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OVERVIEW OF THE RENEWABLE FUEL STANDARD: GOVERNMENT PERSPECTIVES

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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OVERVIEW OF THE RENEWABLE FUEL STANDARD: GOVERNMENT PERSPECTIVES

WEDNESDAY, JUNE 26, 2013

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

The subcommittee met, pursuant to call, at 2:34 p.m., in room 2123, Rayburn House Office Building, Hon. Ed Whitfield (chairman of the subcommittee) presiding.

Present: Representatives Whitfield, Scalise, Hall, Shimkus, Terry, Burgess, Latta, Cassidy, Olson, Pompeo, Kinzinger, Griffith, Barton, Upton (ex officio), Rush, McNerney, Tonko, Engel, Green, Doyle, Barrow, Castor, Matheson, Welch, and Waxman (ex officio).

Staff Present: Nick Abraham, Legislative Clerk; Charlotte Baker, Press Secretary; Sean Bonyun, Communications Director; Matt Bravo, Professional Staff Member; Allison Busbee, Policy Coordinator, Energy & Power; Tom Hassenboehler, Chief Counsel, Energy & Power; Ben Lieberman, Counsel, Energy & Power; Nick Magallanes, Policy Coordinator, CMT; Mary Neumayr, Senior Energy Counsel; Chris Sarley, Policy Coordinator, Environment & Economy; Greg Dotson, Minority Staff Director, Energy and Environment; Kristina Friedman, Minority EPA Detailee; Caitlin Haberman, Minority Policy Analyst; Bruce Ho, Minority Counsel; Elizabeth Letter, Minority Assistant Press Secretary; and Alexandra Teitz, Minority Senior Counsel, Environment and Energy.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

Mr. WHITFIELD. I would like to call the hearing to order. The topic of today's hearing is an "Overview of the Renewable Fuel Standard: Government Perspectives." As you know, this is one of those issues where we have a lot of different viewpoints on this important issue. And we have not really revisited the Renewable Fuel Standard since it was last expanded in 2007. And so we began these hearings, I don't think we have any preconceived thoughts. We know that there are some areas of concern, and it is time for us to simply revisit and re-explore and look at the original expectations of this program.

I think we would all acknowledge that the landscape has changed significantly since the RFS was revised in 2007. And there was a long list of energy policy assumptions back then that differ significantly from the realities of 2013. Perhaps the biggest unex-

pected development has been the decline in gasoline usage over the last 5 years. Certainly automobiles are more efficient. We have had a slow economy. And this has led to a number of issues we will address today, including the so-called blend wall and the approval of E15.

We have also learned firsthand how the RFS implementation would be affected by drought that reduced corn yields, ha occurred last summer.

So we have a unique opportunity looking back on several years now of practical experience with the RFS and it is time to ask what that experience has taught us. It is also time to project what the future might hold for the RFS as we continue to implement the stringent and increasing targets.

We began this process, as many of you know, many of you participated in it, by issuing a series of bipartisan white papers on the major topics associated with the RFS—the blend wall and fuel compatibility issues, agriculture sector issues, environmental concerns, energy policy considerations—and we are set to release the final white paper that deals with implementation and enforcement issues.

The wide-ranging stakeholder responses to the questions posed in these white papers attest to the fact that many people have been affected by the RFS and that we need to be mindful of all of its direct and indirect impacts.

We have a distinguished panel of witnesses with us today, and I am going to introduce them after the opening statements. And at this time, I would like to yield as much time as he may consume the gentleman from Texas, Mr. Barton, for the purposes of an opening statement.

[The prepared statement of Mr. Whitfield follows:]

PREPARED STATEMENT OF HON. ED WHITFIELD

As many of you know, the renewable fuel standard, or RFS, was created by Congress in 2005, and was greatly expanded in 2007. The RFS is a policy that originated in this committee, which is why I believe we now have an obligation to assess how it is going. That is the reason for today's hearing, and we are pleased to be joined by three agencies that have a hand in implementing the RFS and in studying its impacts—the Environmental Protection Agency, the Energy Information Administration, and the Department of Agriculture.

I've met with stakeholders on all sides of the issues, and I think it's time to take a hard look at the RFS and compare our original expectations for the program with the actual experience. I think we'll find that in some respects the RFS is going well, but in others there are emerging issues and room for improvement.

The landscape has changed significantly since the RFS was last revised in 2007. Indeed, there is a long list of energy policy assumptions back then that differ greatly from the realities of 2013.

Perhaps the biggest unexpected development has been the decline in gasoline usage over that past 5 years. As a result, we are facing the challenge of mixing the specified volumes of renewable fuels into a significantly smaller pool of gasoline. This has led to a number of issues we will address today, including the so-called blend wall and the approval of E–15.

We have also learned, first hand, how the RFS implementation would be affected by a drought that reduced corn yields, as occurred last summer.

In other words, we can now look back on several years of practical experience with the RFS, and it is time to ask what that experience has taught us. It is also time to project what the future might hold for the RFS as we continue to implement its stringent and increasing targets.

We began this process by issuing a series of bipartisan white papers on the major topics associated with the RFS—the blend wall and fuel compatibility issues, agri-

cultural sector issues, environmental concerns, energy policy considerations, and we are set to release the final white paper that deals with implementation and enforcement issues. The wide-ranging stakeholder responses to the questions posed in these white papers attests to the fact that many people have been affected by the RFS, and that we need to be mindful of all of its direct and indirect impacts.

And today, we are initiating our first hearing on the RFS, beginning with the agencies most knowledgeable about the program's implementation.

The end result that we want is an RFS that can work for everyone involved, be it farmers, renewable fuel producers, refiners, and automakers. And most importantly, we want a policy that benefits the American driving public. The first step is to assess where we are with the program, and I look forward to learning more from our witnesses.

# # #

Mr. BARTON. Thank you, Mr. Chairman.

In 2005, I was chairman of the committee and chairman of the conference committee that passed the Energy Policy Act, and I supported the inclusion of Renewable Fuel Standard in that bill. In 2007, I was the ranking member on the committee, and I strongly opposed the bill in 2007 that greatly expanded it. So I guess you could say I am 50–50 and I have been on that both sides of the issue.

I don't want there to be any misunderstanding today, however: The current law, as it is, is unworkable and unsustainable, and I support total and full repeal. I think it has outlived its usefulness.

I want to quote from the first line of the Energy Information Administration's written testimony: "The RFS program is not projected to come close to achievement of the legislated target." End quote.

So I welcome this hearing. I encourage the subcommittee and the full committee under the leadership of Chairman Upton to take a serious look at this. And I am hopeful that at some time this year we can move a repeal bill.

And with that, I still have a minute to go, so I am happy to yield to whoever the chairman would like for me to yield to.

Mr. WHITFIELD. Does anybody want the last 40 seconds?

OK. I yield back balance of my time. At this time, recognize the gentleman from Illinois, Mr. Rush, for a 5-minute opening statement.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. I want to thank you, Mr. Chairman, for holding this important hearing on the RFS.

Over the course of the past year my office has literally taken dozens of meetings on this critical topic, most from proponents who support the RFS as it is, as well as some of the opponents who would like to see the RFS either modified or repealed altogether.

Mr. Chairman, for stakeholders from my home State of Illinois there are few energy issues as important as the matter of the RFS. I have always been very supportive of this policy because I believe since its inception it has achieved many of the goals that it was first enacted to do.

During the debate on the Energy and Policy Act of 2005, when the RFS was first established, and subsequently in the Energy

Independence and Security Act of 2007, when the policy was significantly modified and expanded, there was always strong bipartisan support for the RFS. Members of both sides of the aisle touted the potential benefits of enacting a Renewable Fuel Standard, which included reducing U.S. dependence on oil, enhancing energy security, bolstering the agricultural economy, and addressing the challenges of climate change by reducing greenhouse gas emissions from the transportation sector.

Today, I believe the RFS has been successful in meeting each of these objectives while also helping to drive job creation and economic investment. For instance, the RFS has played a key role in helping the American ethanol industry support 400,000 jobs nationwide, including 54,000 jobs in my State of Illinois alone, and it has resulted in over $40 million in economic activity.

Mr. Chairman, the RFS has indeed helped to make us more energy secure with America's ethanol industry now producing 10 percent of the Nation's vehicle fuel supply, helping to reduce our independence on foreign oil by 25 percent since 2005. Additionally, the octane from ethanol will also be a key component in helping auto manufacturers meet their CAFE standards as they turn towards downsized, turbocharged engines with increased combustion rations that will need higher octane fuel, such as ethanol, to meet new mileage standards.

Mr. Chairman, as President Obama stated yesterday, we cannot continue to overlook the fact that over the past year and a half alone all across our Nation we are seeing more frequent record-breaking temperatures and history-making extreme weather events, including severe wildfires, hurricanes, tornadoes, and flooding, events that scientists tell us all are associated with manmade climate change.

So today, more than ever, it is essential to move towards an energy policy that requires an even greater reliance on renewable sources of energy and alternative fuels, as the RFS mandates, and away from carbon-intense fossil fuels that emit dangerous levels of greenhouse gases and contribute to climate change.

Mr. Chairman, I am glad that we are having this hearing today, one of several, where we can lay out all the facts, including both the opportunities and the challenges to implementing the RFS as currently drafted, and we can work to find common ground on this issue moving forward.

Thank you, I yield back the balance of my time.

Mr. WHITFIELD. The gentleman yields back.

At this time recognize the chairman of the full committee, Mr. Upton, for a 5-minute opening statement.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Thank you, Mr. Chairman.

It is an exciting time for energy policy and for the possibilities created by our domestic energy abundance. Last week, this subcommittee held two hearings, one on the Nation's potential for increased energy exports, and the other on the benefits of affordable energy to the domestic manufacturing sector.

Just a few short years ago, many would have scoffed at the suggestion that America could produce enough domestic energy to expands its exports or that low natural gas prices would induce a manufacturing renaissance, but it is happening, and it can continue to happen if we have the right policies in place. And while we strive to make good use of the Nation's coal, oil, and natural gas, we also have to allow for renewable energy to be part of that mix. But we need to make sure that it is done right, and that is why we are undertaking our deliberate review of the Renewable Fuel Standard.

The committee started the review process with a series of bipartisan white papers on the RFS. Each white paper highlighted a particular subtopic and solicited input from stakeholders. And as you can imagine, the response has been overwhelming, and I thank Ranking Member Waxman and his staff for working cooperatively with us and the commenters for their participation as well. And I can assure them that their input will, in fact, help us inform our process.

And now we move on to our first hearing, which is going to be the committee's first hearing specifically devoted to the RFS since the program was last revised in 2007. The purpose of this initial hearing is essentially to perform a checkup on the RFS: What has gone according to plan and what has not. No policy is certainly perfect, especially one that is now more than 5 years old. It is time to assess the RFS in light of what we now know.

Today, we commence our effort with three Federal agencies that play a role in putting the RFS into action. Congress gave the reins of the program to EPA, and the Agency's responsibilities are indeed extensive. Several of these responsibilities require input from other agencies, including the Energy Information Administration as well as the Department of Agriculture.

This hearing is going to cover a number of issues. I am particularly mindful of the impact of the RFS on the auto industry and on our car owners. Fuels and vehicles operate as a system, and we need to make sure that provisions in the RFS are compatible with existing vehicles as well as the new cars and trucks that are going to be manufactured and sold in the years ahead.

One of the things that Congress could not have anticipated back in 2007 is the very ambitious CAFE/GHG standards that are going to require a near doubling of the fuel economy by 2025. Harmonizing these rules with the requirements of the RFS is just one issue for which a constructive debate is needed.

The white papers and having today's hearing have gotten the discussion off to a positive start. I look forward to working with every one of our members on this committee in the coming weeks as we continue to weigh our work in oversight towards addressing the very real issues that implementation of the RFS presents going forward.

And I don't know if there are other Republican members on my side that wish the balance of my time. But seeing none, I yield back.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

This is an exciting time for energy policy and for the possibilities created by our growing domestic energy abundance. Last week, this subcommittee held two hearings, one on the nation's potential for increased energy exports and the other on the benefits of affordable energy to the domestic manufacturing sector. Just a few short years ago, many would have scoffed at the suggestion that America could produce enough domestic energy to expand its exports, or that low natural gas prices would induce a manufacturing renaissance. But it is happening, and can continue to happen if we have the right policies in place.

And while we strive to make good use of the nation's coal, oil, and natural gas, we also need to allow renewable energy to be a part of the mix. But we need to make sure that it is done right, and that is why we are undertaking our deliberate review of the renewable fuel standard (RFS).

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Today we commence our effort with three federal agencies that play a role in putting the RFS into action. Congress gave the reins of this program to EPA, and the agency's responsibilities are extensive. Several of these responsibilities require input from other agencies, including the Energy Information Administration and the Department of Agriculture.

This hearing will cover a number of issues, but I am particularly mindful of the impact of the RFS on the auto industry and on car owners. Fuels and vehicles operate as a system, and we need to ensure that provisions in the RFS are compatible with existing vehicles as well as the new cars and trucks that will be manufactured and sold in the years ahead.

One thing Congress could not have anticipated back in 2007 is the very ambitious new CAFE/GHG standards that will require a near doubling of fuel economy by 2025. Harmonizing these rules with the requirements of the RFS is just one issue for which a constructive debate is needed.

The white papers and having today's hearing have gotten the discussion off to a positive start. I look forward to working with all of the members of this committee in the coming weeks as we continue our oversight and work toward addressing the very real issues that implementation of the RFS presents going forward.

# # #

Mr. WHITFIELD. The gentleman yields back.

At this time I recognize the gentleman from California, Mr. Waxman, for a 5-minute opening statement.

OPENING STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Thank you, Mr. Chairman. Yesterday, President Obama laid out a plan to cut carbon pollution, fight climate change, and protect the health and future of America's children. The plan sets us on the path to reduce carbon pollution by 17 percent by 2020, which is what we need to do in the near term.

In his speech, the President talked about the moral imperative for action on climate change. As he told the college students in the audience, quote, "The question now is whether we have the courage

to act before it is too late. How we answer will have a profound impact on the world that we leave behind, not just to you, but to your children and to your grandchildren," end quote.

As the President's plan recognizes, there is no silver bullet. Success will require sustained action across multiple fronts. One of the most critical fronts is transportation. The transportation sector is our country's largest consumer of oil and the second-largest emitter of carbon pollution. Thanks to President Obama, we already have new standards to make vehicles far more efficient and less carbon polluting. Those standards are saving Americans money at the pump, enhancing our energy security, and boosting our economy, as well as cutting carbon pollution.

But as long as our transportation system relies exclusively on fossil fuels, we will continue to make climate change worse. Fuel efficiency alone will not achieve the 80 percent reduction in climate pollution that we need by 2050 to avoid catastrophic climate change.

The shift to hybrids and electric vehicles is a big part of the solution. But low-carbon renewable fuels can also contribute significantly. And for some transportation sectors, such as aviation and shipping, low-carbon liquid fuels are the only option, besides efficiency.

Today, we are examining a law, the Renewable Fuel Standard, or RFS, that is driving development of those new low-carbon renewable fuels. The RFS is one of the few laws adopted by Congress that explicitly and directly reduces carbon pollution. Under this law, U.S. companies last year produced 20,000 gallons of an advanced renewable fuel called cellulosic ethanol, which is made from materials such as crop residues and switch grass. That may sound like a small volume until you understand that last year was the first time that cellulosic ethanol has ever been produced commercially in this country.

The Energy Information Administration estimates that production will grow to 5 million gallons this year and reach 250 million gallons by 2015. And the RFS requires that every gallon of cellulosic ethanol reduce carbon pollution by at least 60 percent compared to gasoline.

American companies are also producing large volumes of biodiesel, another advanced renewable fuel, which reduces carbon pollution by at least 50 percent compared to the diesel it replaces. The RFS is incubating an advanced renewable fuel industry that has the potential to offer tremendous climate benefits and grow our economy.

But the RFS is not without flaws. As our gasoline consumption goes down and the renewable fuel mandates increase, we could reach the blend wall where adding more ethanol to the fuel supply could damage some engines. Drop-in biofuels offers one solution, but they are still being developed.

Over the last few weeks, Chairman Upton and I have released a series of white papers discussing the RFS and soliciting public comments on the law. This process has been bipartisan, and I commend the majority for working together with Democrats. Commenters highlighted both benefits of the RFS and concerns, and

they have a variety of recommendations for this committee, which we should consider carefully.

This hearing gives us a further opportunity to take a careful look at the RFS. As we move forward the key question we need to ask is, what will the effects be on our climate? If we consider changes to the RFS, they should preserve and strengthen the law's climate benefits. As the President stated so forcefully yesterday, quote, "Someday our children and our children's children will look at us in the eye and they will ask us did we do all that we could when we had the chance to deal with this problem and leave them a cleaner, safer, more stable world," end quote. I encourage all members to contemplate this question. We won't get a second chance.

Thank you, Mr. Chairman.

Mr. WHITFIELD. Thank you, Mr. Waxman.

At this time we have concluded opening statements. And today we have only one panel of witnesses. And as I had indicated earlier, we have representatives from agencies that are responsible for implementing and studying the RFS.

And so I want to welcome all of you to this hearing. We do look forward to your testimony and listening to your expertise and observations.

And today we have Mr. Adam Sieminski, who is Administrator of the United States Energy Information Administration. We have Mr. Christopher Grundler, who is the Director of the Office of Transportation and Air Quality at the United States Environmental Protection Agency. And we have Mr. Joseph Glauber, who is Chief Economist at the United States Department of Agriculture.

So welcome. And each one of you will be recognized for 5 minutes. All of you have testified here before. And there are two boxes, and when the red light goes on your 5 minutes is up. But we do look forward to your testimony.

And, Mr. Sieminski, I will recognize you first for 5 minutes for your opening statement.

STATEMENTS OF ADAM SIEMINSKI, ADMINISTRATOR, U.S. ENERGY INFORMATION ADMINISTRATION; CHRISTOPHER GRUNDLER, DIRECTOR, OFFICE OF TRANSPORTATION AND AIR QUALITY, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY; AND JOSEPH GLAUBER, CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE

STATEMENT OF ADAM SIEMINSKI

Mr. SIEMINSKI. Chairman Whitfield, thank you. Ranking Member Rush, members of the subcommittee, thank you all for the opportunity to appear before you today to discuss the Renewable Fuel Standards program. EIA, as you know, is the statistical and analytical agency within the Department of Energy. And by law, EIA's data, analysis, and forecasts are independent of approval by any other officer, employee of the U.S. government. I would like to make nine points in summarizing my testimony.

One, the RFS program is not projected to come close to achieving the legislated target of 36 billion gallons of renewable motor fuels by 2022. This is not a new finding. All of EIA's Annual Energy Outlook Reference case projections since the targets were enacted

in 2007 have indicated that EPA would need to apply the law's flexibility to reduce requirements for cellulosic, advanced, and total biofuels. In the AEO2010, EIA projected a shortfall of over 10 billion gallons of RFS credits relative to the target for 2022. And in our most recent AEO2013, that shortfall is now projected to be 17 billion credits. So basically only about half of the legislated $36 billion target.

Two, substantially increasing the use of biofuels can only occur in forms other than the low-percentage blends of ethanol and biodiesel that account for nearly all of their current use. Of the potential alternative pathways—one, increased use of higher ethanol blends; two, the advent of drop-in biofuels; or three, the development of compatible renewable fuel components such as biobutanol—of those, so far none have achieved a significant market role.

Three, the implicit premise that cellulosic and other advanced biofuels would be available in significant quantities at reasonable costs within 5 to 10 years following adoption of the 2007 targets has not been borne out. The AEO Reference case projections do not assume breakthroughs in transformational technologies.

Four, ethanol potentially has three distinct roles in motor fuels markets: one, as an octane source; two, as a volume enhancer; and three, as a provider of energy content. So an important behavioral question arises with the use of higher percentage blends, such as E15 and E85, and that is whether the shorter range provided by a tankful of fuel due to ethanol's lower energy content per gallon will affect consumers' buying decisions. In Brazil, where a high percentage of ethanol fuels are sold, consumers do indeed consider energy content pricing rather than simply buying the cheapest fuel.

Five, ethanol faces some major demand and distribution system challenges that make it difficult to increase its use as a motor fuel regardless of its source. Although the use of E15 in model year 2001 and newer light-duty vehicles is now allowed, very few gasoline retailers offer it out of concerns related to automobile warranties, potential liability for misfueling, infrastructure costs, and consumer acceptance. Ethanol blends above 15 percent, E85, are more widely available but can only be used in flex-fuel vehicles, which make up only about 5 percent of the light-duty fleet.

Six, the projected declining trend in motor gasoline in the AEO2013 reflects a significant change from the growth projections from 2007. Since 2007, fuel economy standards, together with slower economic growth, higher gasoline prices, and possible changes in consumer behavior have changed the outlook. But lower gasoline demand is not at the root of the past or projected shortfalls in achieving legislated RFS targets.

Seven, projected reliance on oil imports in the AEO2013 is significantly lower than in 2007 due primarily to lower projected petroleum demand growth, coupled with a significantly more robust outlook for domestic petroleum production. Incremental biofuel volumes under the RFS program play only a small part in reducing projected net import dependence. As a result, among other things, there is a likely continuing use of ethanol as an octane enhancer, even in the absence of a Renewable Fuel Standard.

Eight, as discussed in my written testimony, the challenges facing renewable fuels program are reflected in the value of RINs, Renewable Identification Numbers, that are used by EPA to implement the program.

Nine, and finally, I want you to know that EIA remains actively engaged in monitoring and reporting on matters related to the RFS program. We collect monthly data on biodiesel and ethanol production, as well as weekly and monthly data on ethanol blending.

The complexity of refined product markets, of which biofuels are an important part, has led to a growing number of requests for EIA analysis. Last fall, we published a report, "Biofuels Issues and Trends"—it is attached to my testimony—to provide an overview of the dynamics of production, consumption, trade in ethanol, biodiesel, and cellulosic fuels. We also hold regular workshops to solicit feedback on a variety of these subjects.

Mr. Chairman, thank you for the opportunity to testify today, and I look forward to answering your questions.

Mr. WHITFIELD. Thank you, Mr. Sieminski.

[The prepared statement of Mr. Sieminski follows:]

STATEMENT OF ADAM SIEMINSKI

ADMINISTRATOR

ENERGY INFORMATION ADMINISTRATION

U.S. DEPARTMENT OF ENERGY

before the

SUBCOMMITTEE ON ENERGY AND POWER COMMITTEE ON ENERGY AND COMMERCE

U. S. HOUSE OF REPRESENTATIVES

JUNE 26, 2013

Chairman Whitfield, Ranking Member Rush and Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the Renewable Fuel Standard (RFS) program.

