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RFS Volumes: Defining the Future of Advanced BioFuels?

Ryan Fitzpatrick & Third Way

Opening Remarks:

Senator Debbie Stabenow (D-MI)

Speakers:

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RYAN FITZPATRICK: OK, welcome, everybody. Thank you for being here. My name is Ryan Fitzpatrick. I'm a senior policy advisor with Third Way in the clean energy program. We're a think tank that represents the vital center. We focus on pro-business, progressive policies. And today, we're going to explore the recently released EPA proposal to lower the renewable volume obligation in the 2014 RFS and how it might affect advanced fuels specifically.

But before we get to our panel, I'd like to thank Senator Debbie Stabenow for being here and ask her to say a few words on this topic. Senator Debbie Stabenow of Michigan was elected to the United States Senate in 2000. She is the chairwoman of the Senate Agriculture, Nutrition and Forestry Committee and a longtime friend of Third Way.

Senator Stabenow has been a champion for rural development, innovation in the energy and transportation industries and land conservation, among many other issues. We're very

glad to have her here. Senator Stabenow? I think is on the way – luckily, I practiced my tap dance. The music – need to cue the music. Senator Stabenow? (Applause.)

SENATOR DEBBIE STABENOW (D-MI): Oh, thank you.

MR. FITZPATRICK: I said really, really nice things, I promise.

SEN. STABENOW: Oh my gosh, could you repeat them please? I didn't hear them. (Chuckles.)

MR. FITZPATRICK: We can send you a copy.

SEN. STABENOW: Well, thank you. Thank you very much and thanks for all of you being here. Welcome to the Agriculture, Nutrition and Forestry room. We usually set up a little bit differently. It's good to see you. And I appreciate all of you being here and your interest in something that is incredibly important.

And so, we're happy to have you here and be able to host you and thanks to Ryan and Josh Freed as vice president at clean energy at the Third Way. Third Way is such an important organization to really be thinking through together how we move forward and various ideas that allow us to think outside the box, inside the box, no body, just however we can really move things forward.

So the future of biofuels and the renewable fuel standard are incredibly important topics. I am a very strong supporter of the renewable fuel standard and when we talk about the importance of biofuels, it's something that we need to stress more and more, particularly in these times. And we need to be talking about the specifics of the RFS and what needs to be done to move biofuels and advance biofuels forward. As you know, we got some bad news on Friday. The EPA announced its draft to reduce biofuel requirements below 2013 levels.

I've expressed – I was given a heads-up phone call from the administrator, expressed my strong concern in opposition and would encourage all of you who care about this to do the same. This could reduce the incentives to build new biofuel production facilities and slow the development of advanced biofuels at a very critical moment. It could cost thousands of good paying clean energy jobs and mean less competition at the pump.

But here's the good news. It's not going to stop biofuels. We're not eliminating the RFS. It may slow the transition if we can't get this fixed. And the good news is this is a proposed change. And so there is time and the need to be weighing in in thoughtful and productive ways on how we can address this. But it is important that we get this proposal modified. We know that biofuels are reducing our dependence on foreign oil. It's about innovation. It's about creating jobs.

You know, I know that right now we're making a big difference already, about a million barrels a day in biofuels. And as you know, the 2010 Iowa State University study found that ethanol in our cars is reducing the price of gas by at least 89 cents a gallon. It's really the only real competition that we have at the pump right now.

I had the opportunity to be in Brazil in August with Secretary Vilsack where they have a 30 percent, as you know, blend requirement, very interesting. They are surviving that, by the way. Their cars survive that. The economy survives that and in actuality, is providing a much different level of competition every day, every time somebody fills up looking at prices.

We know across the country that we are finally at the point where cellulosic ethanol and advanced biofuels are moving. It's not just another, well, it'll happen in five years which I've been hearing for 15 years. It is now actually – it's here, which is very exciting. INEOS – I don't know if I'm pronouncing that. Is it INEOS – INEOS Bio?

MR. FITZPATRICK: INEOS.

SEN. STABENOW: INEOS, that's what I thought, has begun producing cellulosic ethanols at commercial scale in Florida. Sapphire Energy has paid off its entire \$54 million USDA energy title loan and will be producing a hundred barrels of green crude from algae by 2015. POET's Project LIBERTY broke ground last spring, is on pace to begin producing cellulosic ethanol from corn stover next year. DuPont is expected to produce cellulosic ethanol from stover in Iowa next year and I could go on.

So the future is here. It's now. And this is not the time to put on the brakes as we're talking about innovation and the opportunity for biofuels.

So what's the next step? Well, first, as I indicated, the EPA's proposal is just that. It's a proposal. There's a public comment period, as we all know. We need to make sure that people are commenting and weighing in.

Second, we need to pass a farm bill with a strong energy title which we intend to do that will support biofuels and advanced biofuels and the jobs that come from that.

And third, we need to expand tax incentives to overcome the upfront costs of bringing new pumps and new competition to gas stations on every corner in America. These tax incentives are small compared to the savings that we will see over time. If we really want a level playing field, we have to act like it in our tax code. And we have to open up the capacity for infrastructure in a very real and meaningful way so that we can have real competition for consumers at the pump.

And finally, for biofuels to secure their place as part of our energy portfolio, we have to address the blend law. The big oil companies are afraid of biofuels. We're seeing an awful lot of ads on TV right now. And I believe it's because they know that we're at the moment where the real competition begins. We've got to work to make sure together that we address the ability from the consumer standpoint and the economy standpoint to be able to have the real competition that will come from this industry. We've got to work together.

Once a gallon of ethanol enters the supply chain, it doesn't matter where it comes from and we need to talk about that. We need to have folks understand that. It doesn't matter if it's cornstarch ethanol. It's not a cornstarch ethanol problem. It's not a wheat straw ethanol problem. It's a biofuels problem or issue. So we have to have people understand this as well. Many of the new facilities coming online over the next 10 years, as I've said, will produce cellulosic ethanol.

So we have got to be addressing this right now. I really believe jobs depend on that. The economy depends on that. National security depends on us getting this right. We all know what needs to happen going forward and it's critically important that we get this done.

