogen fertilizer requirements for poplar seems to be based on data for willow; EPA should ensure the appropriate inputs are used.
- There are significant differences with the GREET paper regarding feedstock production in the docket. In general, GREET has lower energy requirements and higher crop yields than does the rulemaking, and we recommend using the GREET value.

f) Oxygenate Added Downstream in Tier 3

API and AFPM support the clarification of expectations for downstream oxygenate blending with respect to sulfur compliance.

EPA included clarifications related to sulfur compliance when including oxygenate blended downstream of the refinery. EPA also asked for comments on whether it should adopt similar provisions for the gasoline benzene program. EPA should adopt similar provisions – specifically, establishing a default value for the benzene content of DFE. Sampling the ethanol at the terminals is burdensome, so having a reasonable default value for DFE benzene content would be more practical when including downstream oxygenate into the refinery's compliance calculations.

10. Test method Revisions and Comments

a) EPA proposes ASTM D2622 to be the designated method for sulfur in EFF and is proposing to allow D1266, D3120, D5453, D6920, D7220, and D7039 as alternative test methods provided that their test results are correlated to D2622.

API and AFPM have concerns about the suitability of ASTM D2622 for measuring the sulfur content of EFF. We also note that ASTM D1266 and ASTM D3120 are relatively outdated methods. If D2622 is the designated method, then users should ensure that their analytical method has accounted for the interference from the high ethanol (oxygen) content in the fuel.

b) EPA seeks comment about whether to designate ASTM D5769 as a test method for measuring the benzene content of EFF.

API and AFPM support EPA's proposal to designate ASTM D5769 for measuring the benzene content of EFF. ASTM D3606 should not be included as an additional designated method for measuring EFF, nor should ASTM D3606 be allowed as an alternative test method because of interference issues. In addition, we support including ASTM D5580 as a co-designated method with ASTM D5769. ASTM D580 is a simpler method to maintain and run, and many laboratories may already be using ASTM D5580. Co-designating ASTM D5580 is also consistent with EPA efforts to avoid imposing an undue burden on the industry. We also support the use of ASTM D6730 as an alternative method.

c) EPA proposes to designate ASTM D5599 as the test method for measuring oxygenates in EFF and proposes to allow ASTM D4815 as an alternative method provided its results are correlated to ASTM D5599. API and AFPM oppose EPA's proposal to (a) establish ASTM D5599 as the designated primary test method for measuring the oxygenate content of EFF, and (b) allow ASTM D4815 as an alternative test method in this regard. The maximum range of the scope for the D4815 test method is 12% by volume ethanol and it does not allow for dilution. The maximum range of the scope for ASTM D5599 is 10% by volume ethanol. Therefore, neither of these methods are applicable for measuring the oxygenate content of EFF.

d) EPA seeks comment on whether PBMS should be applied to the test methods for EFF. The Agency also mentions wanting accuracy and precision criteria being developed for the EFF test methods.

> *"The EPA is also taking comment on whether we should establish Performance-Based Analytical Test Method Approach (PBATMA) requirements for the parameters of sulfur, benzene, distillation point, oxygenate content, and RVP in EFF and natural gasoline EFF blendstock. The EPA envisions that sulfur would fall under the absolute fuel parameter category for PBATMA where the precision criteria157 and accuracy criteria158 would be the same as for sulfur in gasoline.159 The EPA envisions the fuel parameters of benzene, T90 distillation point, oxygenate content, and RVP would fall under the method defined fuel parameter category for PBATMA.160 Under the method defined fuel parameter PBATMA requirements, the EPA envisions that the precision criteria would be the same as for each of these respective fuel parameters in gasoline.161 The EPA envisions that the accuracy criteria would be addressed by ASTM*

D6708 assessments to determine the need for a correction equation.162 The EPA envisions following the same approval process for EFF as for gasoline; that is, voluntary consensus standard body (VCSB) test methods self-qualify to regulatory criteria and non-VCSB test methods submit required information to the EPA for approval.163 Finally the EPA envisions that the EFF and natural gasoline EFF blendstock statistical quality control (SQC) PBATMA requirements for accuracy and precision would mirror what was finalized for PBAMTA for motor vehicle gasoline and diesel fuel.164 The EPA is interested in comments on whether the test methods discussed here sufficiently address EFF and natural gasoline EFF blendstock in their precision statement in order to establish PBATMA accuracy and precision criteria as discussed above for the fuel parameters of sulfur, benzene, distillation point, oxygenate content, and RVP."

API and AFPM believe that PBMS requirements should not be developed for EFF test methods. Data for materials with high ethanol concentrations do not exist to develop D6708 assessments for alternative test methods. In particular, there are no existing data available to develop accuracy and precision criteria for the applicable test methods.

In Section IX of the proposal, EPA proposes to remove the October 28, 2013 sunset date for exempting designated primary test methods from meeting the accuracy and precision requirements of 4 CFR 8.47. API and AFPM support EPA's proposal to remove the sunset date for the designated test methods.

e) EPA proposes to add accuracy and precision criteria for sulfur in pentane in 40 CFR 80.47(b) that are identical to sulfur in gasoline

We note that there is no relevant ASTM method for analyzing sulfur in pentane. Hence, there is insufficient information to support EPA's statement that the gasoline method "may be adaptable" to pentane. Additional data and analyses are needed. Consequently, API and AFPM oppose EPA's proposal to add accuracy and precision criteria for sulfur in pentane in 40 CFR 80.47(b) that are identical to sulfur in gasoline

f) EPA proposes to include ASTM D5769 as a designated method for benzene in gasoline, in addition to the current designated ASTM D3606 test method codified at 40 CFR 80.46(e).

API and AFPM agree that ASTM D5769 and D3606 should both be established as designated methods for benzene in gasoline.

g) Other Technical Comments to EPA's Proposed Test Method Revisions in 40 CFR 80.46 and 40 CFR 80.47

1. The proposed regulatory text for 80.46(f) (at 81 FR 80922) contains a typographical error. "Olefin" should be replaced with "Aromatic."

2. The new language at 80.47(b)(2)(i) & (ii) and 80.47(c)(2)(i) & (ii) is confusing. For example, proposed 80.47(b)(2)(i) & (ii) reads:

(i) The arithmetic average of a continuous series of at least 10 tests performed using *good laboratory practices on a commercially available gravimetric sulfur standard in the range of 1–10 ppm shall not differ from the accepted reference value (ARV) of the standard by more than 0.47 ppm sulfur, where the accuracy criteria is 0.75*(1.5*r/2.77), where "r" is the repeatability (Example: 0.75*(1.5*1.15ppm/2.77) = 0.47 ppm);*

(ii) *The arithmetic average of a continuous series of at least 10 tests performed using good laboratory practices on a commercially available gravimetric sulfur standard in the range of 10–20 ppm shall not differ from the ARV of the standard by more than 0.94 ppm sulfur, where the accuracy criteria is 0.75*(1.5*r/2.77), where "r" is the repeatability (Example: 0.75*(1.5*2.30ppm/2.77) = 0.94 ppm); and*

Please clarify whether labs should use the discrete value or the calculation based off the repeatability for ARV of the reference standard?