The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the U.S. Department of Energy. EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding regarding energy and its interaction with the economy and the environment. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government, so the views expressed herein should not be construed as representing those of the Department of Energy or any other Federal agency. As discussed in my testimony, EIA is active in providing both data and analysis that bear directly on the RFS program.

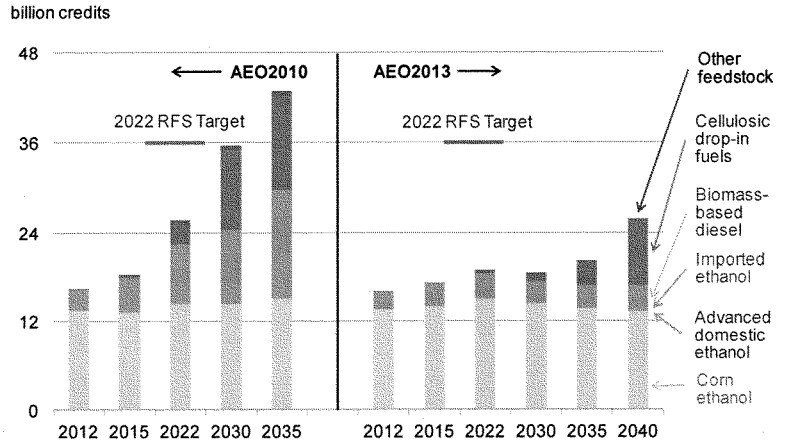
The main points of my testimony are as follows:

1. **The RFS program is not projected to come close to achievement of the legislated target that calls for 36 billion gallons of renewable motor fuels use by 2022**. This is not a new or surprising finding – all of EIA's Annual Energy Outlook (AEO) Reference case projections since the present RFS targets were enacted in 2007 have indicated that the Environmental Protection Agency (EPA) would need to apply the flexibility provided in the law to reduce requirements for cellulosic, advanced, and total biofuels from their legislatively-specified targets. Figure 1 presents EIA's Reference case projections from AEO2013, issued in late 2012, as well as those from AEO2010 that were developed and published in late 2009. (For purposes of this figure and this testimony, RFS projections are discussed in terms of RFS credits, since biofuels receive credit towards the RFS targets on the basis of their energy content relative to ethanol rather than on a strict volumetric basis. For example, each gallon of biodiesel provides approximately 1.5 credits towards the overall RFS target.) AEO2010 already

projected a shortfall of over 10 billion gallons of overall RFS credits relative to the legislated target for 2022. In AEO2013, the shortfall relative to the legislated target in 2022 is projected at 17 billion credits, slowly improving in later years as biofuels use rises. Virtually all the projected shortfall is in the category of advanced biofuels.

EIA's projections suggest that EPA will need to decide how to apply its regulatory discretion regarding the advanced and total RFS targets as allowed by law. Through the 2012 RFS program year and its proposed rulemaking for the 2013 RFS program year, EPA has acted to reduce RFS compliance levels for cellulosic biofuels. EIA's Short-term Energy Outlook (STEO) projections for 2014 as well as the AEO2013 assume that the EPA will exercise its statutory authority to reduce future RFS compliance levels for cellulosic, advanced and total biofuels.

Figure 1. Projected availability of RFS credits in AEO2012 and AEO2013



Source: EIA, Annual Energy Outlook 2010, Annual Energy Outlook 2013.

2. **Substantially increased use of biofuels can only occur if they can be used in forms other than the low-percentage blends of ethanol and biodiesel that account for nearly all of their current use.** The RFS targets enacted in 2007 cannot be approached through the current low-percentage blending of ethanol and biodiesel into motor fuels. There are three potential alternative pathways (1) Increased use of higher ethanol blends, (2) the advent of drop-in biofuels, such as renewable gasoline or renewable diesel, that can be used as direct replacements for their petroleum-based counterparts, and (3) the development and use of new renewable fuel components, such as biobutanol, that might be more easily blended in increased volumes. To date, none of these options has achieved a significant market role.

3. **The implicit premise that cellulosic and other advanced biofuels would be available in significant quantities at reasonable costs within 5 to 10 years following adoption of the 2007 RFS targets has not been borne out.** Advanced biofuels other than biodiesel (including cellulosic ethanol and cellulosic drop-in biofuels), which were already projected to fall well below the targeted levels for 2022 in AEO2010, arrive even more slowly in AEO2013. The most important cellulosic technology in the AEO2013 is pyrolysis to produce cellulosic drop-in fuels, although some cellulosic ethanol is also produced. Biofuels producer KiOR initiated operations at a facility using pyrolysis technology in Columbus, Mississippi. The AEO2013 Reference case projections assume continuing technology progress and cost reduction, but they do not assume any breakthroughs in transformational biofuels technologies, such as low-cost, scalable, algae biofuels. Such breakthroughs, if they were to occur, could make a big difference.

4. **Ethanol potentially has three distinct roles in motor fuels markets, serving as an octane enhancer, as a volume source, and as a provider of energy content. Ethanol has achieved considerable**

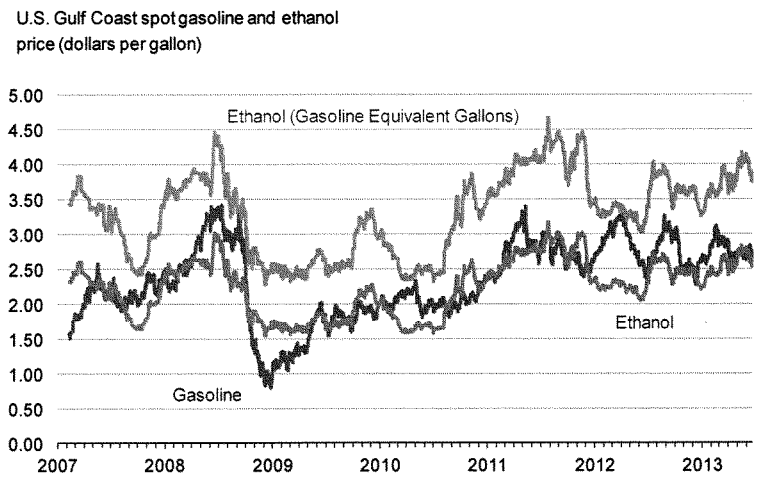
market success in the first two roles, but not in the third, where it faces a significantly higher economic hurdle.

Ethanol's major ramp up during the last decade was initially tied to its role as an octane enhancer following the phase out of Methyl Tertiary Butyl Ether (MTBE) by several states in the early 2000s, and later on a national basis following enactment of the 2005 Energy Policy Act. In this role, the use of ethanol is not very sensitive to its price.

The further use of ethanol as a source of fuel volume was enabled when it began to be generally available at a cheaper price than gasoline on a volumetric basis – see Figure 2. (Figure 2 prices do not reflect the availability of blender tax credits through 2011, which added to the attraction of ethanol blending.) With all vehicles warranted for use with blends containing up to 10 percent ethanol (E10), and consumers taking little or no notice of the lower energy content of E10 relative to petroleum-only gasoline (E0), the attractive cost of ethanol relative to gasoline drove the market to blend ethanol up to the 10-percent limit.

With the possible use of higher-percentage blends such as E15 and E85, where ethanol provides a larger proportion of the energy in each gallon of fuel, one important behavioral question is when consumers start to notice the impact of ethanol's lower energy content per gallon on the range provided by a tankful of fuel and factor that impact into their buying decisions. Experience in Brazil, where high-percentage ethanol fuels are widely sold, suggests that consumers consider energy-content pricing (top line in Figure 2) rather than simply buying the cheapest gallons. In fact, the range penalty associated with less energy-dense fuels may require that they be sold at a discount to their relative energy value to be attractive to most buyers.

Figure 2. Ethanol is cheaper than gasoline on a volumetric basis but more expensive than gasoline in energy equivalent terms



Source: EIA, Bloomberg. Ethanol data are available from February 9, 2007 onward.

5. **Ethanol faces some major demand and distribution system challenges that make it difficult to increase its use as a motor fuel regardless of its source.** While much of the wholesale distribution infrastructure is capable of handling ethanol, which to date has been moved by rail rather than pipelines, significant changes in the retail infrastructure would be needed to carry higher-ethanol blends of motor gasoline. The AEO2013 Reference case anticipates some penetration of both E15 and E85, but not nearly enough to approach the legislated RFS target.

   Although EPA has granted waivers allowing the use of E15 in model year 2001 and newer light-duty vehicles, very few gasoline retailers currently offer E15 for sale to the public due to concerns related

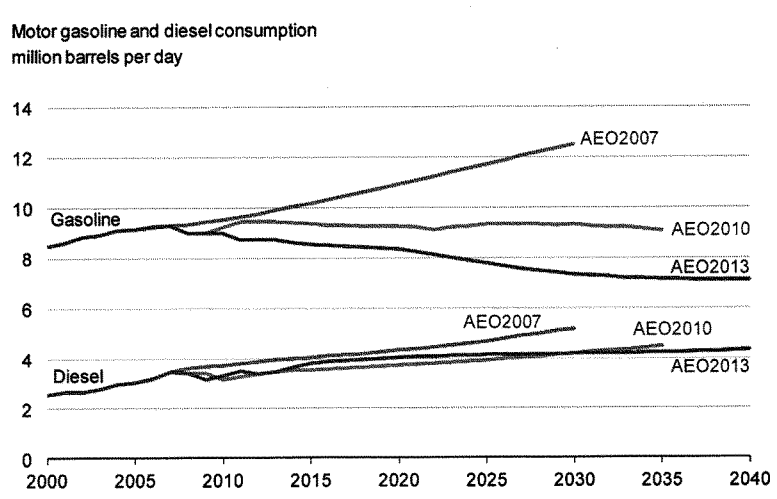
to automobile warranties, potential liability for misfueling, infrastructure costs, and consumer acceptance. Also, E15 does not qualify for the one pound Reid Vapor Pressure (RVP) waiver that was legislated for E10, so it would not be an environmentally compliant fuel in summer months when made using most current gasoline blend stocks.

E85 is more widely available at retail fuel stations, but can only be used in designated flex-fuel vehicles (FFVs). Currently, there are about 11.5 million FFVs in use, about 5.1 percent of the overall light duty vehicle fleet. Manufacturers built flex fuel capability into these vehicles in order to receive credits towards compliance with fuel economy standards under provisions that are being phased out under the implementation of future Corporate Average Fuel Economy (CAFE) and greenhouse gas emissions standards promulgated by the National Highway Traffic and Safety Administration (NHTSA) and the EPA. Without vehicle manufacturer incentives to produce additional FFVs and absent a strong consumer demand for them, which will depend on consistent E85 pricing that at least reflects its lower energy content, the potential for growth in the E85 will remain limited.

6. **The projected declining trend in motor gasoline use in AEO2013 (Figure 3) reflects a significant change from earlier projections of growth (AEO2007) or stasis (AEO2010). Changes in the projections for gasoline use since AEO2007 mainly reflect higher vehicle fuel economy standards adopted subsequent to its release, together with slower economic growth, higher gasoline prices, and possible changes in consumer behavior.** EIA's current projection for gasoline demand in 2014 (June 2013 STEO) is 133.1 billion gallons, almost 14 percent lower than the 2014 projection in AEO2007 (153.9 billion gallons). Lower levels of gasoline demand, both actual and projected, proportionately reduce the opportunity for use of ethanol as an octane or volume enhancer in E10 gasoline blends. Lower gasoline demand has likely affected the timing of some current RFS

compliance challenges that are briefly discussed later in this testimony. However, in contrast to the issues raised in my previous points, it is not a cause of the persistent past and projected shortfall of the RFS program relative to its legislated targets. By 2030, the AEO2013 Reference case projection of gasoline demand is 80 billion gallons, or 41 percent, below the AEO2007 Reference case projection.

Figure 3. U.S. motor gasoline and diesel consumption, 2000-2040

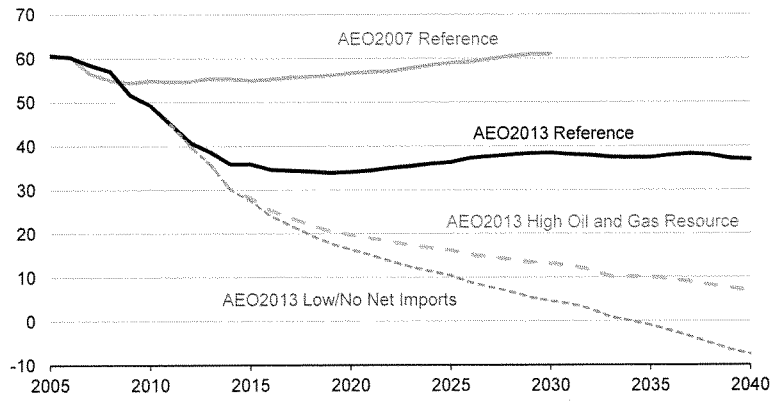


Source: EIA, Annual Energy Outlook 2007, Annual Energy Outlook 2010, Annual Energy Outlook 2013

7. **Projected reliance on oil imports in AEO2013 (Figure 4) is significantly below the AEO2007 Reference case projection. Recent and projected reductions in net import dependence primarily reflect the combined effects of the significant lowering in projected petroleum demand growth, as**

discussed previously, and a more robust outlook for domestic petroleum production. Biofuels volumes in response to the RFS program play only a small part in reducing projected net import dependence given the expectation of continued use of ethanol as an octane and volume enhancer independent of RFS program requirements. EIA expects that net dependence on imported liquid fuels, which declined from 61 percent in 2005 to 41 percent in 2012, will average only 30 percent in 2014. The recent rapid growth in tight oil production, which in 2012 represented 29 percent of total U.S. crude oil production, has been particularly noteworthy. Figure 4 shows actual and projected net import shares from three AEO2013 cases as well as the AEO2007 Reference case.

Figure 4. Net import share of liquid fuels, 2005-2040



Source: EIA, Annual Energy Outlook 2007, Annual Energy Outlook 2013, Short Term Energy Outlook May 2013

8. **The present challenges facing the RFS program are reflected in the value of Renewable Identification Numbers (RINs) that are used by EPA to implement the RFS.** EPA has created several

different varieties of RINs that correspond to the nested targets for different categories of biofuels in the RFS. The price of RINs which can only be used to satisfy the total RFS mandate (D6 RINs) hovered close to zero through 2012, as the use of ethanol as an octane enhancer and volume enhancer, as previously discussed in my testimony, was more than sufficient for obligated parties to comply with the RFS program. Early this year, D6 RIN prices rose dramatically as the market reflected on the difficulty in meeting a rising RFS target given the difficulty of accommodating additional ethanol volumes within E10 gasoline. Since mid-March, the price of D6 (ethanol) RINs has closely tracked the price of D4 (biodiesel) RINs that can be used to meet the RFS targets for advanced biofuels and biodiesel as well as the overall target.

The increase in the D6 RIN price provides an economic incentive for two changes in the market. First, a higher D6 RIN price tends to lower the cost of E85 gasoline relative to E10 gasoline. Second, a D6 RIN price equal to or near the biodiesel RIN price may motivate blending of biodiesel that exceeds the biodiesel blending requirements that EPA announced in its proposed rulemaking for the 2013 RFS program that has yet to be finalized.

At the retail level, EIA expects diesel fuel prices to be most affected by higher RIN prices as typical biodiesel blending yields only about one-third of the RINs required and diesel fuel refiners who are obligated parties under the RFS program must make up for the shortfall by purchasing the now higher-priced RINs.

9. **EIA remains actively engaged in monitoring and reporting on matters related to the RFS program. We collect monthly data on biodiesel and ethanol production, as well as weekly and monthly data**

on ethanol blending. Last fall, we published a report, *Biofuels Issues and Trends* (available at http://www.eia.gov/biofuels/issuestrends/pdf/bit.pdf) to provide an overview of the dynamics of production, consumption, and trade of ethanol, biodiesel, and cellulosic biofuels. This report provided a snapshot of the available data related to biofuels, examined significant cost drivers, reviewed state and federal regulatory environments, and explored select infrastructure issues. Each October, as required by law, EIA provides input to EPA on short-term forecasts for motor fuels use and cellulosic biofuels production. Recently, at EPA's request, we provided updated forecasts for 2013. EIA includes biofuels as part of its Annual Energy Outlook, Short-Term Energy Outlook, and has also published several Today in Energy and This Week in Petroleum articles on the subject.

Over the last year, EIA held two workshops to engage the professional and academic communities on issues relating to biofuels projections. In August 2012, EIA held a workshop on advanced biofuels, which brought together around 90 representatives from government, national labs, research institutions, commercial biofuels producers, universities, non-profit organizations, and investment firms, so that they could share with us some of the opportunities and challenges of commercializing advanced biofuels technologies. Informed by the lessons learned in the first workshop, EIA produced its AEO2013 early release in January. In March, we hosted a second workshop attended by over 200 people, over half via a live internet feed, to discuss results and solicit feedback on a variety of biofuels-related topics in preparation for future analysis.

Thank you for the opportunity to testify before the Subcommittee.

And, Mr. Grundler, you are recognized for 5 minutes.

STATEMENT OF CHRISTOPHER GRUNDLER

Mr. GRUNDLER. Thank you, Chairman Whitfield, Ranking Member Rush, and other members of the committee. I appreciate the opportunity to testify on the renewable fuels program today.

The RFS program began in 2006 under the Energy Policy Act of 2005. The statute requirements for the RFS program were then modified by the Energy Independence and Security Act of 2007, or EISA. EISA established new volume standards for renewable fuel, reaching a total of 36 billion gallons by 2022, including 21 billion gallons of advanced biofuels. The revised requirements also included new greenhouse gas emission thresholds and a number of other provisions.

After an extensive notice and comment process, EPA finalized regulations to implement EISA requirements, which went into effect on July 1, 2010. EISA requires EPA to publish annual standards for use of total, advanced, biomass-based diesel, and cellulosic renewable fuels. These standards apply to obligated parties, typically refiners and fuel importers. The statute directs EPA to determine the projected volume of cellulosic biofuel production for the following year. If that number is less than the statutory volume, EPA must lower the standard accordingly.

Congress also provided EPA the discretion to lower the advanced biofuel and total renewable mandate up to that same amount. Before proposing annual volume standards, EPA conducts a thorough review of the cellulosic industry to determine the total production capacity. We consult with the USDA, the Energy Information Administration, and the Department of Energy. We propose the annual standards through a transparent process, allowing for public review and comment.

We proposed the 2013 RFS standards in 2013, and we are proposing to maintain the statutory level for total renewable fuel of 16.55 billion gallons. We had a public hearing on this rule on March 8, 2013, and we are currently in the midst of reviewing the public comments, which were extensive, to prepare the final rule.

Congress also tasked the EPA with evaluating and qualifying new biofuels for use in the RFS program. We have already approved a significant list of advanced and cellulosic biofuels and pathways. We have a number of additional evaluations underway for new ones.

EPA continues to expand the number of approved pathways, including the recent finalization of a rule that includes certain renewable fuels from camelina oils, ethanol from energy cane, and renewable gasoline from various feedstocks. In addition, just a few weeks ago, we proposed a rule that included additional new advanced biofuels, which included cellulosic fuels from landfill biogas and advanced biobutanol from corn.

EPA is working with stakeholders to improve the implementation of this program. Compliance under the RFS program is demonstrated through the use of Renewable Identification Numbers. These document the production and distribution of renewable fuel. Obligated parties supported the use of this approach to provide them added flexibility in meeting the RFS standards.

This past February, we proposed to establish a voluntary quality assurance program for verifying the validity of these RINs. This voluntary program was proposed after receiving extensive input from oil and renewable fuels industries, with a goal of improving the liquidity of this marketplace and allowing renewable fuel producers to sell their RINs. Again, we are in the process of reviewing public comments on this proposal and hope to finalize it by the end of this year.

Although both ethanol and non-ethanol biofuels can be used to meet the RFS, ethanol has and will likely continue to be the predominant renewable fuel on the market for the foreseeable future. As the statutory volume requirements of the RFS program increase, it becomes more likely that the volume of ethanol projected to meet those requirements will exceed the volume that can be consumed in the common blend of 10 percent ethanol and 90 percent gasoline, referred to as E10.

Additional volume of ethanol would then need to be used at higher blend levels, such as E15 or E85, or significant volumes of non-ethanol would be needed to meet the targets. As a result, to the extent that ethanol is likely to be used to meet RFS volume requirements, the volume of ethanol that can be legally and practically consumed is a limiting factor in meeting the statutory volumes. This is commonly known as the blend wall.

For 2013, we expect compliance with the RFS standard through the use of RINs generated in 2013 as well as carryover RINs that were generated in 2012 by overcompliance with the standards. However, in 2014 the situation could be different. First, the advanced biofuel and total renewable fuel requirements rise substantially under the law to 3.75 billion gallons and 18.15 billion gallons, respectively. While non-ethanol biofuels are anticipated to continue to grow, an estimated 16 billion gallons or more of ethanol might still be needed to comply with the 2014 statutory target.

Second, the number of carryover RINs from 2013 will also be a critical factor to consider. We will continue to look at the potential impacts of this blend wall over the near and longer term. We are currently reviewing comments submitted in response to the agency's proposed rulemaking for the 2013 RFS volume standards and are carefully considering this input. EPA will also engage with stakeholders on this issue as we move to propose the RFS volume requirements for 2014.

We are continuing to work with our partners, our stakeholders, and the public to implement this program, as directed by the Congress. EPA will also further evaluate and consider whether any further action under the authorities established by Congress is appropriate to help ensure an orderly implementation of this program.

Thank you for this opportunity to be here today.

Mr. WHITFIELD. Thank you, Mr. Grundler.

[The prepared statement of Mr. Grundler follows:]

Christopher Grundler
Director
Office of Transportation and Air Quality
Office of Air and Radiation
U.S. Environmental Protection Agency

Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives
June 26, 2013

Written Statement

Chairman Whitfield, Ranking Member Rush and other members of the Committee, I appreciate the opportunity to testify on the subject of the renewable fuel standard program.

Overview of the Renewable Fuel Standard Program

The Renewable Fuel Standard (RFS) program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) which were amended by the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA). These provisions established new year-by-year volume standards for renewable fuel that generally must be used in transportation fuel, reaching a total of 36 billion gallons by 2022. This total includes 21 billion gallons of total advanced biofuels, comprised of 16 billion gallons of cellulosic biofuel, at least 1 billion gallons of biomass-based diesel, and the remainder consisting of "other" advanced biofuels. The revised statutory requirements also include new definitions and criteria for both renewable fuels and the

feedstocks used to produce them, including new greenhouse gas (GHG) emission thresholds. Advanced and cellulosic biofuel must achieve at least a 50 and 60 percent reduction, respectively, in lifecycle greenhouse gases compared to the 2005 baseline average gasoline or diesel fuel that it replaces. On March 26, 2010, in response to EISA, EPA promulgated regulations to implement revisions to the national renewable fuel standard program. EPA applied the best available science, and conducted extensive analyses to implement these complex and challenging statutory provisions. The regulatory requirements went into effect on July 1, 2010, and apply to domestic and foreign production of renewable fuels used in the United States.