I really do believe that biofuels are a part of our energy future. And we've got to make sure that we are putting the foot on the gas pedal, not the brake right now and make sure that the gas pedal is a biofuels blend gas pedal. And I think right now it's very clear.

Frankly, with all the misinformation that's been out there, the scare tactics being used, that we start with knowledge and information. And we start from the perspective of the consumer, the economy and what we can do to really make our country energy independent and biofuels are very much a part of that future.

So I'm glad you're here. I am committed to being a part of making sure that this happens. It seems that nothing is easy around here. But the reality is that we're going to work together and keep moving forward on a very, very important industry. So have a great discussion. Thank you. (Applause.)

MR. FITZPATRICK: (Off mic.)

SEN. STABENOW: Thanks, everybody.

MR. FITZPATRICK: Thank you, Senator Stabenow, for being a fierce and steadfast supporter of clean energy technologies. We really appreciate it, all of us at Third Way. So welcome back again.

To let you know our priority at Third Way in the clean energy program is to encourage federal policies that are going to promote innovation and deployment of clean energy

technologies including solar PV, nuclear, electric vehicles and, of course, advanced biofuels. You can see the entire range of our policy ideas in a product that we call the PowerBook. It's an online product developed specifically for congressional staffers. You can find it at powerbook.thirdway.org or Google it or just find one of us from Third Way and ask us about it. So there's my one and only shameless plug for the day.

One of the things we stress in the PowerBook in the biofuels section is the important role of the RFS in bringing advanced fuels, cellulose and others, into the market. Long-term stability and guaranteed market demand have driven billions of dollars into biofuels technologies that provide ever increasing environmental benefits and resource efficiency and this has all happened in the span of less than a decade.

But at Third Way, we were concerned about if and how major changes to biofuels policy, like the announcement that we heard from EPA on Friday, would disrupt this progress towards commercialization just as many of these technologies are finally reaching the market. And we figured that if this was of interest to us, it would also be of interest to other supporters of advanced biofuels.

So we have invited a panel of speakers who are well versed in advanced biofuels industries as well as fuel markets in general to give their thoughts and to answer our questions and any you might have. So I'm glad to be joined by Brooke Coleman of the Advanced Ethanol Council, Paul Beckwith with Butamax, Ben Salisbury of FBR Capital Markets and Brent Erickson of the Biotechnology Industry Organization, or BIO.

Each of our guests are going to speak briefly. And following that, we'll open up the panel to question-and-answer. So start thinking of any pressing questions you might have for later. So we can get started now with Brooke.

BROOKE COLEMAN: Thank you, Ryan, Third Way, Senator Stabenow for doing this briefing. I think it's really important.

My name is Brooke Coleman. I'm going to cover a couple different things. I should tell you that my last briefing, the room was small and the screen was big. Now, we've got a big room with a small screen. So I did the presentation for the other room. So some of these – some of these slides will have small font.

By way of an introduction, I was having a conversation with a reporter last week and we were going back and forth on the RVL and why it was good, why it was bad, 11 o'clock at night. I had never met this reporter face to face. And at the end of the conversation before I went to bed, she said, you live in a complicated world, lady. Now, this is one of the – (inaudible) – problems with having an E on the last – at the end of your name when you're

Brooke Coleman. But we do live in a complicated world. (Laughter.) I'm not a woman. (Laughter.) We'll clear that up.

The other thing that happened this morning is we were in an office over at Hart and a staffer said, the whole RFS thing is getting more intense, you know, the whole – you're reducing our dependence on foreign oil and creating jobs. That's important. But we need to deeper dive on how this thing works in order to defend it. And that's what I'm going to try to do today a little bit. I'm going to pour some water over your head and then everybody in line is going to fill in and make you actually understand what I was talking about. That's my – that's my strategy.

With regard to where we stand, this is only a six-year-old program. And it was implemented during a global recession. It exists to create demand in a noncompetitive marketplace. If there's one point that gets missed here as we're talking about foreign oil dependence and jobs, it's that we need the RFS to do what a free market would do on its own.

Today's marketplace, we can't show up and say we have a value proposition and it's 30 cents cheaper than gasoline, Mr. Exxon, would you please take it. They say no, we're not going to do it. We do not want to erode our control over the marketplace. That is – that problem exists because we don't have enough competition. That problem exists because OPEC controls price at the top. The result of that problem is it – is it dampens innovation. It doesn't allow a place for investors to get in, change the world. And that's what the oil companies really want.

The other thing is the RFS (as ?) whole. We've produced every gallon we've been asked to produce. There's some flexibility in the program and we'll talk a little bit about some of these numbers. But this whole idea that we're just not stepping up and producing the fuel is just wrong. And cellulosic is just beginning to pump – to get – to drive through a commercial scale.

This is a map of a progress report that's actually in this room and out front that we did and others in this panel will talk about it. But these are the facilities that are coming online. And so, they're popping up all over the country. Senator Stabenow talked about the INEOS project. We're talking about ethanol being produced in Vero Beach. Five years ago, the idea of ethanol being produced in Vero Beach would have been laughed at. And now, we're producing ethanol in Vero Beach.

So here's what I really want to focus on: how this thing works, not so much, well, we've got these increasing volumes and we need to reduce our dependence on foreign oil and 400,000 jobs. Again, all that stuff's important. We've created an amazing industry in this country in the last decade at a time of really, really tight supply. That's true. But here's how it works.

The RFS is like a big piece of – a big pizza and they slide it over and all the oil companies get a slice. And the slices are big if you're a big oil company and the slices are small if you're a small oil company. Oil companies look down, they say, OK, well how many gallons do I have to do? OK, I have to do 500 million gallons this year. So I have to come up with 500 million RINs – renewable identification numbers – to give to EPA at the end of the year.

Second level, how do you get them? Well, you can go buy 500 million gallons of ethanol and you can say, thanks for the ethanol, the RIN comes for free with it, hand it to EPA and say we're good. That's the easiest way to do it and the obvious effect of that is higher demand for renewable fuel, growing industry. Not the oil industry's first choice.

The second choice is they can purchase RINs on the open market. They can just go out and buy them and hand them over to EPA and say we're good. The effect of doing that is RIN prices go up. Increased demand in the marketplace, RIN prices go up. Or they can use a banked RIN from the year before. You've used 20 percent of your RINs and move it forward. That's the get out of jail free card. The oil companies do that from behind the computer: well, I got one. I'm just going to send it to the EPA. So I don't have to go buy anything. Those are your options with regard to complying with the RFS.