3. In 80.47(n)(1)(i), EPA states that the facility must construct "MR" and "I" charts with control lines as described in section 8.4 of ASTM D6299. Per section 8.4, 20 points are needed to set up I and MR charts. This is difficult if using the round robin for accuracy, and may not be necessary if the accuracy is bound by 0.75R and expanded uncertainty.

4. With respect to 80.47(n)(1)(ii) and 80.47(o)(1)(ii), EPA has not provided instruction on how expanded uncertainty is to be used. What is the significance of calculating this value?

5. Proposed 80.47(o)(1)(i) states:
Accuracy SQC. Every facility shall conduct tests of every instrument with a commercially available check standard as defined in ASTM D6299 at least three times a year using good laboratory practices. The check standard must be an ordinary fuel with levels of the fuel parameter of interest close to either the applicable regulatory standard or the average level of use for the facility. For facilities using a VCSB designated method defined test method, the ARV of the check standard must be determined by the respective designated test method for the fuel parameter following the guidelines of ASTM D6299. Facilities using a VCSB alternative method defined test method must use the ARV of the check standard as determined in a VCSB Inter Laboratory Crosscheck Program (ILCP) or a commercially available ILCP following the guidelines of ASTM D6299. If the ARV is not provided in the ILCP, accuracy must be assessed based upon the respective EPA-designated test method using appropriate production samples. The facility must construct "MR" and "I" charts with control lines as described in section 8.4 and appropriate Annex sections of this standard practice. In circumstances where the absolute difference between test results and the ARV of the check standard

based on the designated primary test method is greater than 0.75 times the published reproducibility of the designated primary test method, the cause of such difference must be investigated by the facility. Participation in a VCSB ILCP or a commercially available ILCP meeting the ASTM D6299 requirements for ILCP check standards, based on the designated primary test method, at least three times a year, and, meeting the requirements in this section for absolute differences between the test results and the ARV of the check standard based on the designated primary test method of less than 0.75 times the published reproducibility of the designated primary test method obtained through participation in the ILCP satisfies this Accuracy SQC requirement (Examples of VCSB ILCPs: ASTM Reformulated Gasoline ILCP or ASTM motor gasoline ILCP).

The above paragraph gives conflicting instruction. The ARV is to be established by the ILCP of the alternative test method, if available, but users must determine compliance using control charts with ARVs from the designated method. Please clarify.

6. Accuracy requirements for sections on sulfur accuracy (n)(1)(i) and non-VCSB accuracy (p)(1)(i) and (p)(2)(i), require the "mean of back-to-back tests" to be within 0.75R, but this section has changed to be the "absolute difference" of 0.75R. This is inconsistent, and the additional restriction is not necessary.

11. RVP

a. RVP Waiver for E15

API and AFPM do not support EPA extending the 1 psi RVP waiver for E15. This was not proposed by EPA, but it was raised at the Public Hearing in Chicago on December 6, 2016. It is not lawful to provide a 1 psi waiver for summer E15. We also oppose the suggestion by autos that EPA increase stringency of all gasoline to offset ethanol RVP.

We support the compliance requirements proposed by EPA:

- Sept – May: PTDs that the parent blends used to make E15 (E0, E10, EFF) were certified for sale upstream of the blender pump-refiner.
- June -Sept. 15: PTDs of certified parent blends; for conventional areas where 1 psi waiver for E10 applies, E15 cannot be made from E10 at the blender pump and cannot be made from E0 with EFF
- participate in an EPA-approved EFF quality assurance survey

b. Pump Label

Retail gasoline stations may be confused regarding E15 pump labeling and summer RVP requirements. EPA promulgated pump label regulations in 2011 when E15 is sold at retail. EPA's required pump label applies all year and is not seasonal (e.g., one for the winter and a different label for the summer) and cannot be altered without prior EPA's permission.

We strongly support EPA's reminder in this proposal. The Agency stated that summer RVP cannot be circumvented by relabeling; "intended use" on a pump label does not exempt E15 from fuel quality requirements (see 81 FR 80863):

> All gasoline, including E15, is subject to all of the requirements applicable to gasoline because of its formulation, not because of its end use. These requirements cannot be circumvented by relabeling. Allowing a fuel to be exempted from fuel quality requirements simply based on a statement of its intended use would undermine the EPA's ability to assure compliance with fuel quality requirements.

Thank you for the opportunity to comment on this proposal. If you have any questions regarding these comments, please call Patrick Kelly, API at (202) 682-8192 or Tim Hogan, AFPM at (202) 552-8462.

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FIFTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

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Minority (202) 225-3641

August 21, 2018

Ms. Robin Puthusseril
Vice President
Greater Chicago Truck Plaza
510 South Bolingbrook Drive
Bolingbrook, IL 60440

Dear Ms. Puthusseril:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

Ms. Robin Puthusseril
Vice President
Greater Chicago I-55 Truck Plaza
510 South Bolingbrook Drive
Bolingbrook, IL 60440

September 4, 2018

The Honorable John Shimkus
Chairman
Subcommittee on Environment
House Energy and Commerce Committee

Dear Chairman Shimkus:

Thank you for allowing me the opportunity to appear before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled, "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Attached please find my responses to the questions for the record. Please do not hesitate to reach out to me if I can provide any assistance.

Sincerely,

Robin Puthusseril

Attachment

Answers to Questions for the Record

Following a Hearing Conducted by the House Energy and Commerce Committee,

Subcommittee on Environment,

"Advanced Biofuels Under the Renewable Fuel Standard:

Current Status and Future Prospects"

The Honorable John Shimkus

Question: ***Is there a potential future scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?***

Answer: I can only speak with respect to biodiesel. The short answer is it is very unlikely, in the near-to-medium term, for biodiesel to successfully compete and participate in the market without the Renewable Fuel Standard (RFS).

Whether biodiesel can successfully compete and participate in the market without the RFS will ultimately depend upon whether biodiesel prices become price competitive with diesel prices without the added value that renewable identification numbers (RINs) provide to biodiesel producers and blenders.

The only reason any fuel marketer incorporates biodiesel into his or her diesel supply is to make the end-product less expensive. Under current market conditions (i.e., current biodiesel prices and diesel prices), the RIN is a necessary value component to make these numbers work. In the absence of the RFS, the economics would only work if:

> (A) there are dramatic changes in market prices (i.e., biodiesel prices would have to substantially decrease and/or diesel prices would have to substantially increase). Given the price spread between a gallon of diesel fuel and a gallon of biodiesel today, it is very unlikely that such price changes will occur anytime soon; or
>
> (B) there are other government incentives to bridge the gap between biodiesel prices and diesel prices. This can come in the form of the federal $1.00/gallon biodiesel blenders' tax credit, and/or various state incentives. Even then, however, under current market conditions most of these incentives would have to be increased to incentivize fuel marketers such as myself to blend biodiesel if there is no RFS (and thus no RIN as a value-add).