EISA requires that each year EPA publish the annual standards for use of total, advanced, biomass-based diesel, and cellulosic renewable fuels that apply to obligated parties, which are typically refiners and importers of gasoline and diesel. The statute directs EPA to determine the projected volume of cellulosic biofuel production for the following year, and if that number is less than the volume specified in the statute, EPA must lower the cellulosic standard accordingly. EPA has the discretion to lower the advanced biofuel and total renewable mandate up to the same amount that the cellulosic biofuel volume is reduced. Before proposing annual volume standards, EPA conducts a thorough review of the cellulosic industry, including one-on-one discussions with each producer to determine its individual production capacity. EPA consults directly with the Department of Agriculture, the Energy Information Administration, and the Department of Energy's Bioenergy Technologies Office to determine the status of production capacity and capabilities of the cellulosic sector. Since these evaluations are based on evolving information about emerging segments of the biofuels industry, and may result in the applicable volumes differing from the statutory targets, we propose the annual volume standard through a

transparent rulemaking process, allowing for public review and comment, prior to finalizing the standards.

The 2013 RFS volume standards were proposed in February 2013. The standards as proposed would maintain the total renewable fuel requirement under EISA for 2013 of 16.55 billion gallons, including volumes for advanced biofuels, such as biomass-based diesel and cellulosic biofuel. A public hearing on the proposed rule was conducted on the 2013 standards on March 8, 2013. The Agency is currently in the process of reviewing the public comments in preparing to develop the final rule.

Congress also tasked EPA with evaluating and qualifying new biofuels, where appropriate, for use in the RFS program. We have established a process to evaluate new biofuels for use in the RFS program and already have approved a significant list of advanced and cellulosic biofuels. A number of additional petitions requesting evaluation of new biofuel production processes and new feedstock pathways have also been received. EPA has expanded the number of approved fuel pathways, including the recent finalization of a rule that includes certain renewable fuels from camelina, ethanol from energy cane, and renewable gasoline from various feedstocks. More recently the Agency proposed a rule that will expand the opportunity for use of additional new advanced biofuels, including cellulosic fuels from landfill biogas and advanced biobutanol from corn. The Agency has and will continue to work on evaluating opportunities for additional qualifying feedstock to fuel pathways under the program to support attaining Congressional goals of the RFS program.

EPA is working with stakeholders to improve implementation of the RFS program. Compliance under the RFS program is demonstrated through the use of Renewable Identification Numbers (RINs), which document the production and distribution of renewable fuel. Obligated parties supported the use of RINs to provide them added flexibility in meeting the RFS standards. In February, EPA proposed to establish a voluntary quality assurance program for verifying the validity of RINs. This voluntary program was proposed after receiving extensive input from the oil and renewable fuels industries and is intended to improve RIN market liquidity and efficiency and improve the ability of renewable fuel producers to sell their RINs. EPA expects that this program, when finalized, will make the RFS program more efficient and effective. We are currently in the process of reviewing public comments on the proposal.

E10 Blend Wall

Both ethanol and non-ethanol biofuels can be used to meet the RFS requirements; however ethanol has and will likely continue to be the predominant renewable fuel in the market for the near and foreseeable future. As the volume requirements of the RFS program increase, it becomes more likely that the volume of ethanol projected to meet those requirements will exceed the volume that can be consumed in the common blend ratio of 10 percent ethanol and 90 percent gasoline, referred to as E10. Additional volumes of ethanol would then need to be used at higher blend levels such as E15 or E85 to meet increasing RFS levels or significant additional volumes of non-ethanol biofuels would be needed. As a result, to the extent that ethanol is likely to be used to meet RFS volume requirements, the volume of ethanol that can be legally and practically consumed is a limiting factor in meeting the statutory volumes.

For 2013, we expect compliance with the RFS standards through the use of RINs generated in 2013 and those generated in 2012 that are available under the regulations for use (carryover RINs) in complying with 2013 standards. In 2014, the situation could be different. There are a number of factors that will play a role in determining how regulated parties will demonstrate compliance with the applicable RFS volumes. First, the advanced biofuel and total renewable fuel requirements rise substantially to 3.75 billion gallons and 18.15 billion gallons, respectively. While non-ethanol biofuels are anticipated to continue to grow to help supply the advanced biofuel standard, an estimated 16 billion gallons or more of conventional and advanced ethanol might still be needed to comply with the RFS program in 2014. Second, the number of carryover RINs from 2013 will also be a critical factor in determining how obligated parties show compliance with the 2014 RFS volume requirements. EPA will continue to engage with stakeholders on this issue as we move to propose the RFS volume requirements for 2014.

Given these facts, we will continue to look at the potential impacts of the E10 blend wall over the near and longer term. We are also reviewing comments submitted in response to the agency's proposed rulemaking for the 2013 RFS volume standards and we will carefully consider this input.

Closing

EPA will continue to work with our partners, stakeholders, and the public to implement the RFS program as directed by Congress. EPA will also further evaluate and consider whether

any further action under the authorities established by Congress is appropriate to help ensure orderly implementation of the program.

Again, I thank you for the opportunity to serve as a witness at this hearing for the Subcommittee.

Mr. WHITFIELD. And, Mr. Glauber, you are recognized for 5 minutes.

STATEMENT OF JOSEPH GLAUBER

Mr. GLAUBER. Chairman Whitfield, Ranking Member Rush, and members of the subcommittee, thank you for the opportunity to be at today's hearing to address the question of how the Renewable Fuel Standard has affected U.S. Agriculture.

Corn ethanol production increased dramatically over the past decade from just over 2 billion gallons in 2002 to almost 14 billion gallons in 2011. Driven by favorable market forces and encouraged by government biofuel policies, including the RFS, that increase has spurred corn production and corn use for ethanol and has been a factor in the recent grain price boom and overall improvement in farm balance sheets, including record farm incomes over the past few years.

This boom has not been shared equally by all segments of the ag sector, however. Livestock, dairy, and poultry producers have faced tighter margins due to higher feed costs.

Rapid expansion of corn-based ethanol production has had significant impacts on U.S. Corn production and use. From 2006 to 2011, corn use for ethanol increased by about 700 million bushels per year, rising to about 5 billion bushels. The sharp increase in the demand for corn for ethanol was a major factor behind the increase in prices over that period. From January 2000 to December 2005, the monthly average price paid to corn producers averaged $2.10 per bushel. Over the period January 2006 to December 2010, corn prices averaged $3.61 per bushel, a 72 percent increase.

Higher prices encourage producers to plant more corn to meet the increased demand. Corn-planted acreage, which had averaged 79 million acres between 2000 and 2006, averaged over 90 million acres between 2007 and 2012. Increased plantings combined with increased yields resulted in corn production of 13.1 billion bushels in 2009, a record, an increase of 2.8 billion bushels over average production levels over the period 2000 to 2006.

Despite the increase in corn production since 2006, other uses for corn have declined as more corn has been diverted to ethanol production. Corn feed and residual disappearance declined by 26 percent from the marketing year 2005/2006 to 2011/2012 while corn exports declined by 28 percent over the same period.

The decline in corn use for feed has been partially offset by the increased availability of protein feeds, such as distillers' dried grains, a co-product of the dry milling process. Nearly one-third of a bushel of corn used for ethanol production is returned in the form of DDGs.

The decline in U.S. Corn exports have been offset in world markets by increased exports from foreign suppliers, principally Brazil. Over the years 2000 to 2005, the U.S. exported on average 1.9 billion bushels of corn and accounted for about 60 percent of total world corn exports. By 2011/2012, U.S. corn exports had fallen to 1.5 billion bushels and accounted for 37 percent of total world exports. With drought-related reduced supplies in 2012/2013, U.S. corn exports are projected to fall to 700 million bushels, less than 20 percent of total world exports. U.S. corn exports are projected

to recover to 1.3 billion bushels in 2013/2014, but they are projected to account for about a third of total world exports.

In general, high commodity prices over the past few years have strengthened the farm balance sheets by raising farm receipts and produced record farm incomes. Over the period from 2000 to 2006, cash receipts for the farm sector averaged $217 billion. However, over the period 2007 to 2013, cash receipts are projected to average about $339 billion, an increase of 56 percent. Net cash income increased from an average $68.7 billion per year over 2000 to 2006. That increased to a projected $105 billion over 2007 to 2013, an increase of 53 percent.

Based on analysis of farm business data, net cash income for grain and oilseed producers have shown significant increases since 2006, with net cash income levels up by more than 78 percent for corn, wheat, and soybean producers. By contrast, livestock, dairy, and poultry producers have faced more uneven, in some cases declining returns since 2006. In general, higher feed grain prices have helped net cash income for row crop producers, but have also raised feed costs at lowered profit margins for livestock, dairy, and poultry producers.

Feed costs make up about 51 percent of expenses for dairy, 19 percent for beef cattle, and 42 percent for hogs, and 35 percent for poultry farm business. Price-feed rations for most species show a decline throughout most of the period since 2006.

Looking forward, increases in demand for corn to produce ethanol are expected to slow due to constraints on domestic ethanol consumption—as has been mentioned previous here, the so-called blend wall—increases in blending efficiency, and nearing the 15 billion gallon cap on conventional ethanol in the RFS, and finally, due to increased supply of ethanol from other feedstocks. Those will mitigate pressures on corn prices.

In addition, there are projections of potentially record corn and soybean harvests this fall, rising stock levels, and subsequent moderation of prices. This should support stronger profits in the livestock and dairy and poultry industries.

The outlook over the next 10 years calls for moderate productivity growth and flat, declining real prices for agricultural commodities. However, as we have seen over the past 7 years, an unexpected shortfall due to adverse weather could precipitate higher prices.

Mr. Chairman, that completes my testimony.

Mr. WHITFIELD. Well, Dr. Glauber, thank you.

[The prepared statement of Mr. Glauber follows:]

STATEMENT OF DR. JOSEPH GLAUBER

CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE

BEFORE THE U.S. HOUSE COMMITTEE ON ENERGY AND COMMERCE,

SUBCOMMITTEE ON ENERGY AND POWER

June 26, 2013

Chairman Whitfield, Ranking Member Rush, and Members of the Subcommittee, thank you for the opportunity to be at today's hearing to address the question of how the Renewable Fuel Standard (RFS) has affected U.S. agriculture. Corn ethanol production increased dramatically over the past decade, from just over 2 billion gallons in 2002 to almost 14 billion gallons in 2011. Driven by a combination of favorable market forces and government biofuel policies, including the RFS, the increase has spurred corn production and corn use for ethanol and has been one of the factors in the recent grain price boom and overall improvements in farm balance sheets including record farm incomes over the past few years.

Strong demand for agricultural commodities, combined with global supply shortfalls, have reduced global stocks and increased price volatility. We have seen three price spikes since 2006. Moreover, driven in part by tight feed supplies and high feed costs, low operating margins have characterized the livestock, dairy and poultry industry over the past few years. Corn ethanol production has been a factor; however, the rise in commodity prices over the past few years has been due to a variety of factors, such as increasing global demand, key production shortfalls due to droughts, as well as increasing energy prices, and any increase in farm prices for corn and soybeans due to increased biofuels production has likely had only a small effect on U.S. retail food prices.

Looking forward, with corn use for ethanol slowing due to constraints on domestic ethanol consumption (the so-called "blend wall") and prospects for record corn and soybean harvests this fall, stock levels are anticipated to rise and prices moderate, which should lead to stronger profits in the livestock and dairy sectors. The outlook over the next 10 years calls for moderate productivity growth and flat to declining real prices for commodities. However, as we have seen over the past 7 years, an unexpected supply shortfall due to adverse weather could precipitate higher prices.

In my testimony today I will review trends in corn ethanol production and how those trends have affected agricultural markets. I will discuss their effects on agricultural markets, grain and food prices, agricultural land use, and farm income. I will then give a brief overview of how the U.S. Department of Agriculture (USDA) views the 10-year outlook for agricultural markets given projected ethanol use from the Energy Information Administration (EIA). Lastly, I will also discuss next generation biofuels and projections for ethanol made from non-food feedstocks going in the future.

Expanding ethanol production

Since the late 1970s, there have been many federal and State policies that have influenced ethanol production, including tax credits to encourage blenders to include ethanol in gasoline formulations, tariff and duties on imported ethanol, State incentives for biofuel production and consumption, and regulations requiring the blending of oxygenates like ethanol and methyl tertiary butyl ether (MTBE) to meet reformulated gasoline requirements under the Clean Air Act Amendments (see for example, CBO 2009). Yet, ethanol production grew slowly from 1980 to 2000. Existing production capacity was less than 1.8 billion gallons in 2000 (see table 1).

However, from 2000 to 2005, ethanol production increased by about 400 million gallons annually.

A number of factors were responsible for that rapid growth in ethanol. From 2000 to 2005, the price of imported oil grew by over 75 percent (and by over 55 percent even adjusting for inflation). High oil and gasoline prices relative to the cost of producing ethanol increased the attractiveness of blending ethanol with gasoline. The net effect of higher energy prices and policies that encouraged ethanol production was to increase operating margins for ethanol producers (see figure 1). Liability issues over the use of MTBE because of water quality concerns resulted in its phaseout as an octane enhancer and oxygenate in 2006. With the phaseout of MTBE, ethanol experienced a surge in demand as the most cost effective and readily available oxygenate replacement and achieved a premium over gasoline prices. Energy prices, blending subsidies and limited production capacity relative to MTBE replacement demand contributed to production margins of up to $3 per gallon for producers in 2006, which helped quickly build refining capacity (Babcock 2011). Ethanol production capacity grew by almost 700 million gallons in 2006 and by January 1, 2007, planned expansion of existing and new facilities exceeded existing production capacity.

The Energy Policy Act of 2005 established the RFS, which mandated blending 7.5 billion gallons of renewable fuel with gasoline annually by 2012. The Energy Independence and Security Act of 2007 (EISA) expanded the RFS program, by setting a target of 36 billion gallons of biofuels to be produced or imported by the United States annually by 2022. EISA also established separate categories for renewable fuels based on greenhouse gas reduction criteria and set limits on the amount of corn-based ethanol that could be used to satisfy RFS

requirements rising to 15 billion gallons by 2015 (see the RFS requirements under EISA in table 2).

From 2005 to 2012, annual ethanol production grew from 3.9 billion gallons to almost 14 billion gallons, an average increase of about 1.4 billion gallons per year. As of January 1, 2013, ethanol production capacity was estimated at 14.7 billion gallons. However, expansion has slowed over the past three years for several reasons: (1) margins have weakened with high feedstock prices; (2) production levels are approaching the 15-billion gallon cap on corn-based ethanol that can be applied towards meeting the RFS; and (3) ethanol production is limited in part by the amount that can be blended and sold into the domestic fuel supply.

Impacts on corn production and use

The rapid expansion of corn-based ethanol production has had significant impacts on U.S. corn production and use over the period 2000/01 to 2013/14 (see figure 2). From 2005/06 to 2010/11, corn use for ethanol increased by about 700 million bushels per year, rising to about 5 billion bushels by 2010/11. The sharp increase in the demand for corn for ethanol was a factor behind the increase in corn prices over the period from 2005 to 2010. From January 2000 to December 2005 the monthly average price paid to corn producers averaged $2.10 per bushel. Over the period January 2006 to December 2010, corn prices averaged $3.61 per bushel, a 72 percent increase (see figure 3). Higher prices encouraged producers to plant more corn to meet the increased demand. Corn planted acreage, which had averaged 79 million acres between 2000 and 2006, averaged over 90 million acres between 2007 and 2012. Increased plantings, combined with increased yields resulted in corn production of 13.1 billion bushels in 2009, an increase of 2.8 billion bushels over average production levels over the period from 2000 to 2006.

Despite the increase in corn production since 2006, other uses for corn have declined as more corn has been diverted for use in ethanol production (see table 3). Corn feed and residual disappearance declined by 26 percent from marketing year 2005/06 to 2011/12 while corn exports declined by 28 percent over the same period. However, the decline in corn use for feed has been partially offset by the increased availability of protein feeds such as distillers' dried grains (DDGs), a co-product of the ethanol dry milling process. Nearly one-third of a bushel of corn used for ethanol production is returned in the form of DDGs. The decline in U.S. corn exports have been offset in world markets by increased exports from foreign suppliers, principally Brazil (see figure 4). Over (the trade marketing) years 2000/01 to 2005/06, the United States exported, on average, 47.8 million metric tons of corn (1.9 billion bushels) and accounted for over 60 percent of total world corn exports. By 2011/12, U.S. corn exports had fallen to 38.4 million tons and accounted for 37 percent of total world exports. With drought-reduced supplies in 2012/13, U.S. corn exports are expected to fall to 18.5 million tons, less than 20 percent of total world exports, and while U.S. corn exports are projected to recover to 33 million tons in 2013/14, they are projected to account for only 32 percent of total world exports.

Ethanol production and commodity prices

Agricultural prices declined in real terms (that is, adjusting for inflation) throughout most of the 50 or so years following the end of World War II (see figure 5) reflecting strong gains in agricultural productivity over the period. Prices began to increase in real terms around 2000 with increasing population growth, rapid economic expansion in developing countries, and rising per capita meat consumption globally along with rising energy prices (see Trostle 2008). Those factors coupled with the rapid expansion of ethanol production following the phaseout of MTBE

increased demand for corn, for conversion into ethanol and for animal feed and pushed prices for corn higher (see Collins 2006).

Prices spiked in 2007/08, in 2010/11, and most recently in 2012 as supply shortfalls coupled with strong global demand saw inventory levels for major grains and oilseeds fall to low levels. Some studies suggested that the main factor for those spikes was increased ethanol production. For example, Mitchell (2008) attributed almost 75 percent of the increase in commodity prices during the 2007/08 price spike to the increase in biofuel production. Studies also examined whether corn demand for ethanol production is less price responsive (under current economic and policy conditions), compared to other uses such as feed use or to meet export demand, which could exacerbate price volatility, particularly when stock levels are low (see for example Collins, 2006 and Wright, 2010). Other studies pointed out that there were numerous factors contributing to the overall rise in price levels during that period including production shortfalls due to adverse weather, biofuel production, strong global economic growth, rising energy prices (see for example, Trostle 2008 and Trostle et al. 2011). Still others suggested that the rapid rise in commodity prices during that period was tied to other macroeconomic conditions at the time, such as fiscal expansion and lax monetary policy in many countries, depreciation of the US dollar, and increased investment fund activity (see for example, Baffes and Haniotis 2010, and Roache 2010).

Even though corn planted acres jumped by more than 10 million acres between 2006/07 and 2007/08, corn prices still jumped by more than $1 per bushel on average. In 2008, my office was asked to examine the impact of biofuels on food prices and in testimony before the Senate Energy Committee I reported our findings that increased ethanol production accounted for about

30 percent of the increase in corn prices over 2007 to 2008 accounting for the increased production needed to meet the rise in ethanol production (Glauber 2008). More recently, the increase in U.S. ethanol production was estimated to account for about 36 percent of the increase in corn prices over the period from 2006 to 2009 (see Babcock and Fabiosa 2011).

More recent studies have found similar results (see recent reviews of econometric analyses of the impact of ethanol on corn prices can be found in Condon et al. 2013 and Hochman et al. 2013). Studies in general draw distinct differences between the short run where the effects are larger and the long run impact on corn prices after the market has an opportunity to adjust. Those effects form the basis for the discussion of the effect of biofuels and biofuel policy on issues of food security and poverty. For net sellers of corn and closely related commodities, the increase in prices offers an opportunity to improve farm incomes. However, on balance, the increase in commodity prices is expected to increase the number of food insecure people worldwide but the short run impacts of yield variation (drought, etc.) and unanticipated shifts in policy will remain a significant threat to low income consumers and net-importing countries (the U.S. is a net exporter of corn) (Condon et al. 2013).

As I noted in 2008, the increase in the farm prices for corn and soybeans due to increased biofuels production has likely had only a small effect on U.S. retail food prices. The farm component of most food sales is relatively small—about 14 percent of the overall food dollar. Higher corn and soybean prices are passed through to the consumer largely through higher fat and oil prices and indirectly through higher feed costs. Analysis of the price spike of 2007/08 suggests that ethanol had a small role in raising food inflation compared to other factors such as energy costs. The Department's estimates for food prices show average levels of food price

inflation in 2013 down from a peak in 2011, despite record high commodity prices.

Impacts on farm incomes

Increases in the prices received by farmers for row crops due to growing demand abroad, higher energy prices, and increased biofuel production, have changed farming patterns and management in many ways since 2005. In general, higher commodity prices over the past few years have strengthened farm balance sheets by raising farm receipts and produced record farm incomes. Over the period from 2000 to 2006, cash receipts for the farm sector averaged $217 billion (see table 4). However, over the period 2007 to 2013, cash receipts are projected to average $339 billion, an increase of almost 56 percent. Net cash income increased from an average $68.7 billion per year over 2000 to 2006 to a projected $105 billion over 2007 to 2013, an increase of 53 percent.

Based on analysis of farm business data, net cash income for grain and oilseed producers have shown significant increases since 2005, with net cash income levels up by more than 78 percent for corn, wheat and soybean producers By contrast, livestock, dairy and poultry producers have faced more uneven, and in some cases, declining returns since 2005 (see table 5). In general, higher feed grain prices have helped net cash income for row crop producers, but have also raised feed costs that lowered profit margins for livestock, dairy and poultry producers. Feed costs make up 51 percent of expenses for dairy, 19 percent for beef cattle, 42 percent for hogs, and 35 percent for poultry farm business. Price-feed ratios for most species show a decline throughout most of the period since 2005/06 (see figure 6).

Productivity gains, such as increased pigs per litter and increased milk production per cow, have helped offset higher feed costs, along with increased availability of DDGs as mentioned previously. Moreover, feeding of DDGs has replaced as much as 80 percent of the calories lost through the reduction of corn fed to livestock, while adding to the overall protein content of feeds (Ferris 2013). Those co-products and the ability of farmers to adjust feed rations to increase feeding efficiency have helped mitigate the impact of higher feed grain prices and loss of some corn as feed.

Biofuel policies and increasing ethanol production

One distinction that is important to consider when evaluating the effect of ethanol production on commodity prices and agricultural production is the extent to which high energy prices or other macroeconomic factors have driven biofuel production as a petroleum substitute and the extent to which various State and federal policies encouraged expansion in the biofuel sector. Studies have shown, for example, that biofuel policies over the past decade could have accounted for about 80 percent of the increase in ethanol production (see Ferris 2013). Others argue that high energy prices accounted for the majority of the impetus behind expanded ethanol production (see for example, Babcock and Fabiosa 2011).