This is where it gets a little more complicated because very few oil companies go, I'm going to buy a gallon. I'm going to take the RIN and I'm going to hand it to EPA. That's not how it usually works. This is what's going on in the marketplace right now. Bear with me on the concentric circles. I need a bigger screen for this. But basically what happens is the oil companies don't want to go past 10 percent ethanol, to use an example.

So what do they do? They refuse to blend gallons. So they don't do the thing on the left in my previous slide. So they go and buy RINs. They don't want to do the gallons. They buy RINs. RIN prices now go up. And you get more and more oil companies colluding and saying, I'm not going to do E15. I'm not going to do E85. I'm not going to do B3, B4 or B5 with regard to biodiesel. I'm not going to sign long-term contracts to make this thing work in the markets I know it can work in.

So I'm going to buy RINs. And then RIN prices go up. When speculators see that, they say, well, I'm getting in too. So I'm going to jump in. And then the prices go up even more, as The New York Times reported before. Here's what's missing from the discussion. This is a good thing. RIN prices go up.

That means that when Exxon and Shell decide, nope, we're not doing it, the regional and small independent oil companies suddenly when they're getting – buying this gallon of fuel, it come with a 50 cent RIN or a 60 RIN or a 70 cent RIN that they turn around and sell to Exxon or sell to a marketer. So when you're talking about Cumberland Farms or Gulf or

Burke Oil up in the Northeast, these are the three biggest petroleum marketers in that area. They like it because that incents good behavior with regard to RFS compliance. And the bottom line is that doesn't increase gas prices.

So that's how the program works. The RIN prices go up when there's intransigence in the marketplace, when the monopoly manifests itself through the RIN program by cranking up prices. And then higher RIN prices pull down the monopoly and pull down 90 percent control. And we just need to tackle this problem.

High RIN prices should not scare anybody. Here's why. Oil companies, what do they do? They get it. They come to you. They go to the Obama administration. They come into your offices and they say: well, RIN prices are going to ultimately get us if we let this happen.

So what are we going to do? We're going to attack the concept. We're going to try to convince everybody in this room, the press, the president that high RIN prices equal high gas prices. So what does API say? RIN prices are near an all-time high. The RFS is a great economic threat and it must be stopped immediately, Jack Gerard, this past July to energy and commerce. That's baloney, straight up.

BP earnings report, it says it's profiting from RIN trading. "We're net long on RINs. We've been able to trade into this spike recently and have done quite well out of it. I'm very pleased about that," member of API. ExxonMobil, when asked about whether high RIN prices have cut into their bottom line, quote, no, not at all. And they were net buyer.

Murphy Oil, they reported that their increases in profit were, quote, "primarily due to better results for ethanol production operations and higher sales prices for ethanol renewable identification numbers in the current period. Profit from ethanol RIN sales was higher in 2013 due to significantly stronger sales prices for these credits."

So while API is coming here and trying to turn RIN credits, which make the market work and make the RFS work and the blend well falls down and the E85 goes into a gas tax, their members are out there moving RIN prices around and making money. Got to give them credit, but that doesn't mean that we have to believe them.

And there's an oil industry economist, Philip Verleger, who said something interesting. He said, "The U.S. renewable fuel program has cut annual consumer expenditures in 2013 between 700 billion (dollars) and \$2.6 trillion." You might look at me and go, you've got to be kidding me. Well, what he's basically doing is he's saying, look, ethanol's been cheaper than gasoline. That's what the economists usually focus on.

What he did, which is controversial, is say, well, because of all this supply, which is the equivalent of Ecuador on the market, we've had decreased speculation. And if we didn't – if

it was even tighter, we'd have a massive spike in speculation which would crank prices up to over 2008 levels. Can you model that? No, it's – he wrote it in a newsletter.

But this is a guy, in case you're wondering, is not paid by anybody in the ethanol industry. This is an oil economist who just comments on what he thinks is going on in the oil markets.

And one way to test whether API is telling the truth is just to go and see if what's happening – what they're saying is happening in the marketplace is happening in the marketplace. There is no correlation between increases in RIN prices and gas prices. You see last spring when prices were increasing in the RINs, you had gas prices coming down. Then there was another blip in late spring. Gas prices came down. RIN prices went up. Then you had the big blip right around the congressional hearings with regard to RIN prices, skyrocketed. Gas prices didn't go up and actually came down.

Then you had the leaked draft with regard to the RVO, that geez, the EPA might back off on its aggressiveness with regard to implementing the RFS and you had RIN prices plummet which is a transition to my last slide and I think my time's about up.

The 2014 RVO, why does it matter for us? Well, this is what it does. You can see there in the left column, the type of fuel in the 2013 RVO. We're going to hit all those marks. So, for example, if you look at advanced biofuel, this year it's 2.75 billion gallons. What they're proposing for next year is 2.21. Their range under consideration does not even get – for next year does not even get up to what we're going to do this year. With regard to renewable fuels amount, we're going from 16.55 down to 15.21.

So when people say, well, the Obama administration has totally changed its position, this is it. They're bouncing off of the imaginary blend wall and going backwards.

Now, from our perspective, there's a couple of problems with that. The first is an unwarranted reductive adjustment in the broader advanced pool is a negative market signal for advanced biofuel investment. So if we're looking at none of our guys want to build one plant. So even if they're constructing a plant, they want to build 10 more, right. Nobody wants to own one fuel plant at 40 million or 20 million gallons a year. That's not what you go in front of your investors with. Those investors are obviously going to come to us, our guys, and say, OK, so about those other nine plants, is the Obama administration going to actually stick to the program? So it's obviously a negative signal even on the ground right now as a proposed rule.

Second, the reductive adjustment to renewable fuel is based on a blend wall that is legally dubious and increases investment uncertainty around the program. I was asked to stop briefly on the legal part of this. You're going to hear more about this, I guarantee it. Here's

the deal, EPA has the authority to waive gallons when there's not enough supply for advanced biofuels, which they've been doing. Our industry doesn't have an issue with that.

