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OPERATOR

The broadcast is now starting. All attendees are in listen only mode.

ASHLEY ZANOLLI

Good morning everyone. This is Ashley Zanolli. I'm an Environmental Engineer in EPA's Region 10 Office in Seattle, and I'd like to welcome you all for our Webinar today which is on the new Renewable Fuel Standard 2, and we'll also be talking about the Lifecycle Analysis associated with that.

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So, I just wanted to provide you with a little bit of background on the Webinar today as well as we're putting on some future Webinars. In the chat box, if you open that up in the panel on your right, there's a web link and in the future that's where the future Webinars will be posted. Then right now, we are still sorting out dates. You can expect to see some future topics like the economics behind Regional Biofuels as well as other operational infrastructure issues such as underground storage tank compatibility. In terms

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of a little bit of background, this Biofuel Webinar series is in partnership with our EPA's Office of Science Policy. Region 10 is hosting the series to mostly educate policy makers, regulators, industry, including growers, producers, distributors and retailers, as well as all other organizations, consumers, and academia about both operational issues related to biofuels and also the Renewable Fuel Standard 2, including the Lifecycle Analysis. The primary focus will be on issues important

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to stakeholders and policy makers in Region 10, which includes Oregon, Idaho, Alaska, and Washington. However, these Webinars will be made available to everyone including the public on a national basis. So Tommie Jean is going to be facilitating the Webinar today, and I'm going to turn it over to her to talk a little bit about the logistics.

TOMMIE JEAN VALMASSY

Thanks, Ashley. Hi everyone. Thank you so much for being here today. This is a recorded session. However, your lines are muted.

[00:02:00] If you have questions, whether they be technical or about the content, please just use the question box. You can type your question in there. The slides are moved for you today. However, you will be able to download the presentation and have that, and as Ashley mentioned, there's a web link for that and those are not quite posted yet, but the presentation will be posted later. If you do have some kind of a question, there's a "raise your hand" feature with this Webinar. Unfortunately, it's very hard for us to respond to those.

[00:02:30] So instead of using the "raise your hand" feature, just go ahead and type it in any questions you have. We have set aside some time for question and answer. You can ask questions of our presenters today. And as we follow along, we have a couple times when we'll be doing that. After slide 10 before we talk about the Lifecycle Methodology and Results, we'll take some question and answer. Then before we move into Renewable Biomass Definition, we'll take some question and answer, and then at the very end we'll also take question and answer. But feel free to type in any of your

[00:03:00] questions at any point during the Webinar. At the end of this, there is a quick survey. It will come up in a pop-up window, and there's just three or four multiple-choice questions so that you can give us some feedback today, and that would really help us so that we can keep improving these. So if you'll take a minute to just fill that out at the end of the Webinar, we'd really appreciate it. With that, I'll hand it over to Ashley to introduce our speakers.

ASHLEY ZANOLLI

[00:03:30] Okay, thanks, Tommie Jean. And before we get started, I'd just really like to extend a thanks to our Office of Transportation and Air Quality, specifically Bob Larson and Sharon Lee, in addition to our two speakers today, David Korotney and Vince Camobreco. Thanks to them. Just again as a reminder, comments on the RFS2 are due by September 25th, and that was an extension to the original deadline. So hopefully, as a result of this Webinar, you'll be provided with information that will enable you to make some specific comments on RFS2. So

[00:04:00] our first speaker today is David Korotney. David has been with EPA since 1991 in the area of Combustion Chemistry and Pollution Abatement through both policy development and

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regulation of fuels. Some of the fuel emission analyses he's conducted have included investigations on fuel parameter collinearities, engine performance, and fuel properties and vehicle technology interactions. His current duties are focused primarily on programs and policies associated with the renewable and alternative fuels

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including the Renewable Fuel Standard Program. David has a BS in Chemical Engineering and an MS in Mechanical Engineering from the University of Michigan, and he's currently a Fuel Programs Expert in our Office of Transportation and Air Quality. After then David presents, Vincent Camobreco is going to step in and he's an Environmental Specialist in EPA's Office of Transportation and he's in the Climate Division. His work really focuses on lifecycle, greenhouse gas impacts