However, with a large production capacity now in place, a more relevant question today is what might be the effect of adjusting biofuel policies? Many analyses last fall examined petitions of state governors for EPA to waive the RFS. The likely impact of a short-term waiver was found to be small (see Babcock 2012, and Irwin and Good 2012, and EPRINC 2012). At the time, researchers cited the need to stockpile production credits as a compliance strategy for the blend

wall, the importance of ethanol as octane enhancer, and the current prices of ethanol and gasoline, which favor blending ethanol.

The impact of a longer-term waiver, just as long-run production levels, depends on energy prices. So long as ethanol is priced less than gasoline, it is unlikely that there will be much reduction in ethanol usage from current levels. Most studies that examined a longer term waiver on mandates forecasted a larger impact on corn ethanol production than under a short-term waiver (see for example, FAPRI 2013). Further, if oil prices were to fall and/or ethanol production costs to rise over the longer term, it is likely that the refining sector could be reconfigured to meet octane requirements in gasoline using other additives (EPRINC 2012). In that case demand for ethanol could fall to levels equal to previous usage of MTBE, or about 4 billion gallons. We note, however, that waivers of the required RFS volumes are subject to statutory authorities granted to EPA under the Clean Air Act. The waiver authority under Clean Air Act Section 211(o)(7), for example, limits the duration of a waiver to one year.

Non-agricultural economic activity

The growth of the ethanol industry has brought jobs to rural America and has contributed to economic growth. Ethanol production is primarily concentrated in the corn producing states of the Midwest and much of it is transported to the coasts which represent the bulk of motor fuel demand. Estimation of the job impact of ethanol production requires a careful segregation of net new productivity from productivity that already existed in the region before the plant was built. For example, ethanol plants do not necessarily create new farm production jobs. In a recent analysis of the Iowa economy, Swenson (2012) estimates that ethanol plants contributed 5,995 jobs to the Iowa economy in 2011, a modest increase to a workforce of 1.7 million. Total value

added was estimated at $1.06 billion, of which $280 million was labor income. The net additions to the Iowa economy for each 100-million gallon plant was equal to 525 jobs and a total value added of $92.8 million, of which $24.5 million was labor income. Similar job impacts were found in Illinois (Low and Isserman 2009) and Nebraska (Petersan 2002).

Outlook

In February, USDA released its projections for crop production and farm prices for the next 10 years (see the USDA Agricultural Projections to 2022, February 2013) and earlier this month updated the projected production levels and prices for the 2013 crop (see the World Agricultural Supply and Demand Estimates Report, June 2013). A rebound in yields is expected to push U.S. corn and soybean production to record levels this year. Assuming moderate yield growth over the next 10 years, crop prices are projected to fall from recent record highs but remain above pre-2007 levels (see figure 7), providing some reduction in feed costs for livestock producers. Lower feed costs will increase profitability in the sector and encourage expansion.

Although the production of corn-based ethanol in the United States is projected to rebound from 2012's decline, the pace of further expansion is expected to slow considerably. After 2015, continued strong corn export demand will offset slowing demand from ethanol producers to support prices and moderate declines in corn planted area (see table 6). Yield growth and supply response both in the U.S. and abroad will help moderate crop prices in the long run, but for the near term, tight supplies will keep markets volatile with much attention paid to growing conditions worldwide. The combination of world economic growth and higher oil prices supports

continued expansion of biofuels production outside of the United States as well as longer run gains in world consumption and trade of crops.

While USDA's baseline does not foresee significant expansion of corn-based ethanol over the next 10 years, over the longer term, much will depend on the level of energy prices relative to corn. As we saw in 2005 and 2006, large margins will foster biofuel expansion. If prices of biofuels remain low relative to gasoline, there will be incentives to blend higher percentages. However, several factors will likely hinder further growth in corn use for ethanol over the next few years. One, U.S. gasoline consumption has been declining since 2008. At the time the Energy Act of 2007 was passed, forecasts by the EIA for gasoline consumption implied almost 150 billion gallons of blended gasoline by 2014. Increased fuel efficiency and fewer miles driven due to the slow economic recovery have caused gasoline consumption to decline. Current EIA forecasts of blended gasoline fuel consumption in 2013 are less than 134 billion gallons, 16 billion less than forecasts made in 2008. Two, ethanol penetration rates remain near 10 percent as growth in higher blends, such as E15 and E85 (blends of up to 15 percent and 85 percent ethanol, respectively), remains limited. Current penetration rates would imply a blend wall of less than 13.4 billion gallons for ethanol. Ethanol produced in excess of that amount must be held as stocks or exported. Lastly, while export markets have in the past welcomed U.S. ethanol production, current export prospects are reduced because of increased competition from Brazil and anti-dumping duties imposed on U.S. exports to the European Union. Indeed, EIA projects net imports of ethanol increasing over the next 5 years, rising to 1 billion gallons in 2018. Projecting trade of ethanol between the U.S. and Brazil remains highly uncertain and will depend on biofuel policies in both countries as well as fuel prices.

Looking forward, as the quantity of conventional biofuels produced from corn which qualifies for the RFS reaches its maximum, "next generation" advanced fuels created from non-food feedstocks will be needed to achieve the goals outlined in EISA. Examples of next generation fuels from materials that are not associated with food production include biomass, algae, and crop residues. Demonstration plants have been constructed to assess various conversion technologies that can produce next generation biofuels, such as cellulosic ethanol, butanol, biojet fuel, and Fischer-Tropsch diesel. While the production costs associated with the development of these fuels remains high, they are falling quickly and increasing volumes of next generation fuels are expected to reach commercial scale in the next few years. Since 2009, USDA has invested about $320 million to accelerate research on renewable energy ranging from genomic research on bioenergy feedstock crops to development of biofuel conversion processes.

Challenges remain however to bringing sufficient next generation advanced fuels in a form which can be absorbed into existing infrastructure, to the market quickly enough to meet the rapidly rising mandates in EISA (see for example Coyle 2010 and USDA 2010). Many of those challenges are surmountable, such as acquiring sufficient biomass to ensure stable production volumes, and securing financing through the early years of development. The USDA, for example, has a number of initiatives to support growers, landowners, and producers of renewable energy feedstocks to move beyond corn-based ethanol. To encourage feedstock production for renewable energy, USDA manages the Biomass Crop Assistance Program to provide biomass to energy conversion facilities. USDA offers insurance coverage for farmers growing biofuel crops like switchgrass and camelina.

However, the most immediate challenge is the blend wall, which must be overcome to reach the future goals of the RFS. In order to get beyond the blend wall, there has been considerable investment in drop-in fuels, which are substantially similar to gasoline, diesel and jet fuels and therefore have less blending constraints than ethanol and can help, along with additional biodiesel use, overcome the blend wall. These fuels can be made from a variety of biomass feedstocks and are designed to "drop-in" to existing infrastructure. The Department has entered a partnership with the Department of Energy and U.S. Navy to invest up to $510 million during the next three years to produce advanced, drop-in aviation and marine biofuels to power military and commercial transportation. The Department has also forged partnerships with the FAA and the aviation industry to promote aviation biofuels to help meet our nation's energy needs. The national work is being expanded at the regional and state level, and two commercial airlines have flown their first domestic flights powered by biofuels.

Mr. Chairman, that concludes my statement.

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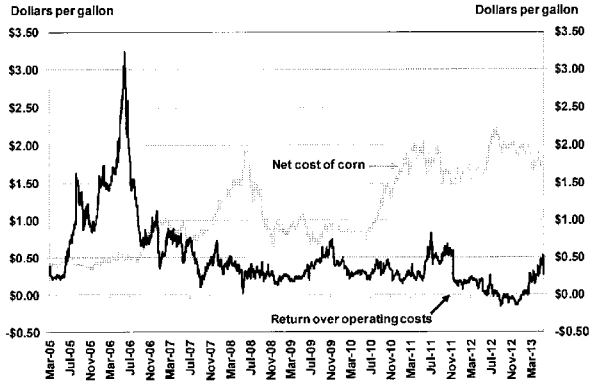
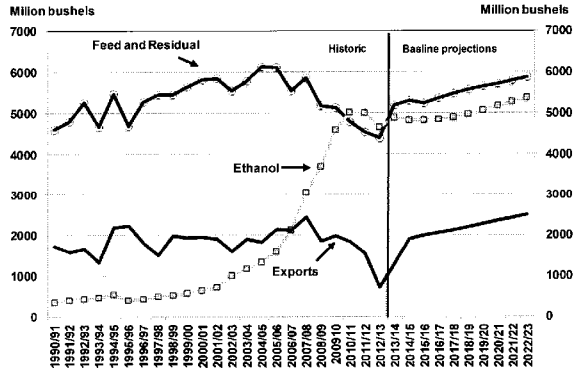
Figure 1: Ethanol Margins



Source: Iowa State University (2013, www.card.iastate.edu/research)

Figure 2: Corn Use, Marketing Year



Source: History: USDA-NASS, Forecast: USDA-WAOB (2013/14 updated to June 2013 WASDE).

Figure 3: Monthly corn farm prices

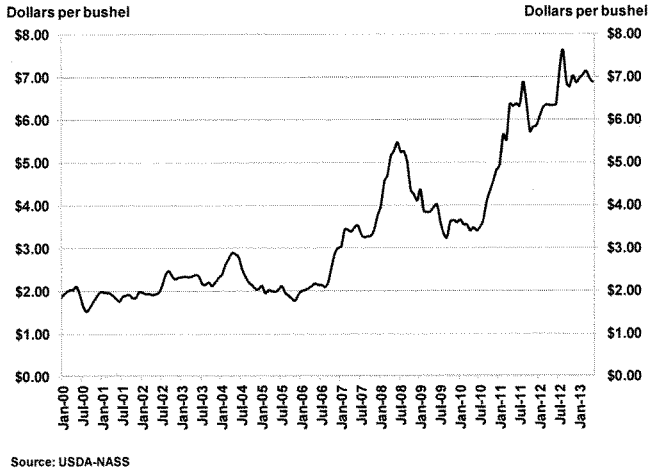


Figure 4: US and Rest of World corn exports, Trade marketing year (October- September)

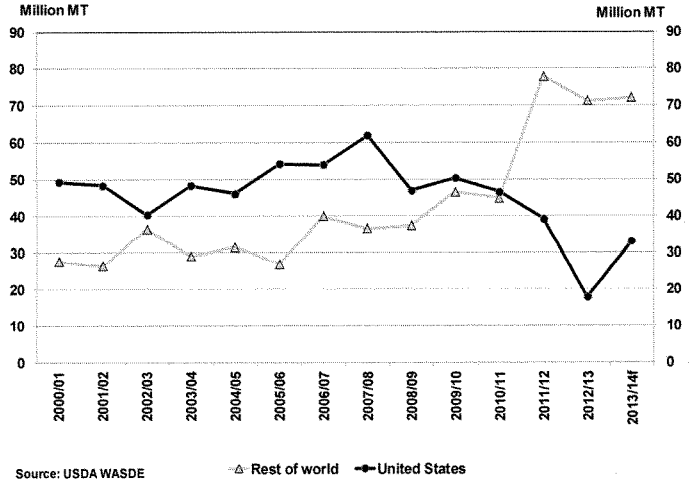
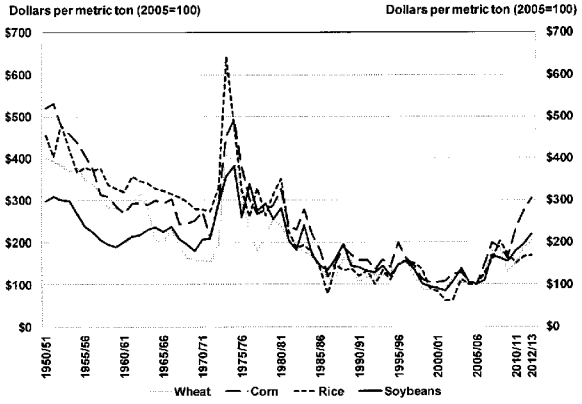
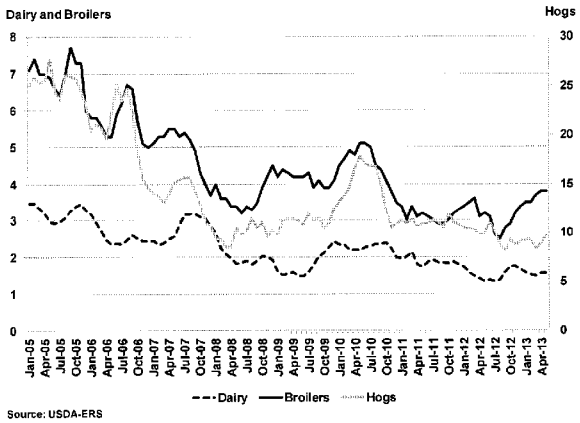


Figure 5: Annual crop prices, in 2005 dollars



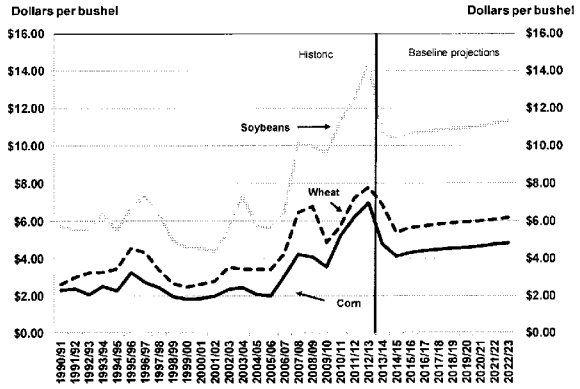
Source: USDA-NASS Quickstats (prices received by farmers)

Figure 6: Livestock price to feed price ratio, Monthly



Source: USDA-ERS

Figure 7: Commodity Prices, History and Forecast, Marketing Year



Source. History: USDA-NASS, Forecast: USDA-WAOB (2013/14 updated to June 2013 WASDE).

Table 1: Ethanol existing capacity, capacity under construction and ethanol production, Calendar year

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013F
							(million gallons)							
Existing capacity (nameplate)	1,749	1,922	2,347	2,707	3,101	3,644	4,336	5,493	7,888	10,569	11,877	13,508	14,907	14,712
Under construction/expansion	92	65	391	483	598	754	1,778	5,636	5,536	2,066	1,432	522	140	158
Production	1,622	1,765	2,140	2,804	3,402	3,904	4,884	6,521	9,309	10,938	13,298	13,929	13,300	13,396

Source: Ethanol production (Energy Information Administration); Capacity as of January 1 (Renewable Fuels Association)

Table 2: Renewable Fuel Standard Mandates, Energy Independence and Security Act of 2007, Calendar year

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
							(million gallons)							
Renewable fuels (T)	11,100	12,950	13,950	15,200	16,550	18,150	20,500	22,250	24,000	26,000	28,000	30,000	33,000	36,000
of which advanced fuels (A)	600	950	1,350	2,000	2,750	3,750	5,500	7,250	9,000	11,000	13,000	15,000	18,000	21,000
of which cellulosic biofuels (S)	0	100	250	500	1,000	1,750	3,000	4,250	5,500	7,000	8,500	10,500	13,500	16,000
of which bio-based diesel (B)	500	650	800	1,000	1,280	≥1,000	≥1,000	≥1,000	≥1,000	≥1,000	≥1,000	≥1,000	≥1,000	≥1,000
Renewable fuel gap (C) = (T-A)	10,500	12,000	12,600	13,200	13,800	14,400	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000

Source: Energy Independence and Security Act of 2007 (EISA)

Table 3 Corn Supply and Demand Balance Sheet (September-August marketing year)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
							(million bushels)							
Beginning stocks	1,718	1,899	1,596	1,087	958	2,114	1,967	1,304	1,624	1,673	1,708	1,128	989	769
Production	9,915	9,503	8,967	10,087	11,806	11,112	10,531	13,038	12,092	13,092	12,447	12,360	10,780	14,005
Imports	7	10	14	14	11	9	12	20	14	8	28	29	150	25
Supply, total	11,639	11,412	10,578	11,188	12,775	13,235	12,510	14,362	13,729	14,774	14,182	13,516	11,919	14,799
Feed and residual	5,822	5,849	5,548	5,781	6,135	6,115	5,540	5,858	5,182	5,125	4,795	4,545	4,400	5,200
Food, seed & industrial	1,977	2,062	2,355	2,549	2,707	3,019	3,541	4,442	5,025	5,961	6,426	6,439	6,050	6,350
Ethanol for fuel	630	707	996	1,168	1,323	1,603	2,119	3,049	3,709	4,591	5,019	5,011	4,650	4,900
Domestic, total	7,799	7,911	7,903	8,330	8,842	9,134	9,081	10,300	10,207	11,086	11,221	10,985	10,450	11,550
Exports	1,941	1,905	1,588	1,900	1,818	2,134	2,125	2,437	1,849	1,980	1,834	1,543	700	1,300
Use, total	9,740	9,815	9,491	10,230	10,661	11,268	11,207	12,737	12,056	13,066	13,055	12,527	11,150	12,850
Ending stocks	1,899	1,596	1,087	958	2,114	1,967	1,304	1,624	1,673	1,708	1,128	989	769	1,949
CCC inventory	8	6	4	0	1	0	0	0	0	0	0	0	0	0
Free stocks	1,891	1,590	1,083	958	2,113	1,967	1,304	1,624	1,673	1,708	1,128	989	769	1,949
Outstanding loans	253	213	277	164	280	171	116	106	171	147	48	41	50	50
							(dollars per bushel)							
Avg. farm price	1.85	1.97	2.32	2.42	2.06	2.00	3.04	4.20	4.06	3.55	5.18	6.22	6.95	4.80

Source: WASDE, June 2013

Table 4: Income statement for the U.S. farm sector, 2000-2013F

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012F	2013F
Cash income statement							(billion dollars)							
a. Cash receipts	192	200	195	216	238	241	241	289	316	289	321	374	391	393
Crops 1/	93	93	101	110	114	116	122	150	175	169	180	208	220	216
Livestock	100	107	94	106	123	125	118	138	142	120	142	166	172	177
b. Direct Government payments 2/	23	22	12	17	13	24	16	12	12	12	12	10	11	11
c. Farm-related income 3/	12	13	13	14	16	14	17	18	21	22	18	26	31	36
d. Gross cash income (a+b+c)	227	235	220	247	267	280	273	318	350	323	352	411	433	440
e. Cash expenses 4/, 5/	170	173	169	175	183	193	205	241	261	248	252	276	298	317
f. Net cash income (d-e)	57	62	51	72	84	87	68	77	89	76	99	135	136	123

Source: USDA-ERS

Numbers may not add due to rounding.

F = forecast

1/ Includes CCC loans.

2/ Note: Government payments reflect payments made directly to all recipients in the farm sector, including landlords. The nonoperator landlords' share is offset by its inclusion in rental expenses paid to these landlords and thus is not reflected in net farm income or net cash income.

3/ Income from custom work, machine hire, recreational activities, forest product sales, and other farm sources.

4/ Excludes depreciation and perquisites to hired labor.

5/ Excludes farm households.

Note: This farm income forecast reflects USDA's assessment of the outlook for commodities as reflected in the latest WASDE report.

Table 5: Average net cash income by farm business specialty, 2005-2013F

	2005	2006	2007	2008	2009	2010	2011	2012F	2013F
					(dollars/farm)				
Wheat	50,080	42,060	59,083	50,546	73,503	108,158	117,848	150,204	139,052
Corn	95,186	63,915	115,156	143,770	128,425	126,904	165,873	169,616	152,584
Soybeans	58,548	32,861	55,160	66,152	82,514	85,148	87,790	103,766	95,293
Cattle	44,298	25,319	28,112	15,081	16,833	22,349	29,936	35,919	31,660
Hogs	186,918	202,932	240,876	97,370	170,594	306,883	204,895	174,618	161,361
Poultry	81,054	68,675	139,875	76,761	78,266	93,401	89,172	97,385	95,280
Dairy	129,258	101,608	190,585	151,603	70,110	158,112	190,533	98,079	83,872

Source: ERS, USDA Agricultural Resource Management Survey estimates

Table 6: Corn, wheat and soybean planted area, history and forecast, Crop marketing year

	Wheat	Soybeans	Corn
	(million planted acres)		
2000/01	62.5	74.3	79.6
2001/02	59.4	74.1	75.7
2002/03	60.3	74.0	78.9
2003/04	62.1	73.4	78.6
2004/05	59.6	75.2	80.9
2005/06	57.2	72.0	81.8
2006/07	57.3	75.5	78.3
2007/08	60.5	64.7	93.5
2008/09	63.2	75.7	86.0
2009/10	59.2	77.5	86.4
2010/11	53.6	77.4	88.2
2011/12	54.4	75.0	91.9
2012/13	55.7	77.2	97.2
2013/14	56.4	77.1	97.3
2014/15	54.0	74.0	90.0
2015/16	51.0	75.0	86.0
2016/17	51.0	75.5	88.0
2017/18	51.0	76.0	89.0
2018/19	50.5	76.0	90.0
2019/20	50.5	76.0	90.5
2020/21	50.5	76.0	91.0
2021/22	50.5	76.0	91.5
2022/23	50.0	76.0	92.0

Source: History: USDA-NASS Quickstats
Forecast: USDA-ERS Outlook

Mr. WHITFIELD. And thank all of you. We appreciate your testimony. And at this time, we would like to ask questions of the panel, and I would recognize myself for 5 minutes to begin.

Mr. Grundler, States have on three different occasions petitioned the EPA to grant waivers from the RFS, and it is my understanding that EPA denied all of those waivers. And I would like to know, what is the criteria that you use in making a decision to grant a waiver or not?

Mr. GRUNDLER. You are correct, Mr. Chairman. We have received two separate requests, one in 2008 from the State of Texas, and then one again last year by a numerous number of States, as well as other petitioners.

The criteria in the statute are severe economic harm. So the Administrator was provided the discretion by the Congress to waive the standard in the event he or she determines that implementing that standard would create severe economic harm for a State or region or the United States.

Mr. WHITFIELD. And how would you go about defining severe economic harm?

Mr. GRUNDLER. As you know, Mr. Chairman, Congress typically provides the Agency across numerous environmental statutes different waiver authorities to deal with unanticipated circumstances. And it is pretty typical that the Administrator is given discretion to view these on a case-by-case basis and looking at the economic conditions at the time.

In the case of last year's situation, where we had this devastating drought, which was creating very harmful conditions across many parts of our country, for sure, we determined that the RFS, in fact, was not having an impact. So the first question that the agency had to answer was, is the RFS causing this harm? And after extensive modeling and consultation with other parts and experts in the government, some of which are sitting right here, and something like 500 different model scenarios, we found that the most likely result is that the RFS was not having impact. In other words, the RFS was not binding.