On the big number, so as it applies to corn ethanol, et cetera, they have the waiver authority to waive it for severe economic harm or supply shortages. And people have proposed waivers and they've been rejected. At no point in the rule does it say they have the ability to waive gallons when there's distribution problems. Oh, there's not enough E15 or the oil companies won't do it.

Here's why that's important and I'm not going to frame that legally. I'm a lawyer. That's why I'm not going to do it that way. I've learned. I'm going to frame it with legislative history.

Back when we were all doing the RFS and the oil companies decided that they were going to swallow this thing politically, what did they attack? They attacked the waiver provision. The waiver provision allowed waiver for supply and severe economic harm, high hurdle. They tried to get in distribution problems.

Why did they do it? They control distribution. They make the decisions about whether these marketplaces go to E15, whether they go to E85. If you don't believe me, go talk to the people that are trying to do E15 pumps and E85 pumps and see what the Phillip 66s are going with regard to these agreements, et cetera. And so, if the industry can lie down and not comply and that's a reason for a waiver, then the program ceases to be a catalyst going forward.

Final point and then I'm done, recoil from so-called blend wall in the face of higher RIN prices raises questions about whether RFS administrator is going to let RINs do what they were designed to do. I tried to explain to you – and people will get into more detail – how the RIN program works. That's what our investors believe in.

Absent a RIN, to make the free market do what it would otherwise do – to make a, sorry, noncompetitive marketplace do what it would do if it was a free market, our investors don't have a – do not have the capability to reasonably anticipate demand. They can't go in and say, you know what, if we beat gasoline on price, Exxon will be forced to buy our fuel.

With a RIN, what happens is intransigence, Exxon refusing, means that other oil companies are going to have an incentive to buy the fuel. And that's why they get in. If we back off to the point where we don't let RIN prices do what we want to do and the Obama administration things that high RIN prices are a sign that the program is not working when in fact it's a sign that it is, we will have a problem.

Thank you very much.

MR. FITZPATRICK: Thanks, Brooke. Nice work, girl, lady. (Laughter.) And if anybody's interested in sitting, there are some seats up here in the first three or four rows. So feel free to come up at any point.

Our next panelist is Paul Beckwith. Paul is the CEO of Butamax, which is a joint venture of BP and DuPont. It is – Butamax is working to commercialize the production of an advanced biofuel known as biobutanol. Prior to taking the helm at Butamax, Paul spent over two decades at BP managing initiatives in vehicle performance, fuels marketing and global product strategy. Paul?

PAUL BECKWITH: Thank you. So thank you, Ryan, thank you, Brooke and thank you, Senator Stabenow. And thank you all for coming to this – to this session.

I just wanted to give you a brief background on who Butamax is before diving into the points in discussion. So Butamax is a 50/50 joint venture between BP and DuPont. It goes back to 2003, aiming to leverage DuPont's industrial buyer technology expertise which had already been proven in the market and BP's advanced biofuels experience. The two companies got together and they identified isobutanol as an optimum biofuel based on two factors really: the first, potential for economy manufacture through new technology, and secondly, its value as a fuel component.

So after the RFS was passed, or RFS2 was passed in late 2007, Butamax was formed to basically commercialize and continue to advance the technology that DuPont and BP had developed together. And that has actually been successful and we're actually breaking ground on our first facility earlier this year. We are implementing technology, the first phase of our program to retrofit an ethanol plant in the Midwest to produce biobutanol.

So we're focusing on biobutanol really for three reasons. It's basically a good – a good biofuel for firstly because it improves refining economics. And that's because it has excellent blending properties. And it basically improves the economics of gasoline manufacture and allows refiners to make more gallons of fuel product from a barrel of crude oil.

The second point is that butanol overcomes the blend wall. So a 16 percent butanol blend actually meets all the same fuel specifications as a 10 percent ethanol blend. But a 16 percent butanol blend has double the renewable energy content. So it's equivalent of E20.

So when you talk about the blend wall, butanol is actually an ideal way of getting past the blend wall because it basically is compatible with existing vehicles. It's compatible with existing infrastructure. It meets existing fuel specifications and yet it's equivalent to E20 in terms of its contribution to the renewable energy in the fuel pool.

And thirdly, the technology has high similarity to ethanol production. And what that means is that economic retrofit of existing facilities is possible and that means that our commercialization is not dependent on building large numbers of greenfield facilities. But actually we have the capability to repurpose existing ethanol plants to become biobutanol plants. And therefore, we can implement the technology much more quickly and with much less capital than would otherwise be required.

So in terms of the EPA proposal, we understand that this is really driven or motivated by concerns that the blend wall and the associated increase in RIN prices will drive up gasoline prices for consumers. We fundamentally believe that this is mistaken for three main reasons. Firstly, there are very good options for moving beyond E10, such as both E85 and drop-in biofuels. And the RIN mechanism, as was explained earlier, is basically the enabler to allow these fuels to get into the market.

The second point is that while it has always been expected that RIN prices would increase, there is absolutely no good reason why this should affect the gasoline price for consumers and I'll explain that in a slide or two. And thirdly, the contribution of U.S. biofuels to global energy supplies is actually material relative to the oil market and therefore does indeed contribute to reduced oil demand and therefore reduced oil prices.

So this chart just shows some sales data from the state of Minnesota from 2013. And what the chart on the left shows is basically the price of E85 versus 10 percent ethanol. And the green line is the price that could be – that is effectively enabled by the RINs as they existed in the market in this year. And so what it shows is that that basically the RINs allowed retailers to discount E85 by about 25 percent relative to ethanol while maintaining their margin.

Now, in fact, retailers didn't fully discount by that amount but they did discount E85 by somewhere between 10 and 20 percent during this year. And if you look at the chart on the right, what that shows is that E85 sales actually rose by 200 percent on average. And this is across 200 sites in Minnesota. So the price reduction that was enabled by the higher RIN price actually was very effective at driving E85 into the market. So as I say, 200 percent increase on average and that was really without trying.

So most of those – most of those gas stations were not really promoting the product. They were just pricing it at a level that consumers considered to be fair. And at that point consumers started to buy it. But the site that's shown in green is a site that was actually trying to sell E85. And they achieved a 400 percent increase in E85 sales. So the idea that the blend wall is this insurmountable problem is a myth.