Question: ***What are your views on the EPA's 2016 proposed Renewables Enhancement and Growth Support (REGS) Rule?***

As a diesel fuel retailer that does not sell ethanol blends greater than E10, the REGs proposal would not have a direct effect on my business. That proposal was geared more toward biofuels producers (wherein the rule was designed to enhance and improve the efficiency of biofuel

production), and it also included some provisions allowing for expanded availability of high-ethanol fuel blends for use in flex-fuel vehicles. Regulatory certainty for various biofuels, and for market participants seeking to produce and sell those fuels, is a good thing for fuel marketers such as myself because it provides us with a more diverse array of supply options at our disposal which can lower our costs of goods sold. Beyond these high level issues, however, the proposed rule would not materially change my business.

The Honorable Richard Hudson

Your written testimony points out that blending biofuels into the fuel supply will lower the price of the fuels sold and that this would not happen without the incentives in the RFS program. Your written testimony also notes that the RFS has been implemented properly until recently.

Question: ***Can you tell us what has changed with respect to the implementation and why you believe the program is not being implemented properly now?***

Answer: In recent months EPA has begun exempting certain refineries from their RFS obligations in a manner that functions as *de facto* cuts in the RFS renewable volume obligations (RVOs) and thus lowers the incentives to buy, blend, and sell renewable fuels.

Over the past year, EPA has granted exemptions to an unprecedentedly large number of refineries: from 2015 to 2017, the number of requested exemptions more than doubled from 15 to 34. In 2015, EPA only granted 7 of the 15 petitions, while for 2017, EPA has granted 29 of the 34 petitions as of August 7, 2018. Furthermore, the volume obligations waived in 2015 equaled 292.5 million RINs, while the obligations waived so far for 2017 total 1.46 *billion* RINs.[1] This is almost five times the number of RINs waived in 2015, despite EPA processing only twice the number of waiver requests. There have been no market or other policy changes to justify this dramatic increase in waivers. (EPA officials frequently cite a court case (*Sinclair Wyoming Refining Co. v. EPA*, No. 16-9532 (10th Cir. Aug. 15, 2017)) from late 2017 as "tying their hands" and requiring them to grant the waiver requests; this is not true. That case simply stands for the proposition that the waivers cannot be withheld in the absence of a demonstration that a refinery would go bankrupt but-for receiving a waiver.)

Clearly, more refineries—including refineries that may not be truly small or facing disproportionate economic hardship—are applying for and being granted waivers. This is severely undermining the RFS and the RIN market. When these waivers are issued retroactively (i.e., for compliance years for which RVOs have already been finalized), as they have been, they function as de facto cuts in the RVO. Refineries that have not received waivers continue to have

[1] *See* EPA Letter to Representative Dave Loebsack (D-IA) regarding small refinery exemptions, (August 7, 2018) accessed at https://loebsack.house.gov/uploadedfiles/8.7.18_epa_sres_under_rfs.pdf

their static obligations, while refineries that do receive waivers have their obligations cut by an amount commensurate with the waiver they have received.

This depresses the price of RINs as refineries that have their obligations waived can sell all of their RINs in an open market, and the increased supply of credits diminishes the credits' value. This in turn inhibits fuel marketers' abilities to lower their costs of goods sold by blending biodiesel and separating RINs, thereby diminishing overall demand for biodiesel and other advanced biofuels.

In addition, and of utmost concern, EPA has granted these waivers without providing any basic information to RIN market stakeholders; market participants are not told when waivers are given, the volume quantity that is waived, or the refineries that receive the waivers, which distorts the market. As a practical matter, when waivers are issued in secret, waiver recipients are given an inequitable advantage over other market participants by being permitted to sell RINs based on asymmetrical information with respect to the RINs' value. That is to say, refineries that have been granted waivers do not have to inform anyone and can begin trading on the market at higher RIN values until the market is able to examine activity and adjust RIN values downward accordingly. Clearly EPA's current handling of the waivers is at best patently inequitable; at worst, it comes perilously close to government-sanctioned market manipulation.

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FIFTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

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August 21, 2018

Mr. Randy Howard
CEO
Renewable Energy Group
416 South Bell Avenue
Ames, IA 50010

Dear Mr. Howard:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

Responses for the record from Randy Howard

1. What are the main regulatory barriers that are preventing the growth of Advanced Biofuels in America?

The main barrier to the growth of Advanced Biofuels has been the inconsistency to which the RFS has been enforced and the uncertainty created by continued attacks and, until recently, inability to move the annual RVO's in a timely and consistent manner. Additionally, there are a number of pathways that have been under consideration for a prolonged period of time at the EPA that would help provide for additional feedstocks and higher volumes of advanced biofuels. Also, EPA must look at how the expansion of feedstocks for advanced biofuels have significantly enhanced value-added agriculture, as well as added value to rural economies and the transport industry. It is wrong for EPA to only consider what effect the RFS has on the petroleum industry. Congress intended the RFS to have benefits beyond the energy sector, and those benefits are well documented. Biodiesel and renewable diesel are the best examples of how the RFS is achieving the congressional intent of this right-thinking policy and we can do so much more with regulatory improvement and certainty.

2. Is there a potential scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?

The intent of Congress with the RFS was to create and foster an alternative to petroleum fuels that would enhance our energy and environmental security. While biodiesel and renewable diesel are doing just that in filling the vast majority of the Advanced Biofuel category, both are still very young industries, especially renewable diesel. Consistent federal policy that will allow these advanced biofuels to better establish the infrastructure and production levels for long term sustainability are still necessary to fulfill the full congressional intent of the RFS. The transportation fuels market is not a free market and has not been for a century. It has been a petroleum monopoly. The RFS has helped open the transportation fuels market to renewable fuels, despite constant opposition and misinformation by the petroleum industry, which has kept us from seeing the full potential of advanced biofuels. This is why this forward looking policy should be enhanced, not pulled back.

3. What are your views on the EPA's proposed Renewables Enhancement and Growth Support (REGS) Rule?

The REGS proposal is a good start to providing improved regulatory certainty and future feedstock development in Advanced Biofuels. It is unfortunate that the EPA has held back the rule-making process on the REGS rule and we are hopeful that they can soon resume work on this very important issue.

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FIFTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

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August 21, 2018

Mr. Brooke Coleman
Executive Director
Advanced Biofuels Business Counsel
100 City Hall Plaza; Suite 305
Boston, MA 02108

Dear Mr. Coleman:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

The Honorable John Shimkus

1. What are the main regulatory barriers that are preventing the growth of Advanced Biofuels in America?

2. Is there a potential future scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?

3. What are your views on the EPA's 2016 proposed Renewables Enhancement and Growth Support (REGS) Rule?

The Honorable Richard Hudson

1. In 2007 RFS envisioned advanced biofuels eventually overtaking first generation biofuels and comprising most of the qualifying fuels in the program-- 21 billion gallons out of 36 billion by 2022. Why haven't we met that projection and do you believe we will?

You mention in your testimony that technology is commercially ready to produce up to 75 billion gallons of cellulosic biofuels.