And the reason for that is over the last many years, the transportation fuel system has optimized around the use of ethanol. As my colleague from the EIA has noted in his written testimony, ethanol has a strong economic value to refiners. And so what we determined was that if we had waived the standard it would not have changed the demand for ethanol because refiners were still demanding this to blend in their products for octane and for volume enhancement. So that is why we felt that the statutory criteria for issuing a waiver were not met, and we had to deny it.

Mr. WHITFIELD. But you all did have consultations with the Department of Agriculture before the decision was made and EIA?

Mr. GRUNDLER. Oh, absolutely. And we saw public comment. What we did was we did the analysis to determine if the RFS was binding. And then we relied on the Ag Department and the DOE department to give us estimates in those small number of cases where it was binding, what would be the impact on food prices and energy prices.

Mr. WHITFIELD. And you all had also made the decision that model years 2001 and newer, that E15 could be used, but if it was

older than 2001 could not be used in those vehicles. How did you decide that?

Mr. GRUNDLER. That was based, again, on extensive analysis and testing programs. The Department of Energy did an extensive, statistically based testing program using a statistical sample of many vehicles, both newer vehicles and older vehicles.

Mr. WHITFIELD. But was it primarily based on your concern about damage to engines in those older vehicles?

Mr. GRUNDLER. Again, the Congress has given us very specific guidance as to when we need to grant a waiver. And we look at whether or not a new fuel would create the situation where emission standards would be violated if this fuel was used. So that was based on not only extensive DOE test program, but also consulting with many different stakeholders and reviewing over 30 different studies in the literature with respect to the impacts of ethanol on engine systems.

Mr. WHITFIELD. Would you expect that E15 would ever be approved for these older vehicles?

Mr. GRUNDLER. Our engineering judgment wouldn't suggest, and the available information would suggest that that would not be a good idea.

Mr. WHITFIELD. Dr. Glauber, you touched on this in your testimony, but we have some groups come and say, boy, this raising, the prices of corn going up, it is affecting feedstocks, whatever, whatever, in price, and other groups say, well, it has no impact at all. Just from your analysis, your experience, what would your view be on that?

Mr. GLAUBER. Well, I think, you know, it is clear that, as I said in my opening statement, that increased ethanol production has precipitated a large increase in corn production and a large increase in corn demand. With that, you see increased prices.

Now, a lot of other factors are out there in the world that affect prices. There is a whole list of things that people typically talk about. But things like we had some fairly serious droughts over the period. We have had, you know, increase in foreign demand, a number of things have affected price.

But most of the studies that we have looked at show that ethanol has contributed to some share of that increase. And I think my own study showed about 30 percent. That is similar to a lot of other studies that have been out there.

Mr. WHITFIELD. Thank you.

Mr. GLAUBER. I am sorry.

Mr. WHITFIELD. I am sorry. My time has expired. But thank you for answering.

And at this time recognize the gentleman from Illinois, Mr. Rush, for 5 minutes.

Mr. RUSH. Mr. Grundler, has the RFS failed to meet the overall gallon amount of the RFS in any year so far? Yes or no?

Mr. GRUNDLER. The total RFS standard has been met so far, yes.

Mr. RUSH. Mr. Sieminski, in your estimation, what would happen to domestic energy prices if ethanol was removed from the vehicle fuel system?

Mr. SIEMINSKI. We think that the use of ethanol would not change very much if the Renewable Fuel Standards were elimi-

nated because of the use by the industry of ethanol as an octane enhancer and a volume enhancer. It is cheap enough, they are quite happy to add it to gasoline. The key thing is its use as an octane and oxygenate enhancer.

Mr. RUSH. Thank you.

Mr. Grundler, I am going to come back to you again. There has been a tremendous amount of peer-reviewed research and modeling conducted to estimate the reduced greenhouse gas emissions realized with conventional biofuels, which would help show that the RFS is working. These new numbers show that some conventional biofuels are 50 percent less than the CO2 emissions of the 2005-based gasoline. When will EPA update their numbers on the carbon index for conventional biofuels?

Mr. GRUNDLER. Sir, right now, we have no plans to update our basic methodology for doing lifecycle analytical work. That is a pretty serious undertaking. But we do update our models as we get new information. But right now we have no plans to revise our basic lifecycle analytical methodology.

Mr. RUSH. So because it is a serious undertaking, is that the reason why you would not?

Mr. GRUNDLER. Well, not only that it is an enormous amount of work but many people have made plans based on the results that we have already promulgated, and it would be fairly disruptive for us to redo all of that work. But we are very serious about keeping up with the science and are incorporating new information as we get it through our pathway petition process when we approve new fuels, when we do our lifecycle work.

Mr. RUSH. Dr. Glauber, can you discuss what has happened to farm income in the U.S. since we adopted RFS in 2005? And, conversely, can you discuss what is happening with government payments to farmers?

Mr. GLAUBER. Yes. Thanks. It is a great point. As I mentioned in my opening statement, both cash receipts are up by over 50 percent, and net cash income, you know, that is, after subtracting out all the expenses and adding in the government payments, they are up about 53 percent or so. So a very large increase.

Government payments have gone down. Understand that by 2005, for the most part, we weren't making—we have a lot of government programs under the farm legislation that pay producers when prices fall below certain legislated levels. And prices have been above those levels for most commodities since about the mid-2000 period. Now, again not all that was due to the Renewable Fuel Standard, but there has been, as I mentioned, a large increase in corn prices, a large increase in soybean prices and others.

Mr. RUSH. Thank you.

Mr. Sieminski, has the RFS reduced the need for foreign oil?

Mr. SIEMINSKI. I am sorry, could you repeat that?

Mr. RUSH. Has the RFS reduced the need for foreign oil?

Mr. SIEMINSKI. For foreign oil. The Renewable Fuel Standard itself, where it is really having an impact at the margin is in the advanced areas. So not the corn ethanol. And that number at this point is very small. Probably 300,000——

Mr. RUSH. Thank you so much.

Mr. SIEMINSKI. Not so much.

Mr. RUSH. Thank you.

Mr. Grundler, how will the development of advanced and cellulosic ethanol projects be impacted if Congress were to make changes to the RFS?

Mr. GRUNDLER. I would really hate to speculate on that matter. What Congress has told us is each year to make an estimate of what the future production year would look like. So long as we are following that process and establishing that number based on good data and good science, I would think that the cellulosic marketplace would have a steady signal.

Mr. WHITFIELD. Gentleman's time has expired.

At this time recognize the gentleman from Texas Mr. Barton for 5 minutes.

Mr. BARTON. Thank you, Mr. Chairman.

Mr. Grundler, you, in your written testimony, if I understood you correctly, indicated that you don't, EPA doesn't plan to do anything to revise the volumetric requirement for RFS blending this year. Is that correct?

Mr. GRUNDLER. Mr. Barton, what we have done is we have proposed a 2013 standard that reflects the statutory volumes. We are right now taking comment on that. We asked for comments specifically for an adjustment of 200 million gallons, and we are reviewing those comments right now.

Mr. BARTON. What happens this year if, in spite of the rosy scenario estimates, it is just not there? Is the EPA prepared to waive the fines or come back later in the year and lower the estimate, the requirement? Because in my conversations with knowledgeable experts, they indicate that this year the blend wall is going to be hit and they are just not going to be able to meet the requirement unless they export gasoline, which seems to me kind of a silly way to meet it.

Mr. GRUNDLER. Congressman, we are quite confident in our estimate of the number of excess RINs that are in the marketplace to achieve compliance. And while we do believe that there are some refiners who are facing this blend wall, there are others who have not. And so each refiner is in a slightly different market position. But they all have different compliance options to meet their obligation. They can use these carryover RINs, they can go to the market to buy RINs, they can carry over a deficit into the next year. We really think the blend wall and what we are seeing in the RIN market is reflecting concerns about shortfall looking forward in 2014.

Mr. BARTON. So for this year the EPA policy is basically going to be cross your fingers and pray. What about next year? Is there any doubt that next year, in spite of RIN carryforward and everything else, it is not going to be met?

Mr. GRUNDLER. Sir, we noted in our proposal for 2013—which we haven't finalized yet, I want to again restate—we said that 2014 looks much more challenging. And we are seeking comment, and we have gotten a lot of comment on——

Mr. BARTON. You have been well briefed to testify before Congress. It is much more challenging, like impossible, but I will let that go.

Mr. Sieminski, do you care to speculate on, when the blend wall is finally hit, which is going to happen this year or next year, the expectation of refineries, if they are not given some relief, having to export gasoline simply because they don't have the ability to create the RINs?

Mr. SIEMINSKI. Some refiners have said that in addition to the possibility that they would just export to avoid the problem, there is also the possibility of simply cutting back on domestic production. The EIA kind of looks at that, and our conclusion is that that is not really a viable long-term strategy for refiners in a competitive market.

Another possibility would be that we end up with lower retail prices to stimulate demand for E15 and E85. And how that would happen is under the RINs program, the RINs themselves would end up making it attractive for people to use more E85 and E15. But the cost of doing that or buying that down has to come from the greater gasoline pool, or the E10 pool. That is one way to get around this problem, but I am not sure. That is a policy issue that Congress would have to look at to decide if that is how they wanted to proceed.

Mr. BARTON. Now, if I understood you, I think in response to Mr. Rush, you indicated that if we repealed the RFS mandate approximately the same amount of ethanol would be used to blend in the gasoline because it makes economic sense for a number of reasons. Is that fair——

Mr. SIEMINSKI. Roughly speaking, yes, it might be a little bit less but correct.

Mr. BARTON. Dr. Glauber, do you agree with what Mr. Sieminski just said that, absent a mandate you would still have approximately the same amount of ethanol consumed and put into gasoline?

Mr. GLAUBER. I think it depends on two factors and one was mentioned, the octane enhancer, and I think that is a very powerful thing to continue to blend ethanol at least in the short run. Over the longer run, there may be other potentially cheaper sources that they can move to, but the big thing will be just that basic equation of the price of corn versus the price of oil. And if corn is cheap relative to that, then they will continue to make it. Understand with the blend, while you kind of have an upper bound and I presume a lower bound at, you know, the Clean Air Act reformulated gas pool, which is about 4 billion or so.

Mr. BARTON. Thank you, Mr. Chairman.

Mr. WHITFIELD. At this time, I recognize the gentleman from California, Mr. Waxman, for 5 minutes.

Mr. WAXMAN. Mr. Sieminski, the climate scientists tell us that to avoid dangerous climate change, the U.S. must reduce greenhouse gas emissions by at least 80 percent by 2050. Based on EIA's projections, is the U.S. currently on track to reduce our greenhouse gas emissions by 80 percent by 2050.

Mr. SIEMINSKI. No, sir, we are not. We are making quite a bit of progress. The 1990 level that that target was based against was about 5 billion metric tons of carbon dioxide emissions from energy-related activity. We hit about 6 billion metric tons in 2005. We are

down now to about 5.3 but to get to that level you would have to be down close to 1 billion metric tons——

Mr. WAXMAN. Clearly, we are going to need to do a lot more.

Mr. SIEMINSKI. You would have to do a whole lot more. There would have to be policy——

Mr. WAXMAN. And a cleaner transportation system would be part of the solution.

The renewable fuel standard is one policy that is designed to achieve this goal. When Congress amended the RFS in 2007, we specifically required that renewable fuel and in particular advance biofuels, such as cellulosic biofuel and biodiesel, reduced greenhouse gases compared to gasoline.

And Mr. Grundler, what aspects of the RFS produce climate benefits? Do advanced biofuels reduce significantly less carbon pollution than gasoline.

Mr. GRUNDLER. Yes. There is no question about that. Our detailed analysis looking at both the direct and the indirect impacts of the advanced biofuels, clearly, the majority of the benefits from the RFS will come from the advanced pool.

Mr. WAXMAN. Last year, American companies produced more than 20,000 gallons of cellulosic biofuels. This is the first time that such levels were produced commercially in the United States, and both EPA and EIA expect production to grow. EPA anticipates a production will reach 14 million gallons in 2013. Earlier this year, EIA projected that we could reach 250 million gallons by 2015.

Mr. Grundler and Administrator Sieminski, would the cellulosic biofuels industry be expected to grow this rapidly without the advanced biofuels policy in the RFS?

Mr. GRUNDLER. In my opinion, sir, there is no question that the RFS policy has produced an enormous amount of private investment in this advanced fuel sector.

Mr. WAXMAN. And is that your view, Mr. Sieminski?

Mr. SIEMINSKI. It has, factually, it is just not moving fast enough to come anywhere close to the targets that were set in 2007.

Mr. WAXMAN. So it appears that we are at a critical juncture in this industry. Companies report that they are poised to scale up production of cellulosic biofuels dramatically, but the next few years will be important to achieve and solidify these gains.

Mr. Grundler, if Congress weakened or eliminated the RFS requirements for advanced biofuels, do you think that would undermine the development and growth of this industry?

Mr. GRUNDLER. Well, of course, it would really depend on how Congress went about that. The cellulosic standard right now is a nested standard within the total and the advanced pool.

So if Congress chose to reduce both the cellulosic target and the advanced target, the logical impact of that would be considerable uncertainty and presumably financing issues for the industry.

Mr. WAXMAN. And without an advanced biofuel industry, it is clear, is it clear how to substantially reduce carbon pollution from liquid transportation fuels?

Mr. GRUNDLER. Sir, the RFS, as written by Congress, clearly anticipated that that is where the growth would come from. These are the lowest carbon liquid fuels, based on our analysis.

Mr. WAXMAN. Mr. Chairman, I commend you for undertaking this examination of the renewable fuels standard.

Stakeholders have raised a number of concerns with the RFS. I am interested in understanding these concerns and working with our colleagues to determine an appropriate course of action. However, cutting carbon pollution to address climate change must remain a priority for Federal fuels policies, and the renewable fuels standard appears to be playing a key role in supporting and encouraging innovation in low carbon advanced biofuels. I think it is important to foster this innovation, even as we continue to evaluate the law. Thank you very much.

I yield back.

Mr. WHITMAN. The gentleman's time has expired. At this time, I recognize the gentleman from Louisiana, Mr. Scalise for 5 minutes.

Mr. SCALISE. Thank you, Mr. Chairman.

I appreciate your having this hearing. I want to thank our panelists for being here. We are starting to get a lot more questions from constituents, as they recognize the impact of the renewable fuel standards, not only how it would impact refiners, how it may impact people that own older cars that are concerned about warranties being violated, but also how ultimately it will affect the price of gasoline at the pump, which is already higher than it should be, too high for many people, and getting higher.

But especially when you look at the fact that a lot of the assumptions that were made in 2007, many of which were used to pass this law, many of those assumptions just don't exist in today's marketplace based on, number one, technologies that we have today but also in economic conditions. I know when some of our panelists talk about the problems that we are facing with why these numbers were so off, some of it was based on assumptions in ethanol and corn production, and we are seeing now maybe higher food prices because of that. But we also are seeing because of both efficiencies, as well as economic conditions, people using less fuel. If somebody doesn't have a job, they are not driving to work every day. That was not anticipated back in 2007, yet that is part of the economic reality we are dealing in today, and yet none of that is factored into when we look at some of the rules coming out from EPA.

So I am a strong supporter of repeal of the renewable fuel standard; I cosponsored legislation to do that. But I think it is important to get some of these facts out there about the marketplace we are living in today.

I want to ask you, Mr. Grundler, when you were answering one of the questions that Chairman Whitfield had brought up about significant economic harm, and there is some discretion you have in coming up with that definition, can you share with this committee the models that you used because we don't have that information, when you all are running these models to determine significant economic harm, I think it would be important for us to know what models you are actually using. Could you share with the committee that information?

Mr. GRUNDLER. I would be happy to.

Mr. SCALISE. Thank you.

Regarding E15 engine testing, is it—what exactly kind of vehicles did you use? Did you just look at emission failure? Did you look at engine failure?

Mr. GRUNDLER. First of all, we looked at a number of different studies in the literature that looked at fuel effects on across a variety of vehicles. The testing was actually done and managed by the Department of Energy, and they looked at a wide range of impacts, the priority, of course, was based on the statutory criteria as to what is the impact of higher ethanol blends on emission control systems, and would they lead to violating the emissions standards. But they also looked at materials compatibility about engine durability. They tore down a number of engines——

Mr. SCALISE. Would you share with the committee all of that information that you used in coming up with those tests?

Mr. GRUNDLER. Absolutely. All that was all shared with the public. We can provide all that information to you from the waiver.

Mr. SCALISE. Thank you when you were answering one of Barton's questions regarding RVOs, he was asking about the timing, and I think under the law, you are supposed to, by November 30th, come up with those standards for the following year. And of course, we don't have those for 2013. And you said you are still in the development process, getting information, and of course, that creates uncertainty in the marketplace, I hope you understand that. But then looking forward to 2014, can we be assured, can you give us assurance that by November 30th, we would have those rules available for 2014?

Mr. GRUNDLER. The priority right now, frankly, for me, Mr. Congressman, is to get 2013 done, and we are working very hard to do that, and I hope we will get that final by this summer.

Mr. SCALISE. You are like a year—a half year late already.

Mr. GRUNDLER. I understand that.

Mr. SCALISE. Maybe you are overwhelmed. Maybe another argument for repealing RFS is that you are too overloaded to do the things you are currently tasked with all these other things that are coming down that are creating so much uncertainty with waivers.

I think, Mr. Sieminski, you have touched on some of these waivers, and I think, in your testimony, you talked about the importance of EPA exercising that waiver ability, because just the marketplace isn't going to be ready for what is coming. I don't know if you want to expand on what you talked about in your testimony regarding that.

Mr. SIEMINSKI. In terms of your commentary, I would say that shifts in demand that we have seen have played a part in the blend wall problem, that the biggest problem post 2014 has been in the slow development of the advanced technology and that that is what is leading to the issues associated with meeting the high targets that were set in 2007.

Mr. SCALISE. I appreciate that. I look forward to hearing more testimony.

And I yield back the balance of my time.

Mr. WHITMAN. At this time, I recognize the gentleman, Mr. McNerney from California for 5 minutes.

Mr. MCNERNEY. Thank you, Mr. Chairman.

Former Chairman Barton's opening statement indicated the good intentions that went into the 2005 law and how the changing technology and market conditions present significant challenges to the RFS. However, one thing to me is quite clear, the RFS has spurred innovation, and given the threat of climate change, innovation is going to be a critical factor in moving forward.

So my first question is to Mr. Grundler from the EPA, does the agency have the necessary technical advances? Do you see the necessary technical advances emerging to meet the projected targets?

Mr. GRUNDLER. Every year, as we go through this annual process, particularly with respect to the cellulosic target, we meet with the producers so we get detailed information about where they are in scaling up their technology and from the laboratory to a commercial scale facility. That takes a, that is not an easy task and that, obviously, if you look at this historical record, it has taken longer than the Congress expected. But when we go through this process every year, we get up-to-date information on where they are, on new ideas. We get new petitions every year for new pathways and new processes and new technologies. So there is—it is clear to me that there is a lot of innovation. There is a lot of invention that is going on, and the reality is that this takes time to scale up to commercial production levels.

Mr. MCNERNEY. Good, well as the EIA mentioned, we are now on a path to meet the RSF targets by 2022, do you feel that your agency has sufficient flexibility under current law to meet the challenges of the changing technology and marketplace?

Mr. GRUNDLER. Yes. The Congress gave us a number of different kinds of authorities to adjust these standards as well as the, actually, the nondiscretionary duty if we do adjust the standard as we have now with cellulosic to reset the statutory volumes beginning in calendar year 2016. We are not ready to undertake that work we are focusing more on 2013 and 2014, but the Congress did provide the agency with a number of tools to—for an orderly implementation of these standards.

Mr. MCNERNEY. So you can say, we don't really need to repeal the law; you have sufficient flexibilities if you are given the resources to meet the changing marketplace?

Mr. GRUNDLER. I am not here today to give you a recommendation on legislation, but we are focused on using as much common sense as we can muster to address the facts and address the reality. And we are doing a lot of listening, we are getting a lot of different advice from different stakeholders on how to use those authorities, and we are contemplating all these issues right now.

Mr. MCNERNEY. Thank you.

Mr. Glauber, what steps are the USDA taking in helping producers throughout the country develop the feedstocks necessary to meet the future by biofuel demands.

Mr. GLAUBER. I think there is no question, as far as corn is concerned, there hasn't been an issue. The farmers have increased production. We are currently producing enough corn certainly to meet the demands for corn use for ethanol.

Insofar as advanced biofuels are concerned, I think that has been some of the discussion here about the underlying economics of that. We have USDA, in association with other departments, like the De-

partment of Energy, have put forward development of, say, drop-in fuels. We have a program right now with the Navy for that. We have been talking to FAA about looking at potential for drop in fuels for airplanes. We have helped develop crop insurance products for things like for some biodiesel feedstocks and things like that. So we are limited in terms of programs we have for these, but we have been trying to orient research and other things toward development of advanced biofuels.

Mr. MCNERNEY. Thank you, Mr. Chairman.

I will yield back.

Mr. WHITMAN. The gentleman yields back.

At this time, I recognize the gentleman from Texas, Mr. Hall, for 5 minutes.

Mr. HALL. I thank you, Mr. Chairman, and I thank you for this very important hearing today.

The renewable fuel standard has been successful in bringing biofuels into the transportation fuel supply here in the U.S., but the approaching, quote, "blend wall," unquote, raises a lot of unanswered questions, and we need to be careful and thoughtful about how we go forward and how we manage the renewable fuel standards.

Mr. Sieminski, can you give us an overview of the changed energy landscape today compared to 2007 and particularly speak of gasoline demands and future projections and their effect?

Mr. SIEMINSKI. Certainly, Mr. Hall, as I discussed in my testimony, the outlook for gasoline demand is a lot lower, while projected domestic oil production is significantly higher. Lower gasoline demand projections reflect higher vehicle efficiency standards, slower economic growth, higher gasoline prices. Production is primarily reflecting the role of tight oil in places like Eagle Ford in Texas and the Bakken in North Dakota. That was not really foreseen in 2007, or if it was, it was at the far end of the optimistic range.

Together those changes have resulted in a significantly reduced projection for net dependence on imported oil, so that is the biggest impact of the demand and supply shift since 2007 is the impact on imported oil has been dramatic.

Mr. HALL. And what has brought about that dramatic situation? With regard to the Arabs that we have relied on I think at one time in the last, 4 or 5 years, maybe the last 2 years, for 50 or 55 percent of our energy, and it is down to about what percent is that relying on?

Mr. SIEMINSKI. It was at 60 percent in 2005, and 2012, 2011, we got it down to about 40 percent, and right now, it is just a little over 30 percent. So a lot of progress has been made in doing that.

That is a net dependence on imported oil.

Mr. HALL. Do you think we are nearing the E10 blend wall?