The mechanisms that are included in the RFS work. And this here was the first year that the RIN prices really started to work in the way that the legislation has intended. And as soon as – as soon as that happened, the mechanisms actually worked to achieve the targets of the RFS. The second point that I wanted to make was just to show that there is no reason why high RIN prices increase gasoline price for consumers.

So apologies for the table, but if you look at the top line, the first column, you've got a gasoline price of \$2.88 a gallon which is – this is an example from the summer of this year. And that's the base cost of gasoline out of the refinery. And in this refinery, in this example we're assuming that the refiner acquires RINs from the market and then basically passes on that cost to the blender.

And so in this example, the 2.88 becomes 2.97 because of the RIN price being passed onto the blender. And so – and so, then you look at the blender's economics. So the blender has to – has to deal with the fact that the gasoline has gone up. But they also have the benefit of blending ethanol. So if you look at the 10 percent contribution of ethanol to the gasoline blend, then that costs the blender 25 cents.

But they also in blending that ethanol, they generate RIN credits worth 8 cents. And so the net cost of the ethanol to the blender is actually only 17 cents. And so, then when you work out the product cost for a gallon of E10, it's \$2.84, which is exactly the same as it would be if there was no RFS at all. And so, there is no net cost increase for the blender. It also illustrates, by the way of course, just the very fact that ethanol reduces the cost of gasoline for consumers. So the cost of gasoline with ethanol is 2.84 whereas the starting point was 2.88. So ethanol is actually contributing to both reducing prices but also it's very clear that there is no good reason why high RIN prices should equal high gasoline prices.

So just to conclude, the blend wall is basically only an issue if you do nothing about it. I mean, it's sort of a no-brainer. But and in the Midwest, there are independent retailers doing something about it. So there are companies who are actually putting E85 into the market. They've succeeded this year because they made that investment. And with the combination of actually increasing distribution and fair prices, E85 sales have been shown to be able to grow dramatically. Consumers indeed want to buy it when it's priced fairly.

The second point is there is no good reason why high RIN prices should equal high gasoline prices.

Third point is that energy supply by U.S. biofuels is material on a global scale and sufficient to moderate oil demand and oil prices. And then into sort of implications for business, so if the renewable volume obligation is set at a level that equates only to E10, this will cause RIN prices to collapse. And so, it will basically disable the mechanisms that are included in the

renewable fuel standard for actually allowing these products into the market. And so, it basically will materially – well, severely if not totally limit the ability of these products to actually succeed in the market.

Clearly this proposal will undermine investor confidence in advanced biofuels and it is the case that this industry is on the verge of massive growth. Huge technology investment has been made. Huge progress has been made and now commercial projects are underway. It is on the verge of actually becoming reality as the examples shown earlier around our own experience shows.

And our belief actually is that the proposal long-term will have the opposite effect than the effect intended because by basically reducing demand for biofuels, you're increasing demand for crude oil and therefore will actually underpin oil prices and actually raise cost for consumers. So clearly this is only a proposal at this point. There's an opportunity to comment. We clearly want to see this change during this – during this process. Commitment to biofuels is essential or is a key benefit to the U.S. economy that we support.

Thank you.

MR. FITZPATRICK: Thank you, Paul. Our third speaker is Ben Salisbury. And Ben is a senior vice president and senior policy analyst at FBR Capital Markets where he analyzes political and policy trends likely to affect energy and natural resource sector investments including crude oil, alternative energy, climate change and environmental regulation. He previously served as senior advisor for policy and international affairs at the Department of Energy where he focused on economic analysis, climate change and African and Middle Eastern affairs. Ben?

BENJAMIN SALISBURY: So thank you and good afternoon. So I just wanted to – figure out how to work this thing. OK, so the first thing is so, as you said, I'm Ben Salisbury. So just the disclosure, always, is these are my views. They don't reflect those of FBR Capital Markets or anybody else. Also it's important to note that neither I nor FBR has any interest or advocacy position on any of this. This is simply an economic analysis that we've done and we don't take any position one way or the other. And nobody's going to be able to see that, even me.

But the point of this slide and I think what I really want to emphasize to you today is that the real winner for RFS 2014 was set to be biodiesel. And the advanced biofuel portion of the renewable fuel standard is where the game was to be made. And so, it's going to be difficult for you to see that but essentially if the RFS had proceeded as we expected that it could have and would have, what you would have seen most likely is a very slight increase in corn ethanol from somewhere in the neighborhood of 13 billion gallons to closer to 13.6, so 600 million gallons of corn ethanol increase but a dramatic increase in the demand for biodiesel

which is an advanced biofuel which by definition significantly lowers greenhouse gases, from the neighborhood of the mandate of 1.29 billion gallons to close to 1.7, maybe as much as 2 billion gallons for 2014.

The reason for this and I think the way that the previous speakers laid out very carefully is how this RIN market actually functions, right. And what happens is that that RIN price signal creates an incentive for somebody to capture the arbitrage. That's all that it does.

And so, when I talk to my clients, I tell them to model this as a tax, as a tax on one type of activity and a tax credit for the other type of activity. When you model it that way, what you see – and this is just sort of basic – I tried not to bore you all with economics. But the basic element of resource economics is that these incentives will flow up and down the value chain according to the elasticities of demand.

So when you have a source of supply and you have that RIN value that is just as a matter of law inserted into the middle of the value chain at the blender level, that blender has a powerful incentive to capture that RIN value, \$1.30 on something it doesn't cost – the biodiesel doesn't cost them \$1.30 premium to acquire. There's no blend wall in biodiesel, not a meaningful one anyway. And so he has a powerful incentive to pay more for the biodiesel and he still makes money because he captures that RIN value and then that biodiesel producer has an incentive to pay more for his feedstock and it flows up and down the value chain. The customer gets a discounted product. The blender captures it and so on and so forth.

And so, when you model with that – model it that way, the economics are very compelling. The issue here that is crucially important as it relates to advanced biofuels and the growth of the advanced biofuels industry is additional capacity because there's quite a bit of biodiesel capacity that already exists in this country and could produce biodiesel. There's plenty of guys who can produce biodiesel at below the cost of oil today.