2. What technical feasibility issues stand in the way of deploying this technology?

3. What are the economic feasibility issues that are presented by this technology?

4. What will be the price and quality impact to consumers from this fuel?

QUESTIONS FROM THE HONORABLE JOHN SHIMKUS

1. What are the main regulatory barriers that are preventing the growth of Advanced Biofuels in America?

Thank you for the question. Because motor fuel markets are regulated markets – as opposed to free markets – the growth of advanced biofuels is highly sensitive to regulatory market signals. The biggest regulatory issue in the 2013-2016 timeframe was EPA's failure to enforce the law (i.e. set and enforce annual blending requirements). We appreciate that EPA is now enforcing the program on schedule. However, the growth of advanced biofuels depends on resolving additional issues:

a. Fuel Registration – To be RFS-eligible, each advanced biofuel plant must register its fuel (to certify compliance with an RFS-eligible pathway) with EPA. There is an ongoing logjam at EPA when it comes to fuel registration for key commercial-ready technologies. For example, numerous companies are ready to commercialize cellulosic ethanol made from corn kernel fiber at existing corn ethanol plants across the country. EPA must be able to differentiate ethanol made from corn starch and corn fiber at the same plant to track RFS compliance. It would be

unrealistic to expect EPA to adopt compliance protocols for new technologies overnight. However, some technologies have been waiting for fuel registration for two years or more. We are told that some applicants have not received registrations for the same technology already approved at a different production facility. It appears that EPA is holding up all corn fiber registrations to resolve technical issues involving individual registrations, based on the fact that none have come through in some time. The technical questions being looked at by EPA are the right ones to focus on. However, the regulation allows individual registrations to be approved via peer-review (i.e. using outside expertise) if EPA has not yet completed a uniform protocol. The idea is to prevent new technologies from "dying on the vine" while EPA establishes cross-sector eligibility protocols. Because large investments have been made, it is absolutely critical that EPA move quickly on fuel registrations. There is a very real risk that some companies could fail – or go overseas – if they cannot get their product registered for market. EPA staff have made great strides to resolve fuel eligibility issues in recent years. But it is critical to avoid delay among commercial-ready fuels during very challenging economic times in rural America.

b. Waivers and Exemptions - At its core, particularly regarding cellulosic/advanced biofuels, the RFS is an adjustable mandate that allows EPA to account for uncertainty associated with financial markets and the development of new technologies. Due to multiple market variables, we are now in a situation in which EPA has been issuing Small Refinery Exemptions (SREs) – thereby depressing the total RFS volumetric blending requirements. The issue with SREs is not that they are offered to refineries facing economic hardship; but rather, that they are now being offered to some of the largest, most profitable oil refineries in the world. The cumulative impact of SREs in recent years is a reduction in biofuel blending by ~2 billion gallons, across all fuel types. The practical effect of the overuse of SREs is to create a supply glut of RFS-eligible fuel, which in turn depresses biofuel prices, destabilizes the biofuels industry and reduces investment in next generation biofuels. While triggered by concern about RIN prices in the conventional biofuel pool, the trickle-down effect of the over issuance of SREs is very real. On top of SREs, EPA also issues cellulosic waiver credits (CWCs) allowing obligated parties to "paper out" of their cellulosic biofuel obligations (by buying credits for a set price). EPA's current approach to administering the cellulosic biofuel compliance pool is to provide a forecast of expected cellulosic biofuel production capacity together with the issuance of CWCs in a number equal to the Renewable Volume Obligation (RVO). In other words, if the annual RVO for cellulosic biofuels is 400 million gallons, obligated parties know that there will 400 million CWCs also available to them if they arrange to procure *zero* liquid cellulosic biofuels. EPA does not require obligated parties to show cause for needing CWCs. There is nothing in the regulation that requires obligated parties to make a good faith effort to secure liquid D3 gallons instead of CWCs on a year to year basis. As such, obligated parties have the option to buy a predictable, risk-free, condition-free, government-backed waiver as an alternative to buying liquid D3 gallons that would facilitate the RFS. Taken together, SREs and CWCs over-supply RFS markets, destroy biofuel demand and discourage investment in advanced biofuels. The Council recommends that EPA only issue SREs to small refineries facing real economic hardship. The Council has also asked EPA to provide some limitations on CWC issuance (e.g. limit the number of CWCs available to a percentage of actual production that year, require

obligated parties to certify that a good faith effort has been made to secure liquid cellulosic biofuels, etc.). These waivers do not need to be eliminated in order for advanced biofuels to succeed. But SREs and CWCs cannot be issued in such a way as to destroy demand.

c. Unnecessarily Constrained Markets – The Council represents companies producing a wide variety of advanced biofuels and chemicals, including cellulosic ethanol, biodiesel, biogas and bio-jet fuel. On the ethanol side, we represent some of the largest cellulosic ethanol – and advanced biofuel enzyme – production facilities in the world. Unnecessarily constrained markets for any of these advanced biofuel types discourages investment and drives innovation to foreign markets where market demand is more dependable. The best example of unnecessary regulatory constraint is the one related to ethanol blending and Reid Vapor Pressure (RVP). RVP parity is well-understood to be sought by the first-generation ethanol industry. However, advanced ethanol needs market head room to attract investment and grow. We are pleased that the Trump Administration is moving forward with plans to create RVP parity for higher ethanol blends. This one regulatory clarification would: (a) provide instant downward pressure on D6 RIN prices, which in turn would provide regulatory relief for petroleum refineries choosing to buy RINs instead of blending renewable fuels; (b) create instant market headspace for second-generation ethanol producers, who need to show growing ethanol markets to optimize investment in cellulosic biofuels; (c) unleash a new wave of innovation and manufacturing across America as investment flows into second-generation ethanol; and, (d) increase consumer choice at the pump with a cheaper, domestically-produced motor fuel to keep fuel prices down and money in the pocket of American consumers. Some environmental NGOs have argued that the cellulosic ethanol industry does not need a growing overall ethanol marketplace to succeed since second generation ethanol can theoretically displace first-generation ethanol in a constrained marketplace. This is a well-meaning but illogical argument for two primary reasons. First, as shown in a recent Third Way report, most cellulosic ethanol first movers are also first-generation ethanol producers.[1] As such, any policy that requires second-generation ethanol production to displace first-generation ethanol essentially requires cellulosic ethanol first movers to cannibalize their current business model. Ethanol companies are not going to innovate to undercut their own existing technology any more than solar and wind companies would invest hundreds of millions of dollars in better panel and turbine technology if they were only allowed to displace existing solar panels and wind turbines. Second, the primary objective of U.S. ethanol policy – embodied in part by the Energy Independence and Security Act of 2007 – is to reduce the use of foreign oil (i.e. energy independence and security rather than independence from U.S. production of first-generation biofuels). Many of the proponents of the replacement of first-generation ethanol with second-generation ethanol cite climate change concerns as the basis of the position (i.e. because cellulosic ethanol has a better carbon footprint than corn ethanol). However, it is unclear how it is more prudent climatologically to displace corn ethanol (recently assessed by USDA to be 43 percent better than petroleum on a

[1] See http://www.thirdway.org/report/cellulosic-ethanol-is-getting-a-big-boost-from-corn-for-now

full lifecycle basis) rather than petroleum derived from tar sands (~20 percent more carbon intensive than average petroleum) or other increasingly carbon-intensive oil types with cellulosic ethanol.[2]