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on renewable and alternative fuels. Prior to that, he worked on EPA's Climate Leaders Program helping develop protocols to calculate and report corporate greenhouse gas inventories to EPA. Mr. Camobreco's previous work and experience includes over five years as an Environmental Consultant with Eco Balance doing lifecycle analysis for numerous industry and government clients. His education includes a BS in Mechanical Engineering from Clarkson, and a Masters of Engineering in Agricultural and Biological

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Engineering from Cornell. So with that, I'd like to welcome David Korotney to kick off the Webinar.

DAVID KOROTNEY

Thank you. We're going to be starting here in slide 3 just to go over the agenda very quickly. We're going to be talking about what was in the RFS2 Proposal that was published on, I think, May 26th of this year in the Federal Register. As was already said, the comment period has been extended.

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The comments are due by September 25th, which is probably a good thing given not only how long the whole rule is but also the complexity of the whole lifecycle issue, which is where a lot of the focus has been for many stakeholders. The lifecycle area is not something that I'm familiar with so that's why Vince has taken over that. He's really an expert in that area. But as you can imagine, there are lots of other areas that there are different folks in our program office who experts on.

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My area of expertise is primarily regulation development, and the program mechanics. So questions that come in today along those lines I should be able to answer just about anything. If your questions have to do more with the EPA Moderated Transaction System, which we'll go over in a little bit, or the renewable biomass definitions or a few smaller items, I may have to defer on those and we'll just make sure

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you get your answers through a different route at a different time. All right, why don't we move on to slide 4. May 5th, the Administrator signed a Renewable Fuel Standard Proposal. The original RFS Program was required by the Energy Policy Act of 2005, and it was EISA or EISA, depending on what you want to call it, the Energy Independence and Security Act of 2007, which required

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a whole bunch of different changes to the program, which we'll go over in a moment. Not only are there much larger volumes with a focus on advanced biofuels, but there is a carve out, if you want to call it that, for conventional biofuels that's 15 billion gallons. And most of which, or all of which, may be grandfathered from the greenhouse gas thresholds. I'll get into the greenhouse gas thresholds in a moment and Vince will elaborate.

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There also is going to be significant benefits to these revised regulations in the area of greenhouse gases, energy security, and impacts on agriculture. Slide 5. All right, so we held a hearing on June 9th in Washington, and we've already had a two-day workshop on lifecycle analysis. I've already mentioned the extension, the comment period. We're continuing to do stakeholder outreach and gathering information,

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technical information, regarding the various analyses that we have to do for the rule, as well as the perspectives of different stakeholders and regulated parties on how the program ought to be designed. So slide 6. This is a little bit more detail on the changes to the Renewable Fuel Standard Program that were required by the new act. Again, I already mentioned significantly increased volumes of renewable fuel. The volumes have now been separated

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into four categories of renewable fuel. Cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel. There are changes to the definitions of renewable fuels to include minimum lifecycle greenhouse gas reduction thresholds and

grandfathering. Grandfathering simply means if your facility began construction prior to the signature of the Energy Independence and Security Act, you don't have to meet the

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20% greenhouse gas threshold, and we'll go on describing a little bit more about that a little later. There are restrictions now on the type of feedstocks that can be used and the land that's used to grow those feedstocks. And then the Act also includes some new types of waivers and credits for cellulosic biofuel. The waivers by and large, with one possible exception, won't be dealt with in this rule making because by definition waivers are something that you do if you discover

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that the standards that you set can't be met due to one of a variety of circumstances, either adverse environmental impact or significant economic impact. Something like that or inadequate supply, those sorts of things. So those will be things that we would deal with after the rule is implemented, and so we don't say a whole lot about the waivers in the context of the proposal, nor will we say much about them in the final rule. The