OK, the issue is additional capacity, all right, because there's a lot of plants that are at the higher end of that cost curve. These tend to be smaller facilities or based on location, right. So if you want to build new capacity, if you're going to come to somebody like me and ask for a hundred million dollars to build a new plant, you've got to show me a 70, 75 percent IR on that plant, right, to deploy new capital.

OK, and the deployment of new capital in my personal opinion is the issue that's been facing this industry that was trying to grow at the time of a credit crunch, right. If you came to me for new capital, no matter how good your idea was four years ago, you were out of luck because I didn't have it, all right. That's not true today and that's not true especially with the RIN price and a transparent RIN line.

OK, so when you just look at the straight economics of advanced biofuels and you pay very little attention to the global policy, the climate change, you pay very little attention to anything else, fuel independence, energy independence, if you don't care at all about that and you just look at the straight economics of feedstock costs, plant costs and delivery costs, what you find is that there's ample incentive to build new capacity today, right.

What investors need to know is that that ample incentive will exist in two years when that plant comes online and five years when they actually start getting return from their investment of a hundred million dollars, right. So if you talk to the oil companies or if you have Google in your office, what you'll see is that one of the reasons the oil companies like to operate in the United States, especially the Gulf of Mexico, is the rule of law. There's a predictability to operating in this country that you don't get in most other operating environments. So they will pay a higher cost for labor, for acreage in the Gulf of Mexico than they will in other places. And they will tell you they will pay that higher cost because of access to markets and predictable regulatory regime.

That exact same thing applies to other fuels, right. So if you look at the proposal for the RFS 2014, I think the most significant impact to my relationship with my clients whose interest is in financing plants and not some of the other things, the most interesting thing is I have no idea what the rules – (inaudible). The EPA just told me that supply is the same as demand. And with that kind of flexibility in the English language, anything could happen. I mean, if that is how the English language works and that's how the law works, then I don't see a runway for this policy or this plant or any other to make sense five years down the road when I really start to realize my investment, right.

The second is litigation, right. As alluded to earlier, you are inevitably going to see litigation on this, right. It is a creative interpretation of the way the statute is written, right.

So again, you're going to have a constraint, a constriction on the deployment of capital to build out that new capacity which is by definition low cost productive capacity, right. The new stuff that comes online is going to be the best of the best because of the uncertainty that comes along with it, right. The same incentives that apply to oil companies apply to other fuels and having certainty and transparency in that market.

And then the other thing I think that, you know, I was sort of asked, you know, as somebody who is interested in or focused on the environment, why is this important? Another reason that I think it's important that I haven't really heard mentioned very much but I would sort of take it very seriously if I was – considered myself a progressive which would be what does this mean for the renewable portfolio standard.

What does this mean for cap and trade? What does this mean for climate change? What does this mean for every other investment, right, because I cover all energy and natural resources, right. And if the government has set out a policy for reducing SO₂, reducing carbon, increasing renewables, right, and I can find out three years into the program that supply doesn't mean what I thought it meant, right, that has a chilling effect on not just biofuels but all environmental control investments.

And so that's something I think that needs to be taken very, very seriously that I've heard almost no discussion of whatsoever. And again, I have no dog in that fight. But as somebody who is involved in the business of allocating capital, that's something that I'm going to look at every single proposal that comes along to address one of those needs.

So I'm not going to run through all of the economics because I think it might bore you a little bit. But I will just leave it there with the emphasis that the decisions that are being made today are coming at a crucial time for capital allocation. And people who are prepared to invest in this space are watching this very, very carefully. And the outcome has the potential to be very binary.

So I'll leave it there and answer questions later.

MR. FITZPATRICK: Thanks, Ben. Our final speaker is Brent Erickson. Brent is executive vice president in charge of the industrial and environmental section at the Biotechnology Industry Organization, or BIO. BIO represents more than 1,200 biotechnology companies, academic institutions and state biotechnology centers around the world. Brent previously served as legislative director to Senator Alan Simpson of Wyoming and later as the Washington representative for the American Petroleum Institute. Brent?

BRENT ERICKSON: Well, thanks very much. It's a pleasure to be here today to talk about the RFS and you've already mentioned what BIO is. I don't think – I think I'm going to have to have somebody advance these. Next slide please.

So these are some of the companies we have. We have over 50 advanced biofuels companies that we represent. We represent a broad spectrum of biofuels from conventional ethanol to cellulosic to algae to drop-ins. And we also have companies developing new technologies for renewable chemicals and other bioproducts. Next slide please.

So, you know, the RFS was designed to provide, as other speakers have said, provide a supportive and stable environment for private companies. And it has really worked well. We've attracted a great deal of foreign investment. We've created jobs. We've started to install plants. There's R&D that's continuing. And it's really worked as it was intended to.

I think what's happened now is all of a sudden the EPA has done a 180 degree turn. And as Brooke pointed out, what they're basically saying is, gosh, people are driving this. Gasoline demand is down so we're going to expand the definition of the waiver to say if the gasoline is down we're going to just kind of roll back renewable fuels. And this is a radical departure from what EPA has done in the past. And so, we're all kind of stunned by this frankly. And the administration now is saying they're trying to develop a new durable methodology to evaluate biofuel items.

But I think it's hard for an administration to develop a durable methodology for setting the RFS volumes if they start by asking the oil refiners how much of our product they're willing to accept and blend. And that's what this amounts to. It's a very strange situation. So this proposed rule if finalized and carried into the future could seriously slow the growth of advanced and cellulosic biofuel production. It will discourage additional innovation in biotechnology and enable significant backsliding on our national environmental goals. Next slide please.

As Brooke also pointed out and to his point, the advanced biofuels industry is a very geographically diverse and can use a broad variety of feedstocks. And many companies are starting to build these first of a kind advanced biofuels facilities around the country. Many of these significant commercial scale projects are slated to be finished in 2013 and 2014. And I know that API is very fond of saying that cellulosic fuels are fictional fuels. But they're not and I'd like to show some pictures – next slide – of some of the facilities.

Senator Stabenow mentioned INEOS. They're using municipal solid waste. This is an 8 million gallon plant they just commissioned this year. If you don't know INEOS, it's a very large company. It was spun out of BP Chemicals and is one of the largest, if not the largest refiner in the world. So they're making a very significant investment here because of the RFS. Next slide please.