2. Is there a potential future scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?

Thank you for the question. The RFS is not a distortive mechanism on an otherwise price-driven, free market. Global oil and domestic motor fuel markets are not free markets. The RFS is a corrective mechanism that opens up the petroleum supply chain and provides an economic incentive to blend increasing amounts of biofuels. To illustrate the point, ethanol is currently the cheapest form of octane in the marketplace by more than $1 per gallon. And yet, oil companies are not using more than 10 percent ethanol. If the ethanol industry had the privilege to compete based on price – i.e. free of government intervention – then higher ethanol blends like E15 (certified for use in 95 percent of the passenger vehicles on the road today) would be in high demand. Instead, the oil industry generally only uses as much ethanol as they are forced to by energy security and environmental policies. Ethanol prices are at historic lows due to over-supply in a constrained marketplace. In theory, a free market is conceivable. However, it would require addressing the open price-fixing collusion that is the mission of the Organization of the Petroleum Exporting Countries (OPEC). It would require eliminating inequities in the U.S. tax code that favor oil and gas exploration and production (e.g. percentage depletion allowance, expensing of intangible drilling costs, Master Limited Partnerships (MLPs), etc.). And it would require more aggressively enforcing laws designed to prohibit anti-competitive behavior at the retail level. Irrespective of the non-competitive nature of the marketplace, enacting laws to promote energy and economic security has always been a priority for federal lawmakers. The RFS is very effective at achieving these outcomes.

3. What are your views on the EPA's 2016 proposed Renewables Enhancement and Growth (REGS) Rule?

Thank you for the question. There are a number of important advancements contained in the REGS rule. We support EPA's ongoing efforts to include additional biofuels under the RFS (including but not limited to bio-intermediates, sustainable wood, etc.). On the bio-intermediates side, we do not think a separate compliance regime is necessary. Environmental regulations – especially those designed to displace petroleum products – should not be so burdensome as to discourage the intended outcome of the law. We very much support the inclusion of several new pathways, including but not limited to qualifying cellulosic biofuels made from fast-growing hybrid poplar and willow. Finally, we support and appreciate EPA's proposal to update its fuel regulations to define fuel blends containing 16 to 83 volume percent ethanol as ethanol flex fuel. Such as effort would help attract investment and increase demand for advanced ethanol, while also providing consumer choice at the pump and facilitating the statutory goals of the RFS.

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[2] See https://www.usda.gov/oce/climate_change/mitigation_technologies/USDAEthanolReport_20170107.pdf; http://www.businessinsider.com/canadas-oil-sands-produce-20-more-greenhouse-gases-2015-6; and, http://www.ibtimes.com/us-shale-oil-boom-when-it-comes-co2-emissions-not-all-crude-oil-created-equal-1843616.

QUESTIONS FROM THE HONORABLE RICHARD HUDSON

1. In 2007 RFS envisioned advanced biofuels eventually overtaking first generation biofuels and comprising most of the qualifying fuels in the program – 21 billion gallons out of 26 billion by 2022. Why haven't we met that projection, and do you believe we will?

Thank you for the question. The U.S. biofuels industry is little more than a quarter century old. And yet, it is now the one of the largest employers in the U.S. renewable *energy* sector by some estimates. For example, the International Renewable Energy Agency estimates that of the ~ 806,000 Americans employed by the renewable energy sector in the United States, more than 283,000 of them are employed by the liquid biofuels industry (more than any other renewable energy sector including solar and wind).[3] Other analysis shows higher U.S. renewable fuel employment numbers,[4] but the point is the same: the U.S. renewable fuel industry is a vital part of the U.S. manufacturing sector with the potential to do even more to reduce foreign oil dependence, create jobs and commercialize cleaner fuels.

The statutory vision of the RFS was for advanced biofuels to constitute 21 of 36 billion gallons by 2022 (~58 percent of the total). Today, advanced biofuels constitute roughly 4.88 of 19.88 billion gallons (~25 percent of the total). This is a tremendous achievement given the unexpected market and regulatory conditions we have faced since 2007, including but not limited to: (1) a 100-year recession starting almost immediately after the passage of RFS2 in 2007; (2) the more than two years it took for the (highly complicated) RFS rule/regulation to be finalized in 2010; (3) the non-enforcement of the RFS from 2013-2016; and, (4) the massive uncertainty and demand destruction stemming from midstream proposals to change the rules of the RFS (e.g. export allowance) and the huge uptick in Small Refinery Exemptions (SREs) issued in 2016-2018.

There have been some technical challenges and market shakeouts related to those challenges. However, we are now seeing the best technologies rise to the top. The challenge going forward is persevering through times of regulatory and policy uncertainty and getting to the part of the commercial learning curve that produces even better results. This latter point is an important one. Innovators can secure amazing advancements in the lab and in demonstration phases (e.g. 80 percent price reductions for the enzymes needed to produce advanced biofuels). But the last and arguably most critical stage of development comes as a direct result of replicating the successes at commercial scale; or more specifically, securing efficiencies that can only be achieved with economies of scale. That is where most early-commercial and commercial-ready cellulosic technologies are today. The cellulosic biofuels

[3] See http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Jobs_Annual_Review_2017.pdf and http://m.dailykos.com/story/2017/5/31/1667650/-U-S-needs-to-accelerate-growth-in-green-jobs-by-treating-climate-change-like-the-crisis-of-WWII.

[4] See https://fuelsamerica.org/resources/fuels-america-releases-new-footprint-analysis/.

industry will succeed in producing massive quantities of fuel if we can create more political stability around the program and clear regulatory and red-tape logjams at EPA.

You mention in your testimony that technology is commercially ready to produce up to 75 billion gallons of cellulosic biofuels ...

2. What are the technical feasibility issues that stand in the way of deploying this technology?

Thank you for the question. There is no "one issue fits all" when it comes to cellulosic biofuel technology. Some companies are already producing cellulosic biofuels at commercial scale in the United States, Canada, Europe and other regions. The closest thing to a universal challenge that we face is related to the "front end" of the biomass conversion process. My testimony referenced the National Renewable Energy Laboratory (NREL) estimates for the *potential* commercial capacity of cellulosic biofuels to illustrate the point that the United States contains massive quantities of cellulosic biomass material that could be converted into fuel energy without displacing existing markets. The challenge is in perfecting the technologies necessary to break down tough cellular plant material into more easily fermentable biomass. Some of the challenges are very easy to understand (e.g. dirt/stone in baled biomass) and take time to resolve. Others – e.g. variability in output – are more technical in nature. The RFS is the key to unlocking the potential of cellulosic biofuels because the investment flows backwards from the anticipated market opportunity created by the RFS. To illustrate, the oil fracking industry has testified before Congress that the key to making oil and gas fracking technology a commercial reality was advantageous federal tax provisions offered to oil and gas that allowed fracking innovators to recover the costs associated with failure and reinvest them into eventual success.[5] This tax certainty for oil and gas was a linchpin to success in the same way that the economic incentive to blend more biofuels (provided by the RFS) is the linchpin to the commercial deployment rates of cellulosic biofuels. As discussed above, innovators can secure amazing advancements in the lab and in demonstration phases (e.g. 80 percent price reductions for the enzymes needed to produce advanced biofuels). But the last and arguably most critical stage of development comes as a direct result of replicating the successes at commercial scale; or more specifically, securing efficiencies that can only be achieved with economies of scale. That is where most early-commercial and commercial-ready cellulosic technologies are today.