Mr. SIEMINSKI. It is going to be very difficult, given the constraints on vehicle warranties and infrastructure issues and just in terms of how you can sell at above 10 percent ethanol mix at the pump, it is going to be very difficult, so, yes, I think that that is an issue. The way around that is you have to sell more E15 and E85, and the problem there is only about 5 percent of the vehicles

are capable of using E85 and less than 2 percent of the gasoline stations of the ability to sell it.

Mr. HALL. Either of you other two gentlemen have any improvement on that answer or criticism of it?

Mr. GLAUBER. I would just say I agree. I think that that is the key thing is penetration of higher blends that you just don't have the pumps and the, at least currently, those higher blends are not being priced competitively enough on an energy basis with gasoline.

Mr. HALL. And Mr. Scalise asked you about any doubts you had about the approval of E15 in the face of overwhelming skepticism from automobile makers, I didn't really get your answer to them.

Can you describe the test at EPA and DOE undertook before approving E15, and did you take into consideration things like engine durability or fuel pumps or anything like that?

Mr. GRUNDLER. The testing really was very extensive.

Mr. HALL. Was very what?

Mr. GRUNDLER. Extensive DOE ran a lot of vehicles and ran a lot of miles, up to 120,000 miles, to test the impact over the full useful life of this vehicle. They tore down engines to look at engine wear. They looked at components. So the answer to your question is yes. I don't have any doubts that we made that decision given the best information that we had at the time.

Mr. HALL. And I didn't fully you understand your answer to why you didn't grant the waiver that we sought. I wrote you a letter back in 2012 and in response Texas and other States talking about relief of the drought, and Mr. Barton got into that a little bit. And I understood you to say, well, your answer wouldn't have made any difference anyway; it wouldn't have changed anything. Isn't it a fact that the reason we requested that relief was a 2012 drought that reduced corn yields and temporarily increased corn prices?

Mr. GRUNDLER. There is no doubt that the drought had those effects. The question in front of the agency under the law is, did we think that—could we make a determination that implementing the RFS would create severe economic harm to the State of Texas or other parts of the United States? And we could not make that determination.

Mr. HALL. Well, how you made that determination I would like to get into that some time when we have a lot more time, but I don't have much respect for the good data and the good science that you say EPA has handled up to this time.

But I think I am near the end of my time. I will yield back my time.

Mr. WHITFIELD. The gentleman's time has expired.

At this time, I recognize the gentleman from New York, Mr. Tonko, for 5 minutes.

Mr. TONKO. Thank you, Mr. Chairman.

Mr. Grundler, EPA has proposed to maintain the RFS volume standard for 2013. In light of current conditions and EIA's projections, many would ask why? I would think the current conditions of the market would lead EPA to use the flexibility under the law and adjust the required volume somewhat? Your opinion on all of that.

Mr. GRUNDLER. You are right that we did propose not to adjust the volumes in 2013, although we did request comment on making an adjustment, and we are taking those comments right now. But in the proposal, and we laid out an explanation of why, we do think that there is not going to be a difficulty in 2013 to comply because of the large amount of excess credits that are available to meet the refiners' obligation.

But we are quite clear that, with respect to 2014, again based on EIA's estimates as well, that the challenge becomes much greater because the statutory volumes increase substantially, and we have asked for the public to give us some comments and some advice on whether or not we should consider adjustments going forward, how to use our authorities to do so, and we are looking at those comments very carefully right now.

Mr. TONKO. And when will you provide any sort of assessment of that?

Mr. GRUNDLER. We intend to finalize the 2013 standard very soon, before the summer is over, and my goal is to propose a 2014 standard shortly thereafter.

Mr. TONKO. Thank you.

What does USDA predict would happen to corn acreage if we were to reduce the target volumes for RFS?

Mr. GLAUBER. Well, first, I think it is instructive to know what we are projecting if we maintain the standards, and that is for corn area to fall a little bit, just because productivity in corn yields were currently—this year, we will have numbers out on Friday—but in the mid 90 range for corn acreage. We anticipate that to fall to closer to 90, 91 million acres over the next 10 years just because of improvements in yields, and so more production off the current area.

If the RFS were to be removed, then the real question is, obviously, does one continue to make ethanol out of corn? And I think that we tried to address that in the earlier question and that a lot will depend on the price of corn relative to oil. Right now, given the projections, it is assumed that producers would still or that ethanol producers would still have incentives to make ethanol, but understand that that is very sensitive now. Absent mandates, it would be very sensitive to price disruption, so higher corn prices, for example, and you could expect a reduction. And if indeed over the longer period that were to cause a significantly lower area of ethanol from corn being produced, then you would expect that to have some impact on corn area.

Mr. TONKO. And if you repealed the RFS?

Mr. GLAUBER. I am sorry. That was the scenario I was discussing.

Mr. TONKO. OK, I just wanted to make certain that is what we were addressing. And the EPA, and for any of our witnesses here, EPA has proposed designating biobutanol derived from corn as an advanced biofuel. Does that move us away from using a food crop for fuel? And I am not certain this would help with food and feed prices, what benefit would this have, if any, in addressing some of the other problems with current RFS program anything from infrastructure to the blend wall and beyond?

Mr. GRUNDLER. First of all, we estimate that it does qualify for as an advanced biofuel, so it would provide greenhouse gas reductions, and it would provide an easier way to move this fuel into the transportation system.

Mr. TONKO. In some conversations that I have had with individuals concerned about some smaller engines, those in boats or motorcycles and other specialty vehicles, they have had trouble running on even blends with 10 percent ethanol. Are fuels with lower ethanol blends becoming more scarce? And are they higher price than, what has the info feed your way been on some of these smaller specialty engines?

Mr. GRUNDLER. My understanding is practically the entire fuel supply now is at a 10 percent blend. Marinas will often provide E0 for their customers who may have older boat engines who weren't designed for the 10 percent blend, but 10 percent blends have been around for 30 years or so, so all the modern boat engines are designed to operate well on E10.

Mr. TONKO. Is that true, too, with the motorcycle engines?

Mr. GRUNDLER. Yes.

Mr. WHITMAN. The gentleman's time has expired.

At this time, I recognize the gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Too many questions, too little time. It is great to have you all here. Let me start with just a couple statements in response. Mr. Sieminski, I would say that no one wants to be a prognosticator, especially after the fact. I don't want to do it in sports, and I don't want to do it in politics, but just for the record, in 2011, you said there would be 2.79 billion gallons of ethanol, and production actually was 13.93 billion gallons. So projections are great. They are projections. We shouldn't take those to the bank as what will happen as things will change.

I also have to respond to Mr. Waxman. I am glad the President talked to college students. I would rather he come talk to my coal miners, who won't be able to afford to send their kids to college because of what his announcement did yesterday, so I think you have to pick your audience, and I think the President did and he just didn't pick the audience that are in my district.

And so as many people in this room know that I have more desire to get this fixed than anybody. I have two refineries in my district. I have got the largest corn-producing district. I have got the biggest high play of oil now because of the fracking in my district. I have got coal mines. I have got power-generating plants, so we are working hard to go through this dilemma and walk away standing up, which I think we are going to be able to do.

So let me go to a question. No one has mentioned, and Mr. Grundler really because it really is part about the requirements by law, no one has mentioned so far biodiesel and no one has mentioned the fact that actually it has exceeded its blending capabilities so it actually is helpful in this, is that correct?

Mr. GRUNDLER. That is correct the country——

Mr. SHIMKUS. And there is no blending debate. There is no fueling debate. There is no engine debate, et cetera, et cetera, et cetera.

Mr. GRUNDLER. Not at current blends no.

Mr. SHIMKUS. That is kind of a success story that is kind of getting lost. There is some success in this debate. And as I think was said earlier, if you are a climate person, there is reduction in the carbon emissions on that.

Mr. GRUNDLER. That is true.

Mr. SHIMKUS. So there is biodiesel is part of the success story that we just we have to keep in part of this debate.

I also want to talk about the greenhouse gas threshold a little bit. We export corn-based ethanol is that correct overseas?

Mr. GRUNDLER. That is correct.

Mr. SHIMKUS. We import a cane-based advanced biofuels, correct?

Mr. GRUNDLER. That is correct.

Mr. SHIMKUS. Do we calculate the transportation cost of these two ethanol products that are, in essence, no different in a greenhouse gas calculation?

Mr. GRUNDLER. Yes, we do.

Mr. SHIMKUS. You do. I would like to see that. I would argue that, maybe, well, I would like to see how you calculate that, but I would argue that that doesn't make a lot of sense if you want to reduce greenhouse gasses and we are sending ethanol outside and importing ethanol in and that is not a net increase, versus a status quo or a decrease.

Let me go on.

Mr. GRUNDLER. Can I clarify my answer, sir?

Mr. SHIMKUS. Go ahead.

Mr. GRUNDLER. When we do the lifecycle determination as to whether or not sugar cane ethanol qualifies as an advanced fuel, we take into account the transportation emissions from Brazil to the United States.

Mr. SHIMKUS. But not the refilling of sending of an equal amount of ethanol and corn-based overseas to another country?

Mr. GRUNDLER. Correct.

Mr. SHIMKUS. And that is maybe——

Mr. GRUNDLER. But it is not an equal amount. It is not—the trade relationship is not a direct one for one.

Mr. SHIMKUS. Let me go, what do you attribute—going back to Mr. Grundler again, this 2013 and not having the standards is a major problem because you can't expect refineries to meet goals and objectives if we don't have that. Now I applaud your most recent response on the shortly following, 2014 numbers will be approved because that could ease a lot of our stress and strain based upon the fact that you all have to set the blending, you have to, you set the standards.

Mr. GRUNDLER. Correct.

Mr. SHIMKUS. And my colleagues are right; we are 6 months into a year, and we don't know what the 2013 standards are. That is why people are crazy out there.

Mr. GRUNDLER. I understand.

Mr. SHIMKUS. So I would say move rapidly on 2013 and quickly follow 2014. That could help ease a lot of pressure here. And I know my time has almost expired.

What do you attribute the increase in the RIN prices that occurred earlier this year to?

Mr. GRUNDLER. Most observers, EPA included, believe that the market is reflecting the coming situation in 2014 and 2015, as these statutory volumes go up, and they are anticipating a scarcity of RINs or a higher cost in terms of moving higher blends of ethanol.

Mr. SHIMKUS. So there is a risk and uncertainty premium based upon the unknown——

Mr. GRUNDLER. That is right.

Mr. SHIMKUS. Which is why giving some——

Mr. GRUNDLER. I get it.

Mr. SHIMKUS. Data might be helpful to ease that risk.

Mr. WHITMAN. At this time, I recognize the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman.

I have a habit of following my colleague from Illinois, I guess.

Director Grundler, some have advocated E85 and E15 as solutions to the E10 blend wall. What do you see as the major barriers of these fuels as solution to the E10 blends wall?

Mr. GRUNDLER. There are significant infrastructure barriers at the moment, as has been referenced in some of my colleagues' testimony. There are only roughly 3,000 E85 stations at the moment selling 85 and roughly 11.5 million vehicles that are capable of using it, and that is a significant challenge to moving more volumes of E85. With respect to E15, there are very stations today that are offering that product.

Mr. GREEN. I heard that there are only a few stations as you said selling E15 in our country, and while E85 may be popular in the Midwest, it is not in most regions. I understand there was only one E85 station. I think in the Houston area, I think I found the one, but so it is not very widely spread, except in the Midwest.

Mr. GRUNDLER. My understanding is that we have roughly 3,000 retail stations that are selling versus over 150,000 stations that sell gasoline.

Mr. GREEN. Do you believe the EPA has the tools available to relieve the pressure on the blend wall in the short term? And if so, will EPA exercise this authority in the coming months?

Mr. GRUNDLER. Sir, clearly, the Congress provided us with a number of tools to adjust these standards. And right now, we are in the midst of getting a lot of advice. We are doing a lot of listening. And we are focusing on this very, very carefully. And I am just not in a position today to forecast where we are going to come out in 2013 and 2014.

Mr. GREEN. On Monday, the EPA won a victory when the Supreme Court declined to hear three separate lawsuits on E15. It seems, however, that the consumer will actually lose though. Automakers with limited exemptions are warning consumers that their automobiles will not be warranted for E15. How do you not have doubts about the approval of E15 in the face of skepticism by our automakers?

Mr. GRUNDLER. Sir, that is a very good question. I guess the way I would answer it is that we did do an enormous amount of listening. We did an enormous amount of testing. We did all the testing.

We looked at all the data that was available, and it simply did not show that there was going to be an impact on emission control systems by E15. We are not mandating the use of it, sir, and we are not advocates for E15. We are not opponents of E15. We simply made a determination under the law that it met the waiver criteria, and it will be up to the marketplace as to whether or not people will be offering that to their customers.

As to the warranties, I would have to defer to the automakers why they make those sorts of decisions.

Mr. GREEN. I guess just alcohol and oil sometimes just doesn't mix. I understand EPA and DOE has for years used the Coordinated Research Council to conduct vehicle emissions studies in research products likes the national surveys of E85 fuel quality, the advanced collaborative vehicle emission study and the nonroad vehicle emission study.

Can you explain why you think the coordinated council of research is valuable in these instances but discounts their E15 test results when it appeared that EPA and DOE played significant roles directly through the National Renewable Energy Lab and CRC's mid-level ethanol blends research program?

Mr. GRUNDLER. You are correct, sir. We have a long history of working with the CRC and cooperating on a whole variety of test programs.

Frankly, we regret that we weren't given the kind of role that we ordinarily have in their latest work on E15. We were unable to, even though we asked, to be much more involved in selecting the vehicles and selecting the criteria, and regretfully, we were not allowed to do that. But we look forward to continuing our historical relationship with the CRC in the future.

DOE has also commented pretty extensively on the shortcomings of the latest E15 work that you are referring to, including that it hadn't been peer reviewed, that the criteria that they chose as a failure criteria seemed arbitrary, that there were no control vehicles chosen, and so on, and I would be happy to provide to you their review of the scientific shortcoming.

Mr. GREEN. I would be glad to see it. I appreciate it.

Administrator Sieminski, your 2013 annual energy outlook early released presented a much dimmer picture for the growth of E85 sales compared with last year. Can you discuss the reasons why these projections are so much lower?

Mr. SIEMINSKI. Well, the basic reason is that the projects that were underway to produce cellulosic and advanced biofuels just simply haven't materialized in the timeframe that we believed that they would. There is consequence; our projections for how much of these fuels can be produced just keep slipping.

As Mr. Grundler said earlier, at the end of last year, we thought there would be 9.6 billion gallons of these fuels, and we are now down to 4 to 5—excuse me, million gallons. And these are, we only have two plants that are in the running at this point. One of them is up and operating. At one point, it appeared that there were as many as 10 or 12 plants to produce these fuels. And so the inability of the technology to advance as quickly as was expected in the years between 2007 and 2012 is the main factor.

Mr. GREEN. Well, obviously, it could cause a substantial volatility in the market if the technology is not there that we thought would be there and so that may be why we're having this hearing today I hope.

Mr. Grundler, can you please describe the misfueling mitigation measures EPA has in place and why EPA believes they are adequate?

Mr. GRUNDLER. I would be happy to Congressman. We required anyone who wishes to market E15 to submit to us a misfuel mitigation plan. That plan includes labeling the E15 pumps with warning labels to make sure that customers don't improperly use the fuel in vehicles that can't tolerate or small engines. We require a survey and tracking and reporting so that we know that E15 is being tracked carefully and is being used properly and a number of other details in the mitigation. I would be happy to get you the——

Mr. GREEN. If you could get that. The last question is, why does EPA believe that 14 million gallons of cellulosic biofuels is appropriate for 2013? How much is produced so far during the first 5 months, 6 months?

Mr. GRUNDLER. 8,332 RIN. I want to clarify that when we came out with proposal, that was our best estimate at the time. We are now updating that estimate based on the latest information from both producers, and we are consulting with our colleagues at EIA, and the final number will be based on that most recent information.

Mr. GREEN. Thank you very much, Mr. Chairman.

I appreciate your courtesy.

Mr. WHITFIELD. The gentleman from Nebraska, Mr. Terry, is recognized for 5 minutes.

Mr. TERRY. Thank you, and I am not in the same position as Mr. Shimkus; we only have corn. We don't have quite the diversity of resources in Nebraska as Illinois.

But I want to focus on the waiver because I am just not grasping the full extent of the waiver. When the RFS was written, it included provisions for the administrator to issue waivers if the requirements of the program would impose economic harm or impose harm on the economy.

And I am very interested in better understanding to what extent can the agency use this waiver authority? And do you agree that there is a waiver authority?

Mr. GRUNDLER. Indeed, sir, and there is more than one. If we determine, as we have for the last 3 years, that there is not the cellulosic volume to meet the Congressional standard, we adjust it, and we can also, we have chosen not to in the past, but we could also adjust the total and the advanced by that same amount. In the past, we have chosen not to because we determined that there was sufficient other advanced fuel to meet that target.

The other waiver authority, which you referenced, is a general waiver authority, where if the administrator can either be petitioned by a party or can on her own determine that the RFS implementation would create a severe economic harm to a region or a State and that the previous conversation we have been petitioned a couple of times and determined that, again, because of market dynamics and the demand that the refining industry has for eth-

anol that the statutory test simply was not met, and we are not allowed to grant that waiver.

Mr. TERRY. All right. Then, again, helping me grasp this, so because cellulosic hasn't really gotten out of the pilot to mass production yet, you were able to just waive that portion that was designated for this cellulosic growth?

Mr. GRUNDLER. That is correct. We adjusted the volume down something like 98, 99 percent, based on our estimate about what that volume would be in the forthcoming year.

Mr. TERRY. So, then, the amount that could be done, normal ethanol, corn-based ethanol, you increased though, still increased the volume or number of gallons from 2011 to 2012, and are you looking to do that again in 2013? I realize you haven't finalized that, but you said you are working on it diligently.

Mr. GRUNDLER. The proposal would have us adopt the statutory volumes for total and advanced, and then we are proposing to waive the cellulosic portion of the standard, but not, we are not——

Mr. TERRY. Just the cellulosic, but there are still advanced fuels that are on top of the regular ethanol.

Mr. SHIMKUS. Would the gentleman yield quickly?

Mr. TERRY. Yes, I will yield.

Mr. SHIMKUS. But you reduce the one point of the advanced, but you didn't reduce the overall level commensurate with the loss of production. Is that true?

Mr. GRUNDLER. That is correct.

Mr. SHIMKUS. And I think that is a problem.

Mr. TERRY. Part of the confusion here I think as well.

So you do the estimates on the 2013 crop, and how much advanced? What is your—any of your early thoughts of how much cellulosic is going to be on the market this year?

Mr. GRUNDLER. Our original estimate that was in the proposal was 14 million gallons, and we are now updating that based on the comments we received.

Mr. TERRY. That is the totality.

Mr. GRUNDLER. That is correct, and if I could just respond to Congressman Shimkus, the reason we didn't make the coincident adjustment in the advanced is because we determined that there are many other fuels, including biodiesel, that can make up that advanced pool, as well as in other advanced, domestic advanced ethanol, as well as projected imports from Brazil.

Mr. TERRY. You mentioned with E15 or greater, there are infrastructure problems. Could you state maybe at the gas station level what the specific problems would be?

Mr. GRUNDLER. With respect to E15, again, based on all the people that we have been talking to and listening to, we understand that there are both market barriers for the widespread adoption of E15, as well as remaining regulatory barriers. There are numerous kind of State and local requirements that would need to be met to sell E15. Many States still have a cap of E10 for sales in their States. There are underground storage tank and dispenser requirements that need to be met. So these all contribute to barriers to more E15 sales.

My own opinion is that these liability concerns are the predominant challenge at the moment.

Mr. WHITMAN. The gentleman's time has expired.

At this time, I recognize the gentleman from Pennsylvania, Mr. Doyle, for 5 minutes.

Mr. DOYLE. Thank you, Mr. Chairman, and thank you to the panelists.

Dr. Grundler, I see the President's Council of Economic Advisers is warning us that increasing production of food-based fuel, such as ethanol, not only increases the demand for agricultural feedstocks but may also make demand less elastic, through such measures as biofuel blending requirements, and as such, the integration of food and energy markets can cause shocks in one market that get transmitted to the other. We have seen the expansion of corn ethanol increase corn prices by 36 percent from 2000 to 2009.

CBO estimated that the use of ethanol for fuel accounted for about a 28 to 47 increase in the price of corn and a 10 to 15 percent increase in food prices. And it is important to note that these increases occurred during a time when the U.S. harvested a record 13.1 billion bushels of corn.

Grocery bills have been rising 3 to 4 percent every year, and they will rise by the same margin in 2013. In 2011, retail food costs rose 3.7 percent according to the USDA. After increasing corn ethanol mandate in 2007, the consumer price index for meat, poultry, fish, and eggs accelerated by 79 percent. The doubling of the ethanol mandate in 2007 caused a 30 percent increase in the price of corn from 2006 to 2010, according to economists. And the USDA is warning us that corn shortages, caused in part by the ethanol mandate, will drive up U.S. food prices by another 3 to 4 percent in 2013.

In light of your comments and your written testimony on the E10 blend wall, what tools does the EPA have to ensure that higher blends of ethanol into gasoline will be filled by cellulosic and advanced biofuels? As we are moving from E10 to E15, what can you do to make sure that that space is not entirely filed by corn ethanol that can negatively affect feed prices and for farmers and food prices for consumers?

Mr. GRUNDLER. As we have been discussing, the agency has a number of tools, including its responsibilities on an annual basis to set these different standards, these four different standards. With respect to what will ultimately be the mix of these different fuels is really something that is going to be a market choice. We will be establishing, again, what our best estimate of what the cellulosic volume will be. And with respect to the total and advanced, we will also be setting those targets. But how that gets sorted out in the marketplace in terms of the mix will be left to the market.

Mr. DOYLE. And also, I understand your testimony, you said that EPA is recently proposing to broaden the specific fuels that will qualify under the RFS program, can you tell me a little bit more about that proposal, and what you are doing to make this program as flexible as possible?

Mr. GRUNDLER. Thank you. Yes, we have been very busy evaluating these different feedstock and pathway petitions that people submit to us and doing the necessary lifecycle analysis to determine what their overall emissions would be and whether or not they qualify for these advanced categories.

The reason this is important work and why it is important that we continue to find ways to streamline this process and make decisions faster is because this gives the marketplace many different options and choices in terms of complying with their obligations, as well as has been discussed fostering innovation and invention in lower cost ways to meet the standard as well as provide the greenhouse gas benefits.

So we have—and I would be happy to give you the details of this—approved quite a number of advanced pathways that are sourced domestically from these different feedstocks and using these advanced technologies that will provide these benefits.

Mr. DOYLE. Good, I will look forward to that detail. Mr. Chairman, that is all I have.