This shows DuPont's demonstration facility at Vonore, Tennessee, and the new commercial facility they are building in Nevada, Iowa. They project completion of this first commercial scale facility which has a capacity of 30 million gallons by the end of 2014. Next slide please.

This is the POET DSM facility. They project completion of this 25 million gallon LIBERTY project in Emmetsburg, Iowa, by mid-2014. And this, again, this facility attracted overseas investment by DSM which is one of the world's largest materials pharmaceutical and nutritional supplement makers. Next slide please.

This is a picture of Abengoa's facility. It's in the final stages of construction. It's a 25 million gallon facility in Hugoton, Kansas. And over the last month or so, there are about 1,000 construction workers on this site in rural Kansas building this facility. So you can see that

the job creation is not just potential now. It's real and that the RFS has really worked to attract foreign investment because it's the only policy in the world like it. Next slide please.

When we're looking at jobs, the conventional biofuels industry has created more than 400,000 new jobs for farmers, engineers, facility operators and construction workers. The advanced biofuels industry under the RFS would create twice as many jobs through ongoing development of technology and biorefineries – advanced biorefineries create more jobs because they're more complex facilities.

You have to pretreat the cellulose. You have to gather it, store it and it's a very significant job creation and rural economic development machine. It also can create more jobs through the development of new energy crops which is going on around the country. And this fight really is not just about ethanol. The RFS has driven rapid innovation in the biotechnology industry.

While it was necessary for development of advanced biofuels, biotechnology is also being used to produce renewable chemicals and bio-based products that use agriculture feedstocks and the fact is the United States is in the middle of a biotechnology revolution that is changing how we use energy, where we get it, how we make it.

And the RFS has driven this and driven companies to develop these technologies and driven advances even in synthetic biology. And this is a story that's not reported on. But it's helping America keep its lead not only in biofuels but in innovation and technological innovation. Next slide please.

So if we look at environmental performance, according to the recent analysis by Dr. Michael Wang of Argonne National Laboratory, the greenhouse gas emission profile of biofuels are rapidly improving with more efficient processing technologies while the profile of U.S. petroleum continues to get worse as we rely more and more on Canadian oil sands. So if you look, the RFS has mandatory greenhouse gas reductions of 20 to 60 percent versus petroleum.

And full utilization of the U.S. cellulosic biomass potential could reduce U.S. transportation-related greenhouse gas emissions by 80 percent by 2050 according to the national – I'm sorry, the Natural Resources Defense Council. So now with this new revised RFS, it would seem that the administration is abandoning this climate change goal. Next slide please.

The RFS really is the only – is currently the only congressionally authorized client program operating for transportation fuels. If you look at the chart, the bar on the left is Canadian tar sands and the smaller bars on the right are biofuels. So you can see that it's a very big difference in biofuels and Canadian tar sands.

You know, I worked on the Hill during the writing of the Clean Air Act and we worked on the acid rain provisions back then. And the coal and oil companies came to us and said, you know, gosh, don't enact this acid rain program. We really can't do it. It's going to put us out of business. But Congress went ahead and did it. It didn't put them out of business. They installed best available control technology and new source performance standards were enacted and we were able to get a handle on the acid rain problem.

So just imagine now we've got the renewable fuel standard and the oil companies are saying, gosh, we can't do this because we don't have the infrastructure. And by the way, we're not going to put the infrastructure in. What would happen if that, you know, happened with every environmental law, the company just said, oh – what would have happened during acid rain if they said, ah, we don't have the scrubbers and we can't put the scrubbers in. It wouldn't work. But that's the corollary here. That's what we see happening now. Next slide please.

I think we've had a lot of talk about RINs but this just shows again if you look at the very bottom line, that's the RINprice and you can see that it's not reflected in the gasoline price. And I know senators and congressmen are very concerned about gas prices. But it's just not being passed on. Next slide please.

This is a very complex slide but I think it's important. We've had a lot of good discussion about RINs by the previous speakers. But it's important to note that when you reduce the volumes of other biofuels, you end up hurting advanced because the RINs are all nested. And because of the nested nature of the RFS, actions on one fuel pool can directly impact the other pools. And this is particularly true for cellulosic fuels because Congress, anticipating some uncertainty in the timeline of cellulosic commercialization, included a specific additional waiver for cellulosic biofuel compliance.

So the lower market value advanced biofuel by, say, lowering the advanced biofuel RVOs below production capacity and you undercut the value a cellulosic biofuel producer could get for his fuel and the end result is companies won't want to invest anymore. Next slide please.

We think EPA has a lot of flexibility. You know, the refiners have been complaining a lot. But the law has a lot of flexibility built into it. If a refiner has specific problems, we believe EPA has flexibility beyond lowering the gallons to what they've done and changing the waiver standards. So we would hope that EPA will reconsider the rule and look at the regulatory flexibility they have going forward. Next slide please.

We believe the advanced biofuels industry has done its job under the RFS and that cellulosic biorefiners are indeed coming online this year and next in conjunction with new feedstock

supply chains. The RFS has also pushed biotechnology development and now we're seeing renewable chemicals being developed as well. So we're getting spinoff just like we did in the space program. The RFS must remain in place without changes for the foreseeable future.

I was watching the History Channel the other day and they had a program about the American titans of industry. And they were talking about John Rockefeller who headed up Standard Oil. And he got in a big fight with Thomas Edison because Rockefeller sold kerosene to people to light their homes with their kerosene lamps and here came Thomas Edison. He had electricity and he wanted people to have electric lamps.

So Rockefeller tried to kill electricity because it was competing with his kerosene business. Just think what would happen – what would have happened, what would our future be, what would our present be if he had been successful in curtailing electrification of America. Fortunately, he lost that fight.

But I think the battle for the renewable fuel standard is very similar. It's just the anticompetitive oil refiners trying to keep this new innovative technology out of the marketplace. And I think it would really hurt America and the world if they were successful. Next slide please.

So what can we do now? I think Senator Stabenow had some good remarks and I would just echo those. This is a proposed rule and we need all of you to engage and to weigh in with EPA and weigh in with the White House and CDQand hopefully we can bring some common sense back to this regulatory process. So thank you very much.