3. What are the economic feasibility issues that are presented by this technology?

Thank you for the question. The economics of advanced biofuels depends on many variables, including the cost of a barrel of oil relative to the production cost of advanced biofuels. Conventional ethanol is already $1 per gallon cheaper than wholesale gasoline. But the savings of using ethanol are more significant than that because the ethanol replacement cost of octane (i.e. the cost of alternative non-ethanol octane enhancers such as aromatics/alkylates, etc.) is higher than the wholesale cost of gasoline. Cellulosic ethanol – for example – is in some cases already cheaper than its competitors in the gasoline octane industry. The biggest challenge that we face as in industry is *irrespective of the economics* how do we convince our competitors in the oil industry to blend biofuels? Global oil and domestic motor fuel markets are not free markets. The RFS is a corrective mechanism that opens up the petroleum supply chain and provides an economic incentive to blend increasing amounts of biofuels. To

[5] https://archives-energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/Hearings/EP/20120913/HHRG-112-IF03-WState-HammH-20120913.pdf

illustrate the point, ethanol is currently the cheapest form of octane in the marketplace by more than $1 per gallon. And yet, oil companies are not using more than 10 percent ethanol. If the ethanol industry had the opportunity to compete based on price – i.e. free of government intervention – then higher ethanol blends like E15 (certified for use in 95 percent of the passenger vehicles on the road today) would be in high demand. Instead, the oil industry generally only uses as much ethanol as they are forced to by energy security and environmental policies. Essentially, the top slate of cellulosic biofuel technologies has achieved commercial-ready or early-commercial economics. But that achievement is different than convincing the oil industry to sign long-term offtake agreements to buy cellulosic biofuels. The RFS solves the latter problem.

4. What will be the price and quality impact to consumers from this fuel?

Thank you for the question. The price impacts are discussed above. The most common biofuel – ethanol – is almost $1 per gallon cheaper than gasoline as of November 2018. It is also important to note that – irrespective of pump price – more consumer dollars spent on domestically produced biofuel means more consumer dollar recirculation through state and national economies, more jobs and more economic growth.

Fuel quality is tightly regulated. Ethanol producers must produce to an ASTM specification, and conventional/advanced ethanol is chemically the same irrespective of feedstock. This is also true for biodiesel and renewable diesel. The obvious challenge going forward – if consumers are introduced to greater choice at the pump – is consumer education and the avoidance of misfueling. The risk reward ratio is good for the economy and the consumer, because the new fuels coming online today are either cheaper than gasoline (e.g. E15/E20) or recirculate more consumer dollars through U.S. economies (as opposed to being exported to OPEC countries) – or both. E15 blends, which are certified for use in ~95 percent of the vehicles on the road today but are not suitable for small engines, have an orange warning label next to the pump. Consumers should be familiar with looking before they pump as diesel fuels have been available on the same pump island for decades.

GREG WALDEN, OREGON
CHAIRMAN

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ONE HUNDRED FIFTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

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August 21, 2018

Mr. Collin O'Mara
President
National Wildlife Federation
1200 G Street; Suite 900
Washington, DC 20005

Dear Mr. O'Mara:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

Response from Collin O'Mara to the House Committee on Energy and Commerce
Subcommittee on Environment
Questions for the Record of the Hearing of June 22, 2018:
Advanced Biofuels Under the Renewable Fuel Standard

Thank you again for the opportunity to testify, and for the additional questions you have posed. My answers are contained below.

1. Is there a potential future scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?

The short answer is yes. American ingenuity and innovation have always offered new and emerging technologies and products an opportunity to succeed, even in the absence of mandates such as the RFS. However, advance biofuels are competing against not one, but two established products with powerful, mature industries behind them: petroleum fuel and first-generation biofuels. Therefore, if development of these alternative fuels remains a societal and governmental priority, then there will remain a need for some sort of government support or intervention to achieve market parity in a reasonable timeframe.

The experience of the RFS has demonstrated that its type of mandated consumption has failed to spur the development of a new industry. While an RFS-style mandate is one potential option for attempting to do so, in the presence of other types of support, the RFS would not be necessary. There are options available to improve or replace the existing structure to achieve this elusive goal. I will pose a few of these, without specifically endorsing any of them.

During the hearing, the idea of moving to a performance-based standard like California's Low Carbon Fuel Standard was discussed. Such an option would help drive investment to second-generation biofuels by giving them a clear market advantage over first-generation fuels while achieving the greatest environmental benefits.

Similarly, placing a price on carbon could drive investment into development of the cleanest fuels and away from petroleum and first-generation biofuels.

Finally, federal incentives in the form of investment tax credits, production tax credits, and/or consumer rebates, as well as meaningful federal investment in research and development, could help the advanced biofuels industry develop – particularly if coupled with other governmental regulations, preferences, or programs.

2. What are your views on the EPA's 2016 proposed Renewables Enhancement and Growth Support (REGS) Rule?

The National Wildlife Federation submitted comments to the proposed REGS Rule, which are included here in full as an attachment. We view all regulatory proposals through the lens of the potential impacts to wildlife populations and their habitats. Thus, these comments did not touch on the full scope of the proposal, but did point out several parts that could be problematic or damaging in this regard, and two proposals we supported. Specifically, the comments:

- Recommended careful consideration of the invasive potential of short-rotation poplar and willow species and denial of pathways that include varieties known to be, or at high risk of becoming, invasive;
- Opposed the expansion of lands eligible to produce poplar and willow from actively managed tree plantations to all agricultural lands;
- Supported maintaining the record keeping and reporting requirements for woody biomass and urged the Agency to apply these same requirements to row crops;
- Supported the use of separated food waste for the production of biomass-based diesel; and,
- Opposed the extension for consideration of applications for grandfathered facilities.

In general, we support the stated objective of the proposal, which is to modernize aspects of the RFS and its implementation, particularly in regards to advanced and alternative fuels. A number of the proposed changes would seek to expand the eligible sources of advanced and cellulosic fuels, which generally looks positive. However, we do not have the technical expertise to fully evaluate many of these changes. For instance, while we believe creating a system for providing renewable identification numbers (RINs) for electricity generated from renewable sources would be a useful step in what we see as the desired ultimate goal of replacing liquid fuels, we do not have specific comments on the best method for ascribing these RINs to the correct parties.

As our formal comments on the rule indicate, the National Wildlife Federation's primary concern is ensuring that new fuel pathways do not exacerbate competition with existing crop production for available land that drives the conversion of native and natural lands. Efforts to utilize "waste" materials can be a great option, so long as the approval process fully considers where that waste stream currently goes, and if diversion of that waste will necessitate additional crop production to replace it.

This concludes my responses to your additional questions. Please do not hesitate to contact me or my staff for additional information or clarification.

National Wildlife Federation
National Advocacy Center
1990 K St NW, Suite 430
Washington, DC 20036

Point of Contact:
David DeGennaro
Agriculture Policy Specialist
[redacted]

February 16, 2017

Ms. Catherine McCabe
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C., 20460

Submitted via regulations.gov

RE: Comments from the National Wildlife Federation (NWF) on U.S. Environmental Protection Agency's Proposed Renewables Enhancement and Growth Support Rule, Docket ID No. EPA–HQ–OAR–2016–0041-0002

Dear Acting Administrator McCabe:

The National Wildlife Federation is the nation's largest conservation organization with more than 6 million members and supporters and fifty state and territorial affiliates, representing hunters and anglers, birders and gardeners, and outdoor enthusiasts from across America. Our mission is to unite all Americans to ensure wildlife thrive in a rapidly changing world—and we work collaboratively to conserve habitat and waterways, promote our outdoor heritage, and connect the next generation with nature.