Mr. WHITMAN. Thank you. At this time, I recognize the gentleman from Ohio, Mr. Latta, for 5 minutes.

Mr. LATTA. Well, thank you, Mr. Chairman, I appreciate it. And thank you very much for our panel. And if I could ask Mr. Grundler, thanks very much for your testimony today.

And one of the things I have been hearing, oh, in the last year really deals with the renewable identification number, RINs, and a company was out there and some others that were selling fake RINs for the fuel credits. How is it, for one thing, that these companies were doing that and they weren't caught and that took so long?

Mr. GRUNDLER. Well, sadly in addition to all the innovations that the RFS policy has inspired in terms of new technology, it has also inspired a lot of innovation in the criminal mind. And we have discovered what can only be called as counterfeiters, and we discovered this through our enforcement arm at the agency, through hotlines and tip lines. And as I hope you can appreciate, it takes a while to build a criminal case and to gather the evidence to make the prosecution.

But the good news is that the United States achieved several convictions already with extended jail time, prison time for these counterfeiters as well as very high fines and confiscated private jets and luxury automobiles in the process.

So I think that is a good result. The bad result that you are no doubt alluding to is this did create a chill in the marketplace because of concern about the validity of RINs that obligated parties were buying.

Mr. LATTA. Could I just ask, and you are probably ready to answer that, but what steps have the agency taken to prevent this from happening in the future?

Mr. GRUNDLER. I was just about to get to that. Again, we did a lot of listening. We worked with the oil industry and the producers and third party validators and proposed earlier this year a voluntary quality assurance program that would provide for an affirmative defense, so if you are an obligated party and you utilize one of these quality assurance programs in purchasing these RINs, and they later turn out to be fraudulent, the government is going to hold you harmless from penalizing you for that purchase. This is public comment, we have got a number of different options we have proposed, and we are going through those comments right now, and we will be finalizing this at the end of the year. But I think it has

been successful, sir, in opening up this RIN market, and the evidence there is we have got more biodiesel producers this year than we did last year. And that was our concern, that these small producers would be frozen out of the market because people would only buy from large producers that they know that have deep pockets.

Mr. LATTA. Let me ask this, you say you have an affirmative defense out there. Some of the information I have had, maybe this is the affirmative defense is since that time, is there still a buyer beware along with that affirmative defense?

Mr. GRUNDLER. Yes.

Mr. LATTA. May I ask this, this agency, is there a due diligence that has to be exercised by that buyer of that RIN?

Mr. GRUNDLER. We do expect some due diligence. But, again, if they do that due diligence, if that RIN has been through this quality assurance program, then the affirmative defense would apply.

Mr. LATTA. Could I just ask, what is your definition of due diligence then that a company would have to exercise?

Mr. GRUNDLER. Can I get back to you on the record on that? This is a legal question that I would like to consult with my enforcement.

Mr. LATTA. Because I think, again, if there is an affirmative defense on the one side, but then you are supposed to be exercising due diligence and the two have to come together at some point, I think it is pretty important that folks know exactly what that is because you might think, well, I have gone to the Web site, this is what the EPA says that this company or this RIN is a good one, and I think, OK, even if something goes wrong, I have got an affirmative defense, but then if the question is then for that person or that company, I should say is what happens with the definition of the due diligence, and we will——

Mr. GRUNDLER. We will be very clear on that.

Mr. SHIMKUS. I was——

Mr. LATTA. I will yield to the gentleman.

Mr. SHIMKUS. I just wanted to—I just want to put from the World Bank May 20, 2013, on this food fuel debate, the World Bank says in the final paragraph, it concludes that most of the price increases are accounted for—I am talking about food prices—are accounted for by crude oil prices, more than 50 percent, followed by stock to use rations and exchange rate movements, which are estimated about 15 percent each. Crude oil prices mattered most during the recent boom period because they experienced a large increase. So that was in reference to the food fuel debate and escalation of prices mostly on energy costs.

Mr. LATTA. Thank you very much, Mr. Chairman.

My time has expired, and I yield back.

Mr. WHITMAN. At this time, I recognize the gentleman from Kansas, Mr. Pompeo, 5 minutes.

Mr. POMPEO. Great. Thank you, Mr. Chairman.

Like Mr. Shimkus, I have got a lot of questions, too. It is no secret to anybody here that I have a deep skepticism of energy subsidies and mandates. This skepticism extends to the RFS as well. I represent Kansas. We have got some of the largest ethanol pro-

ducers in the world, but we are past the time when parochial interests can set policy for the country.

RFS is a bad policy. I think today's testimony bears it out. Folks back home are listening to RINs and blend walls and cellulosic mandates and RIN waivers and confiscation of airplanes associated with a market, right, consumers trying to buy gasoline at the pump and fuels to drive their trucks around. I think their head would spin with a set of Rube Goldberg device like the RFS that we have ended up with.

I hope we can move away from that. I expect we can't undo it just yet, and I hope this hearing will lead us to a thoughtful path forward on how we get how out of this mess.

Mr. Grundler, you talked about a minute ago a question I think it was Mr. Terry's question, you talked about innovation that has resulted from the RFS. I would tell you I think mostly what has happened is rent seeking. So tell me what innovation the RFS has lead to over the I guess we are between 2005 and 2007 and now.

Mr. GRUNDLER. Thank you for that question, Congressman.

The innovation I was referring to was coming up with new ways to make transportation fuel from a whole variety of different feedstocks, from wastes, to switch grass to crop residues in a way to power America's cars and vehicles.

Mr. POMPEO. And in spite of all that information, where, according to Mr. Shimkus, if I understood it right, about half the way to the 36 billion gallon target. Is that right?

Mr. GRUNDLER. That is correct.

Mr. POMPEO. So we have got less than half of the innovation that Members here who voted for this bill half a decade ago, almost a decade ago, supposed we might get as a result of this set of mandates.

Mr. Grundler, you have got a difficult challenge. You have got to implement not only this RFS but the CAFE and GHG standards for cars and trucks. The RFS last revised in 2007, we have got new CAFE and GHG rules. Have the CAFE and GHG rules affected compliance with the RFS in a material way?

Mr. GRUNDLER. What they have done is reduced the demand for gasoline in the country as my colleague, Mr. Sieminski, has pointed out, and that makes the blending challenge that much harder. So with respect to that, I don't think it has affected it yet, but it has certainly accelerated this blend wall phenomena faster than anyone expected in 2007.

Mr. POMPEO. So we have got two sets of rules and we are now trying to mix too many renewable fuels into too little gasoline, that is the mathematical challenge you face is that correct?

Mr. GRUNDLER. Essentially.

Mr. POMPEO. I have heard from Kansas refiners, pretty small refiners, 130,000 barrels a day in some cases, I heard some folks in Pennsylvania have the same problem, they are not integrated merchant refiners, and there is no relief for them specifically today. What I wanted to know I guess, Mr. Grundler, do you think you have the authority to grant some sort of relief to these nonmerchants smaller, although not small by regulation, refiners?

Mr. GRUNDLER. They are not eligible for the small refiner provision under the law, which is the definition of 75,000, so with re-

spect to a particular facility, a specific relief, they would not be eligible, no.

Mr. POMPEO. So you don't think you have the authority to grant them relief or a waiver in any way under the statute as currently drafted?

Mr. GRUNDLER. I do not.

Mr. POMPEO. Thanks.

I guess the last question, and this is really both to Mr. Grundler and Mr. Glauber, you both referred to that the challenge of higher blends.

And you, I think, Mr. Glauber, said you called it a price disruption as impacting how much is blended if we remove the RFS.

I guess I don't think of markets creating price disruptions. I think of mandates as creating market disruptions. I am interested in what a price disruption is when we have willing consumers and willing sellers trying to come to an agreement to price and purchasing.

Mr. GLAUBER. Yes, let me clarify. All I am talking about is price variability, and I am just saying when prices move the opposite way, the market will respond, either by producing or not producing.

Mr. POMPEO. Fair enough. And then you have both also referred to absence of infrastructure pumps and the like. Isn't that just price, too? When you talk about liability concerns, isn't that just a price term, as well? Isn't what we really face here, we just have consumers don't want this stuff because they are not willing to pay for it. You can build infrastructure; it is just money. You can buy insurance to take your liability risk away. It is just money. Isn't it the case it is just a price issue, and we have got an RFS that is trying to artificially intervene to solve this lack of consumer demand for this product? Do either of you agree with that or disagree with it?

Mr. GRUNDLER. There is no doubt that consumers have not demanded high amounts of E85, and it is likely because of the way the product is priced. It is not today priced consistent with its energy content and I think consumers, some consumers have figured that out.

And I would just say you are right, no one is going to put in infrastructure unless they have—are going to make those investments themselves unless they can see recouping those investments.

Mr. POMPEO. Thank you, Mr. Chairman. I yield back.

Mr. WHITFIELD. Gentleman's time has expired.

At this time recognize the gentleman from Texas, Dr. Burgess, for 5 minutes.

Mr. BURGESS. Thank you, Mr. Chairman.

Mr. Grundler, let me ask you a question, because I guess back in the summer of 2010, the soon-to-be-departed Ed Markey had a briefing where your agency, the EPA, the Department of Energy were brought into this room, and it wasn't a hearing, so there was no official transcript. It was a briefing. But I asked the question of both the EPA and Department of Energy about the testing being done on vehicles, automobiles, to allow the introduction of E15 in a safe manner. And what I got from both the Department of Energy and the Environmental Protection Agency was the other guy is doing the testing.

Well, that was unsatisfactory. I really had a lot of difficulty actually getting the testing data from either Department of Energy or the EPA. But now you cite this afternoon, in response to I think Mr. Barton's question, you cite extensive vehicular testing. Can you give me a figure of the number of vehicles in which this was tested?

Mr. GRUNDLER. I don't want to give you a misleading figure, so I would like to respond for the record.

But my recollection is that the DOE tested on the order of 80, 89 somewhere in that order of magnitude. But I would like to respond for the record specifically.

And I would also like to, if you are interested, provide you with any other technical information or reports as a result of that testing. I can state with 100 percent confidence that DOE did have the lead and did conduct this testing.

Mr. BURGESS. Right. And that was the testing conducted out at Sandia Labs.

Mr. GRUNDLER. In part I believe it was in Sandia, but I was not involved at the time. But I can certainly find out.

Mr. BURGESS. Well, according to the USA Today from about a year ago, May of 2012, the engine durability study took duplicates of eight different vehicle models, spanning the 2001 to 2009 model years. All 16 vehicles were tested over a 500-hour durability cycle corresponding to about 100,000 miles of vehicle usage. A range of engine operating parameters were monitored during the test, including cylinder compression, valve wear, valve leakage, emissions, and emission control, system diagnostics. Two of the engines tested on E15 had mechanical damage, another engine showed increased tailpipe emissions beyond the allowable limit.

So that is three out of the eight in this admittedly limited, but I am given to understand, I mean, this was the study upon which the agencies are relying to provide us with this information.

Now, the question comes up for the retailer, for the mom-and-pop store, the 7–Eleven that is selling gasoline, what limit of liability do they have if someone doesn't read the fine print on the little stick-on label that is going to be affixed to the tank that "don't put this in your car if your vehicle model is earlier than 2001"? What limit of liability does the retailer have in that situation?

Mr. GRUNDLER. Congressman, I would like to respond for the record with respect to the liability question, because I don't feel I am qualified to answer that aspect of the question.

I do want to clarify that with respect to the testing that you referenced, that is only part of the information that the Agency relied on to make its determination. And I would like to respond more fully for the record to describe the bulk of the work that DOE conducted, as well as the other studies that EPA looked at with respect to E15 and its impacts on emission control systems.

Mr. BURGESS. Well, I just have to tell you, I have got a radio show, "Car Guy," on Saturday mornings back in the Dallas-Forth Worth market, Ed Wallace. And he has written about this extensively in his own column in the Fort Worth Star-Telegram and Businessweek. I just want to quote from an article that he wrote in Businessweek in 2010: "The older cars owned by those less financially secure will likely be the first to go. In fact, that has al-

ready happened in thousands of cases nationwide." He is talking about the introduction of E15 of these vehicles. "Maybe when it starts happening to some of those on more solid financial ground then someone will listen. Adding an expensive, harmful, useless filler to gasoline is not remotely the same thing as having a legitimate national energy policy."

Mr. Chairman, I thank you——

Mr. SHIMKUS. Will the gentleman yield for just 10 seconds?

Mr. BURGESS. I will yield for 14 seconds.

Mr. SHIMKUS. Just a point. There is legislation that I have introduced on liability protection, both for the retailer and for the refiner, on selling an approved fuel——

Mr. BURGESS. Reclaiming my time. I will also mention that I have introduced legislation that would actually take us back to the pre-2007 days, when the inadvised increase in the ethanol mandate was passed by the House in 2007 and signed by President Bush in that year. It is H.R. 1469, if members want to take a look at the legislation.

Thank you, Mr. Chairman. I will yield back.

Mr. WHITFIELD. The gentleman's time has expired.

At this time I will recognize the gentleman from Texas, Mr. Olson, for 5 minutes.

Mr. OLSON. I thank the chair. And welcome to our witnesses. This clearly is a very passionate issue that crosses party lines. But we owe the American people a thorough review of the RFS for one simple reason: The American energy outlook that drove the creation of ethanol tax subsidies in RFS is in the dustbin of history. Tax preferences for corn-based ethanol were created last century and mutated into RFS this century.

Why the spur of government activity? Because we thought we hit peak gas. Meaning that to feed our ever-growing demand for gasoline we had to buy more and more oil from foreign sources that weren't reliable. Our production was going down every single day.

But the American innovator, with new technology, has pushed peak oil back to the next century. And while I think the best solution to this problem is to repeal RFS, my mind is not closed. But it is not empty either.

Mr. Sieminski, it seems to me that the only way that RFS could be viable in years ahead, without any modifications, would be if market conditions dramatically change. And following former Chairman Dingell's lead, I will ask you to answer yes or no.

Yes or no: Does EIA expect a dramatic spike in gasoline demand over the next few years?

Mr. SIEMINSKI. Does EIA expect what?

Mr. OLSON. A dramatic spike in gasoline——

Mr. SIEMINSKI. No, sir, we do not.

Mr. OLSON. Absolutely not.

Yes or no: Does the EIA expect a spike in the use of either E15 or E85? Spike E15, E85, next couple years.

Mr. SIEMINSKI. In production volumes?

Mr. OLSON. Production volume, use in automobiles, transportation.

Mr. SIEMINSKI. No, we are seeing a lot of difficulty in producing those fuels.

Mr. OLSON. So I think that is a no; no spike there.

Yes or no: Does EIA expect sudden widespread production of advanced biofuels in the next few years?

Mr. SIEMINSKI. Not without a technological breakthrough.

Mr. OLSON. There we go. So in your opinion, these facts bode well for compliance with the RFS as it stands today?

Mr. SIEMINSKI. As my testimony said, the RFS as it is currently constituted simply can't be met.

Mr. OLSON. OK. So my next question for you, sir, if it doesn't match the standards, if all those answers were no, can RFS be saved or is it easier to end it and start over making a product and policy that reflects new U.S. energy reality? Think so? Good idea?

Mr. SIEMINSKI. That is a policy issue.

Mr. OLSON. OK. Appreciate that.

And my next question is for Dr. Glauber.

Sir, in your opening remarks you touched on how corn-based ethanol has increased the price of commodities. Conclusions vary, but you cited several studies discussing ethanol contributing to over 30 percent of the increase in corn prices. And I have a copy of the USDA research piece that was put out earlier this year by Dr. Richard Volpe, Ph.D., from the Food Markets Branch.

[Slide shown.]

Mr. OLSON. And the first panel is the outlook for 2013. And I quote, "But high-priced corn, soybeans, and wheat will permeate supermarkets. Structural inflation for beef, pork will intensify. Overall, inflation higher than the historical average."

Next slide.

[Slide shown.]

Mr. OLSON. "What does this mean for consumers? Food prices increase."

I heard from Wendy's restaurants last week. And they said very publicly that their average retail location lost nearly 30,000 per store last year because of commodity price increases. Restaurants have a tight profit margin. That is money that doesn't go towards expansion and doesn't go towards a new employee. Briefly, what are the ways in which commodity prices increase have negatively impacted nonfarm businesses?

Mr. GLAUBER. Well, Congressman, understand last year most of this is due to the fact that we had a very extreme drought in the Midwest that sharply reduced corn and soybean yields and pushing those crops' crop prices up substantially. I think what is the surprising thing—that piece was written a while back—I think the surprising thing is the fact that thus far we haven't seen much increase in the overall retail price of food.

Now, this isn't saying that Wendy's or other businesses that you have talked about haven't faced higher costs. I understand that. But at least as measured by BLS, Bureau of Labor Statistics, just the most recent report said prices for food at home were about 0.8 percent higher than they were at this time last year.

Now, to understand how inflation works, when you see higher corn prices, it doesn't make itself known right away. And that is largely because one of the major uses for corn is for cattle feed and for livestock feed. So that takes time. You see shorter, you know, smaller margins, and some producers liquidate herds. That drives

up the price of livestock products, which then shows up in retail foods.

That effect is much, much, much smaller than the overall effect on commodities. So corn prices can go up a lot, retail prices go up much, much smaller percent. And that is largely because the farm gate price in a retail food dollar is only about 14 percent or so. You have transportation of it, you have distribution.

But it is an impact on inflation. When ERS just put out new numbers—the Economic Research Service, of which you were quoting from there, they just put out new numbers yesterday. They are talking about food inflation being on the average of 2.5 to 3.5 percent this year, which is certainly higher than it was last year, but in line more or less with where we have been over the last 10 years. It is not denying that these things have inflationary pressure, because they do. But understand again the main part was because of the drought that we saw.

Mr. WHITFIELD. Gentleman's time has expired.

At this time, recognize the gentleman from Virginia, Mr. Griffith, for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman.

Mr. Grundler, let me ask you this question, and here is the concern. Our retail gas folks—and you have heard the questions earlier, and I am not going to go back through the history about E15. And we heard about the question on, you know, legal liability for the person if they put the wrong fuel into the engine for a car that is pre-2001. Of course, I am driving a 2003, and I don't know if that will impact them a little bit or not. But for these older cars we have heard about that, and you are going to get us an answer, and I appreciate that.

But one of the concerns that a lot of the folks who sell the gas, the convenience stores and the gas stations, is quite frankly they are also concerned that, you know, if they decide that they are going to sell the E15 alongside E10, what is the risk to them that your agency will hit them with a violation of the Clean Air Act? And there is some concern, they gave me some history on it, because apparently when they were switching from, you know, unleaded fuel to leaded fuel, if the gas station owner didn't go out and physically say, no, you can't buy, that is the wrong car for that leaded gas, they got fined, and it appears the fines that can be assessed are up to $37,500.

So what I am asking you is, is that there have been some indications that certainly your agency wouldn't go in that direction, but we have nothing in writing to assure these folks. I am asking you, can you get us something in writing that will assure the convenience store operators,the gas station operators that, you know, if they are trying to do what is right, they are not going to be fined when a consumer comes up and puts the wrong kind of gas into the vehicle.

Mr. GRUNDLER. Just to clarify, sir, the question is will they be fined by——

Mr. GRIFFITH. For a CAA violation.

Mr. GRUNDLER. —the government——

Mr. GRIFFITH. By the government, yes.

Mr. GRUNDLER. —if a consumer ignores the label and——

Mr. GRIFFITH. That is the question, sir.

Mr. GRUNDLER. I would be happy to take that back and talk to my counsel and see what our response would be.

Mr. GRIFFITH. It would seem to me, you know, we heard testimony it is going to be difficult to get the E15, it is going to be difficult to use, that there are going to be some problems, we have got a question about legal liability, would seem to me at the very least that is something that the government ought to be able do, is to reassure these folks that on top of all the other headaches in trying to move forward with this program that they don't have to worry about the government coming in and hitting them with a pretty hefty fine. Because if you are a small retailer, not a big chain—maybe the big chains can handle it, but the small retailer, that is a lot of money, particularly in a district like mine where the average household income is only $36,000 a year. That is, you know, annual salary for somebody.

Mr. GRUNDLER. I understand. In fact, this issue was just brought to my attention yesterday by the head of the association of these kinds of businesses.

Mr. GRIFFITH. Sure.

Mr. GRUNDLER. So we are listening very carefully. And if there are any kind of barriers that EPA is putting in the way, we would like to address those.

Mr. GRIFFITH. I appreciate that.

Dr. Glauber, you have talked a little bit about the corn costs going up affecting the cost of food. But don't we also have a situation where it affects those livestock dealers? And I think you just mentioned that some of them are liquidating their herds. And isn't it maybe the unintentional consequence that we have helped the row farmers but we have hurt all these other farmers? And it is certainly not the intent of the government to hurt the livestock, poultry, and dairy farmers, is it?

Mr. GLAUBER. Well, it is certainly the case that if you look from 2005 to current that profits in those industries have declined. And it is no mystery, it is due to the higher feed costs. It is been exacerbated and particularly over the last year exacerbated by the drought, which not only shot up feed prices, but also reduced pasture conditions in most of the U.S.

Mr. GRIFFITH. Right. And wouldn't we expect at some point on the food inflation, I mean, not only because the feed costs went up, but because the liquidation of some of those herds, that at some point there may be pressure upward on the price of beef, particularly?

Mr. GLAUBER. Well, again, that is how inflation typically occurs in those industries. I would just point out that one thing——

Mr. GRIFFITH. Got to be quick, because I am running out of time. I have got another question.

Mr. GLAUBER. I am sorry.

Mr. GRIFFITH. I will get the rest of it from you at a later time because it is important——

Mr. GLAUBER. I am a talkative guy. I apologize.

Mr. GRIFFITH. That is all right. We are trying to get some information here.

And the problem is these industries I think should factor in on a decision when you are hurting these industries on the waivers. But last year I one was of the Congressmen that wrote a letter asking for a waiver—and this is coming back to you, Mr. Grundler. The Governor of Virginia asked for a waiver trying to help our farmers out. Do you need new legislation—because the waiver wasn't granted in a time when I think it probably screamed to be granted—do you need new legislation or do you think that the EPA can actually look at these waivers in an unbiased manner and grant some of these waivers? When, like last year, we had a drought, it is affecting the farmers in my district. And I have an agriculture and coal district. It is two of my big industries. And we are under attack on coal now. Seems like agriculture is not getting any help when it needs it. Isn't there some waiver process or do you want me to put it in a bill?

Mr. GRUNDLER. Of course, it is completely up to Congress in terms of how you would like the EPA to administer these authorities. You gave us a pretty stringent test, which was severe economic harm, and that the RFS is responsible for that. Again, based on all the information and the objective analysis we did in response to the Governor of Virginia's request, we determined that the demand for ethanol is such that waiving the RFS would not have influenced that demand, would not have influenced feed prices, would not have influenced corn prices at all.