MR. FITZPATRICK: Thanks to all our speakers. I'm going to give another quick round of applause. (Applause.) Can you hear me back there?

MR. : Yeah.

MR. FITZPATRICK: OK, good. So I would normally try and abuse my privilege as moderator to try and ask my own questions. But we're running a little low on time and I want to make sure we get to a lot of your questions. So if anybody has anything they'd like to ask from the panelists, just raise your hand and I can come bring you a mic. Anybody? OK, well then I guess I get to get my way after all.

So I had a question specifically for Paul. If you would be able to talk as much as you can about the considerations that Butamax is having to make specifically within the company as far as investment decisions that will be pending on this EPA decision?

MR. BECKWITH: Yeah, so we are in the middle of commercializing our technology at a plant in Minnesota. So we're undertaking the first phase of that investment at the moment. The

project is really an enabler for multiple projects in the future.

And I think, as was described by one of my co-panelists, the commitment to the objectives of the RFS are critical in terms of making those decisions because it is the case that the mechanisms in the RFS, the RIN mechanism is the enabler to enable advanced biofuels and new fuel molecules into the market. And if the EPA are basically going to set the RVO levels equivalent to E10 every year, whatever that might be, then that severely reduces the economic case for advanced biofuels and particularly, you know, drop-in biofuels. And so, so I think this is a vital issue for ongoing investment in these technologies.

MR. FITZPATRICK: OK. Does anybody else have questions? OK, in the back. If you could just give us your name and affiliation. Thanks.

Q: My name is David Fialkov and I work at Steptoe & Johnson and I represent the National Association of Convenience Stores. And I wanted to kind of get all of your thoughts on the convenience store, the retailer and the marketer's perspective in all of this. I mean, my understanding of what EPA did was they tried to line up the mandatory volumes for next year with what they thought the market could reasonably absorb, right. So they didn't want to mandate fitting 10 ounces into an eight-ounce glass. And the reason that they had to lower it this year was because it would require more than simply E10 in order to meet up with the increase in statutory obligations.

So you have to ask why is it that we're only selling E10 in the market right now. If you were to ask a retailer, they would tell you two reasons. One, it would be unlawful for a lot of them to sell any blend higher than E10 because their equipment – right, their tanks and their fuel pumps – are not certified as being compatible with equipment higher than E10.

And second and relatedly, it's not worth the investment. The demand for E10 and E85 is not there so that they don't want to, you know, spend a hundred grand to redo all of their pumps and all of their infrastructure. So I guess what does that – what role does that reality play in the notion that the blend will always be, you know, kind of a contrived fictitious concept.

MR. FITZPATRICK: Great question. Is there somebody – oh well, maybe two. If you guys can give some brief comments?

MR. SALISBURY: So my – there's a number of answers to your question. I would refer you to two specific points. The first is go listen to Kirby's quarterly conference call, right. So Kirby does convenience store retail and they blend a whole lot of gasoline. And they talked very openly about the economics of blending and how they were benefiting and how they thought that that market would continue. So just the first thing from a convenience store

perspective, and I just literally told you everything I know about convenience stores except that's where you get Red Bull, but so I suggest you look at their call first.

The second thing is to your specific point about EPA said this is what could be reasonably consumed. And I think, again, going back to my previous – just this personal pet peeve, look at the use of language in the proposed rule, right. What could be reasonably assumed? And I really want everybody in here to go back and look at that proposal and read the methodology for E85, OK, because reasonable is a fairly broad word, right.

And so, if you run the economics of E85, if you just – if you just – you could – anybody can do this. You can build the simplest model that flows the economics through, give everybody a 6 percent margin. The volumes that they came up with with E85 were – and they disclosed this very openly – were at the absolute bottom of the range that they could have conceivably chosen, right.

And so, when you sort of talk about the blend wall, it's very important that you don't just take the proposal as the only pathway especially if you go back and look at 2007, the creation of the RFS and how the RFS was designed, in my opinion, specifically to push through the RFS and to specifically push through the blend wall.

There's a lot of talk about this as if this was some sort of accident. Everybody says, oh, we're totally shocked that this has happened and, you know, there's not enough gasoline demand and we're hitting this blend wall and it's completely – that was the point of the program.

And if you go back and look – I mean, I've been writing about this since 2010, right, like before anybody really saw significant declines in gasoline demand which is – I mean, in 2007 when they wrote the RFS2, the projection was to hit the blend wall in 2015. Instead we're going to hit it in 2014. So I would just sort of connect those two dots within the context of your question.

MR. COLEMAN: Just very quickly, I'd like to just point – I'd like to point you toward one more study and then make a comment. The study is the CARD analysis in the context of the following. So if we're – if we're on the – if we just maintain the original trajectory and we did about 14.4 billion gallons of corn ethanol which is basically what we would do if they didn't curtail the big renewable fuel number, you can get to 14.4 billion gallons of ethanol with E10 and plus banked RINs alone.

So you don't have to do a drop of E15, which is (a legal ?) fuel for – (inaudible) – or E85. You can get there with banked RINs and E10 alone. And the response can be, well, then we'll starve banked RINs. Well yeah, we'll starve banked RINs. RIN prices will go up and we'll drive further change in the marketplace which is what the design of the RFS is. In addition to that, so getting the 14.4 with just E10 and banked RINs, CARD did an analysis, IOSA did an

analysis that showed that there's somewhere in the vicinity of 1.5 to 2 billion gallons of capacity – E85 capacity between existing pumps at reasonable sales.

Now, does that mean that every drop is going to be used – we're going to get to 2 billion gallons? What it means is the economics are favorable and using reasonable sales as a percentage of sales at those pumps, we do 1.5 billion gallons or somewhere in that vicinity. If you don't take that number literally, you still have to look at it and say, hey, the potential is there using the existing infrastructure, not before you get to the actual change that we tried – what we tried to create with the act.

MR. FITZPATRICK: Do we have any last questions?

OK, and I think our time is just about up. So I just want to thank everybody for coming again. A special thanks to the – (inaudible) – committee, to Rohe (ph) and Karla (sp) for helping us set up. Thank you very much to all my colleagues at Third Way, specifically Jessica Harris (ph) for set up. And we really appreciate you attending.

(END)