This proposed rule is wide-ranging, encompassing a vast array of topics. We will focus our comments on just a few pieces of the rule, though there are certainly many other parts in which we have a keen interest. In the comments below we will,

- Urge careful consideration of the invasive potential of short-rotation poplar and willow species and denial of pathways that include varieties known to be, or at high risk of becoming, invasive;

- Oppose the expansion of lands eligible to produce poplar and willow from actively managed tree plantations to all agricultural lands;
- Support maintaining the record keeping and reporting requirements listed at 40 CFR 80.1454(c) and (d) for these new pathways and urge the Agency to apply these same requirements to row crops;
- Support the use of separated food waste for the production of biomass-based diesel; and,
- Oppose the extension for consideration of applications for grandfathered facilities.

Comments are organized by section of the proposed rule.

VI. Renewable Fuels Produced from Short-Rotation Trees

Section (C)(7) Lifecycle Analysis of GHG Emissions – Risk of Invasiveness

The National Wildlife Federation thanks the Agency for continuing to consider invasiveness as part of RFS feedstock pathway determinations, and for specifically soliciting comments on mitigation of invasiveness risk for poplars and willows.

Under Executive Order 13112 (as amendment in 2016), federal agencies must "refrain from authorizing, funding, or implementing actions that are likely to cause or promote the introduction, establishment, or spread of invasive species in the United States unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

Based on this executive order, NWF believes that under the RFS, each feedstock species or variety (including hybrids) must individually be evaluated for invasive risk using weed risk assessments (WRAs) and the best available science. Based on the WRA results, those feedstocks or varieties at high risk of becoming invasive should not be approved as new pathways. For feedstocks that require further evaluation according to WRAs, we recommend that they be approved only on a pilot basis, with stringent best management practices required to reduce the risk of escape and ongoing monitoring and mitigation to assess invasiveness. Best management practices are also strongly recommended for low-risk non-native feedstocks to reduce risk.

We thank the agency for including clear definitions of short rotation hybrid popular and short-rotation willow in the proposed rule, as invasion risk differs substantially between species and varieties. While we are not familiar with all of the species and varieties listed and the invasive potential of each, we know that in invasion biology, the best predictor of whether a species will be invasive in a new habitat is whether that species has been invasive in other regions where it has been introduced. We encourage the agency to take into account this information in the decision-making about approved feedstocks. For example, we would be very concerned if *P. alba* were on the list as it is a non-native species that has been documented as invasive in some

regions; similarly we would be concerned about the inclusion of *Populus x canescens*, which is a hybrid of *P. alba and P. tremula.*

Additionally, we urge that *P. nigra* be removed from the list, since at least one variety, *P. nigra* var *italic*, is already a known invader. At the very least, we believe that the rule should specifically exclude *P. nigra* var *italic*. We also urge that *S. viminalis* be removed from the list, as the species is a harmful enough invader in Australia that research on biocontrol agents was deemed necessary. In general, we strongly recommend that sufficient effort be made to identify whether any others of the species listed that have been invasive elsewhere

Additionally, we are concerned that the substantial evidence of hybridization in both willow and poplar genera means that there is significant potential for any species on the list to hybridize with native species within these genera, which could have impacts on native species and habitats if the hybrids prove invasive. Given this risk, we would urge the Agency to focus only on native species in these genera, which would reduce invasion risk and potentially provide wildlife habitat.

If EPA moves forward with approving these species, we urge the Agency to include robust risk management requirements that are written with the guidance of the National Invasive Species Council and relevant federal and/or state agencies. Because of the potential of the species to hybridize with native species, we also recommend a particular focus in the risk management plan on mitigating potential impacts to local ecosystems should feedstocks hybridize with native species. Finally, we believe it is critical that risk management plans include plans and funding set aside for eradication of abandoned plantations or escaped hybrids.

Section (D)(3) Proposed Regulations – Registration, Recordkeeping, and Reporting Requirements

1. **Expansion of eligible lands for tree production.** EPA proposes altering the definition of an acceptable tree plantation for the purposes of producing "renewable biomass" as defined in the Clean Air Act so as to expand the eligible lands from only those that had been actively managed as tree plantations prior to December 19, 2007, to include any "land [that] was cleared and actively managed for any agricultural purpose" on that date.

   While we appreciate the Agency's attempt to increase the available land for growing the feedstocks necessary for production of cellulosic fuels in a way that honors the intent of the land clearing prohibition in the statutory definition of "renewable biomass," we are concerned that the result will be a similar end-run around that prohibition as has been documented with the growth of corn ethanol.

   The majority of land in agricultural production in 2007 mostly represents the land best suited

for that use. These are the most fertile lands being farmed by business-minded farmers for generations. Following the implementation of the RFS, millions of additional acres of land were converted to agricultural use – many for the very first time – a fact confirmed by scientific research and anecdotal evidence from across the country.[1] This conversion occurred in spite of the law's prohibition on conversion and the Agency's aggregate compliance approach to enforcing it. Allowing woody biomass grown on this same base of agricultural land could once again displace the crops being grown there, leading to the conversion of land elsewhere to replace the production being supplanted. Beyond violating the intent of the "renewable biomass" definition, this indirect conversion would take place on lands less well-suited for agriculture, as was demonstrated to have occurred after 2007. These converted lands, by a wide margin, have poorer quality soil and in many cases are highly important for wildlife habitat and protection of water bodies. Thus, this definitional change could result in increased agricultural activity in ecologically sensitive areas, affecting wildlife populations, drinking water supplies, and outdoor recreation.

2. **Record keeping and reporting requirements for planted poplar and willow.** As noted in the proposal, these trees fall outside of the aggregate compliance approach applied to field crops, and are subject to the more stringent reporting requirements listed at 40 CFR 80.1454(c) and (d). These sections of the Code require producers of renewable fuel made from trees to "keep records that serve as evidence that the land from which the feedstock was obtained was cleared prior to December 19, 2007 and actively managed on December 19, 2007." The proposal would apply these same requirements to production of biofuels produced from poplar and willow.

   We agree with this proposal. We have repeatedly urged the Agency to abandon its aggregate compliance approach to crops in favor of more stringent requirements such as those applied to woody biomass. Aggregate compliance has been an empirical failure, and we would urge the Agency to expand the record keeping and reporting requirements listed at 40 CFR 80.1454(c) and (d) to all renewable fuels covered by the RFS.

VIII. Other Revisions to the RFS Program

Section C – Allowing Production of Biomass-Based Diesel From Separated Food Waste

We support the proposal to allow for separated food waste as a feedstock for qualifying biomass-based diesel. Production of biodiesel from food waste is highly preferable to production from virgin vegetable oils and will lead to less demand for land resources to grow crops such as soybeans, as well as less demand for imports such as palm oil.