Mr. GRIFFITH. I would just say that my farmers in my district, I can't speak to the rest of the country, disagree.

And I yield back.

Mr. WHITFIELD. Gentleman yields back. Gentleman's time has expired.

At this time, recognize the gentleman from New York, Mr. Engel, for 5 minutes.

Mr. ENGEL. Thank you, very much, Mr. Chairman. I appreciate it.

And I first want to say that there has been a lot said, both good and bad, obviously, regarding the Renewable Fuel Standard. And the most important information I think to remember is that the RFS reduces our dependence on foreign oil and reduces our carbon emissions. And we will have to see whether or not it will be a success or a failure.

But I think there are things we can do now to help strengthen the RFS, decrease our reliance on foreign oil, and improve our national security. For many years, and I just recently introduced the bill for this Congress, I call it the Open Fuel Standard Act, which I believe is a complement to the RFS. I introduced it in a bipartisan way, as I always have, with Congresswoman Ileana Ros-Lehtinen as my cosponsor.

And what the legislation essentially does is requires auto manufacturers to build cars that can run on alternative fuels in addition to gasoline. Mr. Shimkus and I have in previous Congresses teamed together to push this. This could include ethanol, methanol, natural gas, electricity, biodiesel, hydrogen, or a new technology. It would empower consumers to make a choice about which fuel was best for them. And I hope that we would take up this legislation.

Got the idea for it many years ago when I was the chair of the Western Hemisphere Subcommittee in the Foreign Affairs Committee and I drove into a gasoline station in Brazil and saw that there were many blends, many mixes, many choices that consumers had. And since I believe that choice helps keep costs down, it seemed to me that it was foolish for us not to do it in this country.

And when I learned more in those years about what it would cost to manufacture flex-fuel cars in America, no one told me it would ever be more than $100 a car to manufacture them. In fact, some experts said it was as low as $35 a car. The most anyone told me was $100. And so for such a little amount of money, it seemed to me almost criminal that we weren't doing it.

So let me ask Mr. Grundler, one of the major concerns with the RFS is the so-called blend wall. And can you comment on how adoption of my Open Fuels Act and the adoption of more flex-fuel vehicles might affect the blend wall?

Mr. GRUNDLER. That is hard to answer, sir. Currently, as has been stated, I think there are somewhere between 10 and 12 million flex-fuel vehicles on the road right now. But it appears, based on the evidence, that consumers are not using them to buy E85. I think roughly 100 million gallons of E85 was sold last year. Perhaps Mr. Sieminski has got a better number.

And it is likely that is due to a number of factors. Some owners don't know they have got a flex-fuel vehicle. Some owners have these flex-fuel vehicles but they may live in Texas where, I learned earlier, that there might be one station selling E85. And some are discouraged by the price of E85.

So your question, if there were more flex-fuel vehicles available would that change this pricing dynamic, and I don't know if it would. Today, I think Ford is roughly making 40 percent of their vehicles as flex-fuel; General Motors is 40, maybe, slightly above; Chrysler is making a significant percentage. So they are on track to meet their commitment of 50 percent of production. And yet the evidence to date shows that consumers have not been choosing to use the higher blend ethanols.

Now, that condition may change if the pricing structure for E85 changes. But that remains to be seen.

Mr. ENGEL. Yes. I believe that it would increase consumer demand. But I do agree with your thinking that a lot of people right now are not aware of it. It is not something that we promote or we push. And if people don't see it is going to bring them any kind of benefit at the pump, everyone likes to think they care about the environment, but they care more about their pockets, I think. I think that is part of it.

Let me ask Administrator Sieminski, would you agree, what would be your opinion, do you think that adoption of the Open Fuel Act would increase consumer demand for ethanol and other alternative fuels?

Mr. SIEMINSKI. I have to ask our people to take a look at it. I think the market itself is driving some alternative fuels. I just heard today from Ford that there is a very high demand. They can't even meet the demand for heavy pickup trucks that use compressed natural gas, for example.

So I think that there is some consumer demand out there for these fuels. And as Mr. Grundler said, a lot of it has to do with consumer behavior and what the price of the fuels is. If we had, either through a regulatory system or through the market itself, lower prices for these advanced fuels, then I think that there would be a lot less consumer resistance.

Mr. WHITFIELD. The gentleman's time——

Mr. ENGEL. Well, let me say—I see my time is up— but I just want to say I believe with all my heart that if it works in Brazil it can work here if we wish it to work. But I thank you both for your comments.

Thank you, Mr. Chairman.

Mr. WHITFIELD. Now, some of you in the audience may noticed that these two gentlemen on the left, Mr. Welch and Mr. Matheson, have been here the entire hearing. And some of you, when I stopped rotating, looked quizzically at me. And I want you to know I have great admiration and respect for both of these gentlemen, and I am not discriminating against them. But we have a rule in the Energy and Commerce Committee that if you are not a member the subcommittee you have to wait until every member of the subcommittee has asked a question. So while they are a member of other subcommittees on the Energy and Commerce, and they are valuable members of the Energy and Commerce, that is why we waited for that. So I didn't want you all to boo and hiss at me when I left this afternoon.

But I am delighted to recognize them now. And I recognize Mr. Matheson for 5 minutes.

Mr. MATHESON. Well, thank you, Mr. Chairman. And I would not boo or hiss you. I can tell you that. And I appreciate the witnesses being here today.

I have a lot of questions. I assume maybe if we can't get them all in, we can ask for written questions after. That would be great.

Dr. Glauber, you have talked in response to a few different questioners about RFS, the RFS impact on increasing corn prices and how that translated into the broader issue of raising food price. You mentioned that the drought may have been a more significant factor in that 1 particular year. Has the Department of Agriculture really tried to analyze this where they normalize that 1 year where there was a severe drought?

I mean, this is something that has been around for a long time. We are increasing the cost of corn over time, it has been going up. In your testimony you mentioned that. I just think it would be helpful to this committee to understand what the impact is on food or if the Department has had a chance to analyze that, taking out the factor of the significant drought impact.

Mr. GLAUBER. Yes. And it is a great question and an obvious one. We did actually look at this back in 2008. I believe I testified before an Energy Committee over in the Senate. And there, if I remember correctly, and I can get this to you in writing and get the study to you.

Mr. MATHESON. I appreciate that.

Mr. GLAUBER. But there the impact on corn again in the order of 30 or so percent impact, on soybeans in the order of 40, 45 percent, as high as that, and how that translated in, in terms of a per-

centage impact on retail food prices was actually pretty small, like in the order of a percentage point increase on CPI. Again, I want to be very careful here.

Mr. MATHESON. I understand.

Mr. GLAUBER. But again the point is, is the transmission is a little bit smaller——

Mr. MATHESON. I would be interested to see how are going, going forward, too. That was 2008.

Mr. GLAUBER. Happy to answer that.

Mr. MATHESON. Mr. Grundler, we talked earlier, in response to an earlier question, somebody was talking about the carbon emission benefits of advanced biofuels. Can you speak briefly to the carbon emissions from corn-based ethanol on a lifecycle basis?

Mr. GRUNDLER. I would be happy to. As you probably know, Congress, in developing the RFS, came up with basically two different categories of fuels and chose to grandfather any facility that hadn't commenced construction at the time of passage. So corn-based ethanol, most of that volume is, in fact, grandfathered, and so it is not required by law to meet the 20 percent greenhouse gas reduction threshold.

Now, we know over time that there are a number of economic incentives to improve the efficiency of your operation to look for cheaper crops, seek higher yield feedstocks. So we expect that that efficiency will improve. And, in fact, in our analysis of new plants and future plants out in 2022, when we did the impact analysis, did determine that those new plants would achieve the 20 percent reduction.

Mr. MATHESON. But the current plants, because they are grandfathered, are not.

Mr. GRUNDLER. Well, it depends. It was going to be a plant-specific thing. For example, those plants that may have switched from coal to natural gas would be more efficient.

Mr. MATHESON. Let me ask you, you have had a few questions also from folks about how you undertook the testing for impact on automobiles from going to E15. You may have answered this, but I just want to clarify this. Did it just focus on emission controls or did the tests include specific tests to evaluate engine and fuel system durability?

Mr. GRUNDLER. There has been a lot of confusion on that, sir. And I would be happy to give you the details. But the answer is that the Department of Energy looked at both, and in fact did tear down a number of vehicles and did a number of different types of testing to evaluate not just the emission control catalyst durability question, but also these other questions.

Mr. MATHESON. OK. So you will submit that for the record?

Mr. GRUNDLER. Be delighted to.

Mr. MATHESON. Great.

Mr. Sieminski, I wanted to ask you a question about RINs. Before 2013 they were selling for just a few cents. Beginning of this year, we have the price skyrocket. It was over a dollar at one point. I hear right now it is in the 80 to 90 cent range for a RIN. What caused the huge jump in RIN prices? And will rising RIN prices—what is its impact on the price of gasoline for consumers?

Mr. SIEMINSKI. I think we heard earlier from Mr. Glauber that the RIN price increases probably had a lot—the increases in the first quarter of this year had an awful lot to do with the uncertainties in meeting the program targets. So RINs would be very valuable if you thought that you weren't going to be able to produce the right amount of fuel.

As far as we can tell, and we have tried to look at this at EIA, we can't really see a big impact in the price of gasoline from what happened with RINs in the first quarter of this year. I do think that there might have been some impact in the diesel prices because of the way the program works. Going forward, if there aren't changes in the program, we would expect it to begin to impact——

Mr. MATHESON. Have you projected where you think RIN prices are going to be in the next couple years? Have you projected that out.

Mr. SIEMINSKI. We haven't because it is extremely difficult to do that without understanding what decisions ultimately are going to be made by the EPA.

Mr. MATHESON. Mr. Chairman, my time has expired. I will submit other questions for the record. Thank you so much.

Mr. WHITFIELD. Well, thank you.

And, Mr. Welch, you are recognized for 5 minutes.

Mr. WELCH. Thank you very much, Mr. Chairman. I appreciate being here and I have enjoyed the hearing.

And I want to thank the witnesses for all the work that do you on behalf of our country.

I have sat through this hearing because I have come to the conclusion that corn ethanol is bad for the—it is a bad environmental policy, bad energy policy, bad food policy. And that is largely because of two things that I have been hearing over and over again from everyday Vermonters, first farmers, who have just been hammered with the increase in the feed cost that is associated in part with the corn-based ethanol. And then, secondly, a lot of the small engine repair people are absolutely convinced that the ethanol is detrimental to these engines. And if I didn't believe it, my own chain saw got wrecked, and I am pretty upset about it, let me tell you.

So this is serious business for our farmers and for our recreation industry, anybody using a small engine. And Congress did it. So, you know, you are implementing it. But I just do have a few questions about it.

One is, you know, we did provide a safety valve. And last year when we had the worst drought in 50 years, more than 70 percent of the cattle country was impacted. Ten Governors, 156 Members of Congress, including me, in a broad coalition of farm and food groups requested an EPA waiver. And that was denied—on the RFS—that was denied. But in denying the waiver, the EPA appears to have created a stricter standard than Congress had, at least that is how I read it, rejecting harm to States or regions and instead determining that the agency needed to show that RFS implementation would severely harm the entire U.S. Economy.

So I need some clarification on that, because the spike in feed prices certainly hurt us. It hurt every agricultural activity associated with livestock. So I am wondering what it would take from the

perspective of where you sit for a waiver to have a valid factual basis for you to act. And I think I will address that to Mr. Grundler.

Mr. GRUNDLER. Thank you, sir.

There is no doubt that the drought had devastating effects, and where I am from in the Midwest I have seen it. Again, but the question before the agency was, was implementing the RFS responsible for these severe economic conditions? And we determined after extensive analysis and consultation and using a probabilistic statistic modeling framework to look at all these different variables in terms of corn yields and oil prices, that the RFS itself wasn't driving this demand. And it is because of the way our refining system has——

Mr. WELCH. So does that mean that if you have—the RFS standard requires more corn, obviously, to be going into the ethanol production, and that means less corn going into feed. And you have a drought. So the two probably work together. I don't know how you can precisely attribute how much of it is to the RFS and how much of it is to the drought. But obviously RFS becomes more difficult when there is a drought impact. So you are saying——

Mr. GRUNDLER. We ask ourselves the question, if we waived the RFS what would be the ethanol demand in the country? Which was, again, the ethanol demand, which is getting the corn and changing the commodity markets. And the answer was, in 89 percent of the scenarios that we ran, is that it would not change that demand. The refiners are demanding this ethanol for the reasons Mr. Sieminski mentioned, it is because they want the octane. It has economic value because it is cheap, cheaper than the other alternatives. And so we could have waived the whole RFS and they would still have demanded that product.

So it is a case-by-case situation. So in 2012, and looking at that year and looking at the price of oil and corn yields and all the other variables, that was the determination that we made. But that doesn't mean that if we were looking at the situation this year or next year with different market conditions that different result——

Mr. WELCH. My time is almost up. Thank you. But, you know, it sort of reinforces my concern about this demand that is created for corn for ethanol as opposed to food, because as many of my colleagues have pointed out, both sides of the aisle, it is having a real impact on food prices and certainly really wicked on these dairy farmers that are hanging on by their fingernails.

Mr. Chairman, I really appreciate you having this hearing. I think both sides of the aisle here share some concerns about this policy. So thank you.

Mr. WHITFIELD. Thank you, Mr. Welch.

And I want to thank the witnesses. We appreciate your being with us. And I hope that everyone in the audience enjoyed it as much as we did. And we intend to have a couple more hearings on this as well.

So that will conclude today's hearing. We will keep the record open for 10 days.

And we look forward to working with all of you as we move forward.

With that, the hearing is adjourned.

[Whereupon, at 5:05 p.m., the subcommittee was adjourned.]
[Material submitted for inclusion in the record follows:]

FRED UPTON, MICHIGAN
CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA
RANKING MEMBER

ONE HUNDRED THIRTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

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July 19, 2013

Mr. Christopher Grundler
Director, Office of Transportation and Air Quality
Office of Air and Radiation
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Mr. Grundler:

Thank you for appearing before the Subcommittee on Energy and Power on Thursday, June 26, 2013, to testify at the hearing entitled "Overview of the Renewable Fuels Standard: Government Perspectives."

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. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

Also attached are Member requests made during the hearing. The format of your responses to these requests should follow the same format as your responses to the additional questions for the record.

To facilitate the printing of the hearing record, please respond to these questions and requests by the close of business on Friday, August 2, 2013. Your responses should be e-mailed to the Legislative Clerk in Word format at Nick.Abraham@mail.house.gov and mailed to Nick Abraham, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, D.C. 20515.

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

Sincerely,

Ed Whitfield
Chairman
Subcommittee on Energy and Power

cc: The Honorable Bobby L. Rush, Ranking Member, Subcommittee on Energy and Power

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CONGRESSIONAL
AND INTERGOVERNMENTAL RELATIONS

The Honorable Ed Whitfield
Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Whitfield:

Thank you for your letter of July 19, 2013, requesting responses to Questions for the Record following the June 26, 2013, hearing before the Subcommittee on Energy and Power entitled "Overview of the Renewable Fuels Standard: Government Perspectives."

The responses to the questions are provided as an enclosure to this letter. If you have any further questions, please contact me or your staff may contact Cheryl Mackay in the EPA's office of Congressional and Intergovernmental Relations at mackay.cheryl@epa.gov or (202) 564-2023.

Sincerely,

Nichole Distefano
Deputy Associate Administrator
for Congressional Affairs

Enclosure

cc: The Honorable Bobby L. Rush, Ranking Member
Subcommittee on Energy and Power

Questions for the Record
House Subcommittee on Energy and Power
Committee on Energy and Commerce
June 26, 2013, Hearing
"Overview of the Renewable Fuels Standard: Government Perspectives"

The Honorable Michael C. Burgess

1. **How many vehicles have been tested with E-15 gasoline by EPA or DOE?**

The EPA and/or DOE have conducted or participated in eight test programs since the mid-1990s involving more than 100 motor vehicles. The studies were designed to investigate the potential impacts of E15 (a gasoline-ethanol blended fuel that contains greater than 10 and up to 15 volume percent (vol%) ethanol) on motor vehicles. Other, more limited testing involved nonroad vehicles, engines, and equipment. The vehicles were operated for millions of miles on E15 to evaluate its potential impact on exhaust and evaporative emissions, materials compatibility of engine and fuel system components, and drivability. The results of these studies, plus other relevant information obtained from studies conducted by industry, academia, and other government agencies, are thoroughly reviewed in EPA's E15 Partial Waiver Decisions and the E15 Misfueling Mitigation Rulemaking and are also included in the information provided below in response to question 2. Taken together, these studies formed the basis for EPA's decision to approve the E15 waiver request for model year 2001 and newer light-duty motor vehicles.

2. **During the hearing, you indicated that you were willing to provide technical information and/or reports resulting from vehicle testing with E-15, please provide that information.**

Copies of all relevant studies related to vehicle testing with E15 cited in the E15 Partial Waiver Decisions and the E15 Misfueling Mitigation Rulemaking are available in the docket. These studies can be accessed at http://www.regulations.gov by searching under Docket ID number EPA-HQ-OAR-2009-0211 and referring to the Supporting Documents section.

3. **What limit of liability does an independent private retailer have with respect to misfueling?**

Like other EPA fuels regulations, the E15 Misfueling Mitigation Rulemaking specifies which regulated parties can be held liable for violations and allows assertion of defenses to such liability if a party meets specified conditions. A retailer who properly labels fuel dispensers and did not misfuel or cause misfueling would not be held liable for misfueling violations. The E15 Misfueling Mitigation Rulemaking prohibits any person from selling, introducing, causing or permitting the sale or introduction of gasoline containing more than 10 vol% ethanol into certain vehicles and engines. In the preamble to the Misfueling Mitigation Rule, the EPA explained that "[t]he obligation of a retailer is to not misfuel and to not cause misfueling. Misfueling may occur in or as a result of varied circumstances…." The preamble further gave one specific example, that of a marina that sells fuel almost exclusively for use in boats, as a case where a retailer could still be judged as causing or contributing to misfueling despite labeling the pumps appropriately. For the vast majority of retailers, following the misfueling mitigation requirements of the

regulations will be an effective means to prevent misfueling and hence avoid retail liability for misfueling under the Clean Air Act.

The Honorable Robert E. Latta

1. **Could you explain the scope of the affirmative defense built into the quality assurance program for purchasing Renewable Identification Numbers (RINs).**
   a. **What must a RIN buyer do in order to be adequately protected under the quality assurance program?**
   b. **What level of 'due diligence' is required by the buyer?**
   c. **How does the Environmental Protection Agency define 'due diligence'?**
   d. **How will the agency communicate the criteria for due diligence to RIN buyers, so they are adequately protected by the quality assurance program?**

The affirmative defense mechanism described in the RFS Renewable Identification Number Quality Assurance Program (QAP) Proposed Rule would allow any party, other than the generator of an invalid RIN, who holds invalidly generated RINs verified through a QAP, to avoid civil liability for a prohibited act involving the transfer or use of invalid RINs for purposes of fulfilling a renewable volume obligation.

The proposed QAP rule would provide regulated parties a structured way to conduct due diligence and assure that RINs entering commerce are valid through audits of renewable fuel production and RIN generation conducted by independent third parties using quality assurance plans. The proposed QAPs would include validations such as verification of type of feedstocks, verification that volumes produced are consistent with amount of feedstocks processed, and verification that RINs generated are appropriately categorized and match the volumes produced. The proposed program would provide an affirmative defense against liability for civil violations under certain conditions for the transfer or use of invalidly generated RINs, and would specify both the conditions under which invalid RINs must be replaced with valid RINs, and by whom. The proposed program is voluntary, and would be available to RIN buyers who wish to take advantage of it. The agency is currently reviewing the comments received on the proposed rule and is working on the final rule.

The Honorable H. Morgan Griffith

On July 25, 2011, EPA published in the Federal Register a final rule, Regulation to Mitigate the Misfueling of Vehicles and Engines with Gasoline Containing Greater than Ten Volume Percent Ethanol and Modifications to the Reformulated and Conventional Gasoline Programs (40 CFR Part 80). In testimony before the House Energy and Commerce Subcommittee on Energy and Power on June 26, 2013, Mr. Christopher Grundler summarized that under this rule retailers who wish to offer E15 for sale must submit to EPA a misfueling mitigation plan, affix to their dispensers EPA required labels

that inform the consumer of appropriate and prohibited uses of the fuel, and submit to a survey to assist EPA in tracking the availability and sale of E15.

I have learned from fuel retailers that they are concerned about potential liability under the Clean Air Act in the event a self-service customer introduces E15 into a vehicle for which it is not approved. These retailers express concern that even if they are compliant with the requirements of the above referenced misfueling mitigation regulation, they may be found in violation of the Clean Air Act and possibly fined by the EPA or sued by a private party exercising their rights under the Act, if a consumer misfuels with E15.

If a retailer complies with the misfueling mitigation requirements of 40 CFR Part 80, and a person other than the retailer or the retailer's appointed agent introduces E15 into a vehicle or engine for which it has not been approved:

1. **Is that retailer in violation of the Clean Air Act?**
2. **Is that retailer guilty of misfueling?**
3. **Will that retailer be subject to enforcement actions by the EPA for violating a control or prohibition of the Clean Air Act?**

A retailer who properly labels fuel dispensers and did not misfuel or cause misfueling would not be held liable for misfueling violations. The E15 Misfueling Mitigation Rulemaking prohibits any person from selling, introducing, causing or permitting the sale or introduction of gasoline containing more than 10 vol% ethanol into certain vehicles and engines. In the preamble to the Misfueling Mitigation Rule, the EPA explained that "[t]he obligation of a retailer is to not misfuel and to not cause misfueling. Misfueling may occur in or as a result of varied circumstances...." The preamble further gave one specific example, that of a marina that sells fuel almost exclusively for use in boats, as a case where a retailer could still be judged as causing or contributing to misfueling despite labeling the pumps appropriately. For the vast majority of retailers, following the misfueling mitigation requirements of the regulations will be an effective means to prevent misfueling and hence avoid retail liability for misfueling under the Clean Air Act.

4. **Will that retailer be subject to the private right of action provisions of the Clean Air Act?**

Under section 304(a) of the Clean Air Act, federal district courts have jurisdiction to hear lawsuits claiming that a person has violated or is in violation of an emission standard or limitation. The phrase "emission standard or limitation" is defined in section 304(f), for purposes of section 304(a), as including "a control or prohibition respecting a motor vehicle fuel or fuel additive . . . ." In this case, EPA's E15 Misfueling Mitigation Rulemaking adopted various controls on the distribution and sale of the motor vehicle fuel E15. Beyond noting the jurisdictional provision in section 304, the EPA is not in a position to comment on the validity of any claim that might be filed under this citizen suit provision.

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