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[1] Lark, T. J., Salmon, J. M. & Gibbs, H. K. Cropland expansion outpaces agricultural and biofuel policies in the United States. *Environmental Research Letters* **10**, 044003 (2015).

Section D – Registration of New and Expanded Grandfathered Volumes

We oppose the proposal to move the final deadline for submission of grandfathering applications from the current deadline of July 1, 2013, to a new deadline of November 16, 2016. The proposal makes no compelling case for the need to continue to process and admit facilities or expansions at this time – nearly 10 full years after enactment of the law. The proposal does, however, make clear the difficulty of verifying and approving these applications given such a long lead time. Presumably, any biofuel refineries in operation or whose construction was completed by December 19, 2010, must have been producing biofuels in the subsequent years, and there can be no logical reason they did not submit grandfather applications in a timely manner. At this point in time, with the statutory volume of conventional biofuel already having been achieved, it serves the RFS program no purpose to permit additional volume that will only weaken the environmental performance of the program. We hold that any facilities wishing to enter into the program today must be fully compliant with the law's minimum requirement of a 20 percent reduction in greenhouse gas emissions relative to petroleum fuel. Extending the deadline for applications will only create unnecessary work for the Agency, which is already failing to meet many of its own statutory deadlines, and serve to undermine Congress's intent to reduce greenhouse gas emissions.

We thank you for your consideration of these comments and stand ready to answer any questions or provide further assistance as needed.

Sincerely,

David DeGennaro
Agriculture Policy Specialist
National Wildlife Federation

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August 21, 2018

Mr. Luke Morrow
Managing Director
Morrow Energy
P.O. Box 61447
Midland, TX 79711

Dear Mr. Morrow:

Thank you for appearing before the Subcommittee on Environment on June 22, 2018, to testify at the hearing entitled "Advanced Biofuels Under the Renewable Fuel Standard: Current Status and Future Prospects."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Tuesday, September 4, 2018. Your responses should be mailed to Kelly Collins, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to kelly.collins@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment

cc: The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment

Attachment

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September 4, 2018

Attn: The Honorable John Shimkus

From: Luke Morrow

Reference: Additional Questions

Chairman Shimkus:

Below are the answers to the questions posed in your August 21 letter.

1. Is there a potential future scenario where Advanced Biofuels could successfully compete and participate in the market without the Renewable Fuel Standard?

Thank you Mr. Chairman for the question.

Morrow Renewables is a renewable natural gas (RNG) company and member of the Coalition for Renewable Natural Gas. RNG qualifies as an advanced or cellulosic biofuel under the Renewable Fuel Standard (RFS), depending on the originating feedstock of the gas. I am happy to answer your question as it relates to RNG.

The RNG industry takes untreated biogas captured from landfills, wastewater facilities and anaerobic digesters and refines it to meet the fuel quality standards of geologic natural gas. The resulting RNG is fully fungible in existing pipeline infrastructure and can be used in natural gas vehicles without any restrictions.

Natural gas is a commodity, and like any commodity, its price fluctuates based on a host of factors that impact the marketplace. Changes in supply, global demand or government policy can all have an impact on the price of natural gas.

Currently, natural gas prices are quite low. The low price of natural gas is helping to spur adoption of natural gas vehicles, particularly in heavy-duty applications, and natural gas fueling infrastructure. Natural gas currently trades near $2.85 per mmbtu. By comparison, oil is currently priced around $68.42 per barrel. Since there are 5.1 mmbtu in a barrel of oil, this equates to oil at $13.42 per mmbtu. NGVAmerica[1] estimates that the payback period for a natural gas vehicle is 18-24 months due to lower fuel and maintenance costs. Innovative

[1] NGV America is a national organization that represents more than 200 companies, environmental groups, and government organizations interested in the promotion and use of natural gas and biomethane as transportation fuels.

private sector companies are aggressively pushing to expand natural gas fueling infrastructure nationwide, which will help expand market penetration for natural gas vehicles.

The RFS, in its current form, was enacted as part of *the Energy Independence and Security Act of 2007* (EISA)(P.L. 110-140), yet RNG has only qualified as cellulosic biofuel since 2014. In this limited time, RNG production for use as transportation fuel grew by more than 620%. The ability to generate a RIN helps make RNG price competitive as a transportation fuel in the growing marketplace for natural gas vehicles, even in a scenario where natural gas prices are near historic lows.

Natural gas markets are dynamic, and over time, changes in marketplace dynamics will impact the price of natural gas. Predicting the future performance of commodity markets is an uncertain proposition, but it is fair to observe that increased global demand for natural gas or changes in government policy have the potential to provide upward pressure on natural gas prices. This combined with increased efficiencies we are witnessing in the RNG industry will make RNG more competitive in the marketplace.

A stable RFS policy helps attract the private sector investment and yields efficiencies that will enhance the RNG industry's ability to produce transportation fuel from waste sources such as landfills, wastewater facilities and anaerobic digesters at lower cost. This is an outcome consistent with the underlying environmental and energy policy goals of the RFS program.

2. What are your views on the EPA's 2016 proposed Renewables Enhancement and Growth Support (REGS) Rule?

Thank you Chairman Shimkus for this question regarding the EPA's proposed REGS rule.

As you know, the proposed REGS rule is broad in scope and addresses a host of issues pertaining to the RFS program. That noted, there is one component of the proposed rule that I would like to highlight for the subcommittee.

Morrow Renewables and the RNG Coalition are concerned about the EPA's proposal for Section 80.1478 "Requirements for biogas producers." The proposed language calls for biogas producers whose biogas is used to produce CNG/LNG to register either as a renewable fuel producer or a bio-intermediate producer. The EPA further proposes, in Section VII.K of the proposed regulation, that the biogas producer will be defined as "the owner of the landfill, municipal wastewater treatment facility digester, agricultural digester or separate MSW digester that produces biogas used to produce... CNG/LNG."

This proposed definition of "biogas producer" and registration requirement could have serious adverse consequences on the RNG industry as it is currently structured. In the RNG industry,

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the entity that produces vehicle fuel quality RNG from a raw biogas resource is rarely if ever the same entity that owns the raw biogas resource (e.g. landfill, digester, sewage lagoon). For example, landfill owners generally contract with third party renewable energy companies that collect the raw biogas generated by the landfill and process it into a pipeline or vehicle fuel quality energy product. Generally, the landfill owner is agnostic about the market that the RNG product is sold into and is paid a royalty by the renewable natural gas production company.

Requiring the landfill, wastewater treatment facility, or digester owner to register under the RFS may prove impossible. For such owner, their business is collecting and disposing of trash, or cleaning wastewater, or farming – and the renewable natural gas production facilities located at their site are a very small consideration. The site owner is unlikely to agree to register and accept liability under the RFS, particularly when they have no control or insight into the downstream sale of the RNG product by the RNG producer.

This proposal would create new liabilities and significant burdens on municipalities, landfill owners, farmers, and small businesses that have previously only contracted to allow an RNG developer onto their property for collection and processing of biogas. Such an interpretation would be tantamount to requiring every farmer that grows an ear of corn for eventual processing to ethanol to register under the program. It is simply not practical or prudent.

Please feel free to contact me with any other questions.

Thank you,

Luke Morrow

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