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changes required by the new Act means we have to do a bunch of other changes as well. We either have to do them or it just makes sense to do them. The EPA's Moderated Transaction System, the EMTS, sometimes referred to as the RIN Bank, is one thing that we're going to be implementing. Production outlooks reports where we are gathering information from renewable fuel production facilities on an annual basis to allow us to determine

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at what level the cellulosic biofuel standard ought to be set at each year. Then, we also took comments on some alternative approaches to designating obligated parties and how RIN should be transferred to the batches. All right, next slide, slide 7. This is the summary of the four standards and some of the requirements associated with each one. So you look at the biofuel standard that requires 16 billion gallons by 2022,

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and it has to meet a 60% lifecycle greenhouse gas threshold. Just to clarify what that means, if you add up the lifecycle greenhouse gas emissions for say a particular type of cellulosic biofuel, and you compare it to the lifecycle greenhouse gas emissions for the fuel that it's displacing, in this case most likely gasoline if you're talking about cellulosic ethanol, then the cellulosic biofuel has to have greenhouse gas emissions which are 60%

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lower than the greenhouse gas emissions associated with the gasoline. Biomass-based diesel only one billion gallons. I say "only" because that's in comparison to the cellulosic and biofuel. It's still a significant volume, but as you'll see, it's one billion by 2012. We're actually required through rule making decide what volumes are going to be required after 2012. We're not doing that in the context of this rule making, but we will

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have to do it in the next couple of years. Advanced biofuel requirement 21 billion gallons. In total, it is 36, and there are lifecycle greenhouse gases so ... Sorry, lifecycle greenhouse gas thresholds associated with both of those. And down at the bottom here, just a note. This is related to what Vince is going to talk about. We are allowed by the Act to change the greenhouse gas thresholds, but only within a narrow window. We can only lower them

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by 10%. So for instance the advanced biofuel threshold of 50%, we could lower it down to 40% at most, and where we did say comment, I'm doing that in particular for advanced biofuel in the proposal. And the final decision on that will depend on final lifecycle analyses. All right, slide number 8 is a tabular description

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of the previous slide, and you can see there that the lifecycle greenhouse gas thresholds are highlighted at the top. The nice thing about this slide is that it clarifies the nested nature of these standards. So for instance, the total advanced biofuel requirements of 21 billion gallons at the bottom is composed of one billion gallons of biomass-based diesel plus 16 billion gallons of cellulosic

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biofuel, plus something else. We typically call that something else, "other advanced biofuel." And then that advanced biofuel all counts towards the total renewable fuel requirement of 36 billion gallons, and the gap between those two, the gap between 21 and 36 is commonly referred to as the 15 billion gallon requirement for corn ethanol. That's not written

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in the Act. There is nothing in the Act, which says we are preserving 15 billion gallons for corn ethanol. That's simply an implication of the way that Congress set up these standards. Slide 9 is just a graphical description of what I just talked about. The only thing I really want to point out here is the fact that the biggest increases that we're seeing in types of renewable fuel are in the cellulosic biofuel category. That's also where a lot of the

controversy is because

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there is almost no cellulosic biofuel production capacity to speak of right now. And so a lot of our work going on into the future is going to be on an annual basis trying to determine how much cellulosic biofuel can actually be produced each year, and using that information to set the standard that applies for each year. All right, with that I think I'm done. Did we want to take some questions at this point?

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TOMMIE JEAN VALMASSY

If folks have questions, you can go ahead and type them in but we don't have any yet. So why don't we just go ahead and move on to Vince.

VINCE CAMOBRECO

Okay, thanks. I'm Vince Camobreco and I'm going to go over now basically the Lifecycle Methodology and Results that went into our proposed rule making. So if you go to slide 11 and maybe kind of start this off. As Dave mentioned, as part of this rule making

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with these four categories of fuels, different fuel categories. There are some definitions in terms of what types of biomass kind of qualifies for each of the four and obviously, biomass based easily on certain categories of fuel would fit into certain of those four categories. But mainly the big distinguishing characteristic are these greenhouse gas thresholds. So each category of fuel needs to meet

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certain greenhouse gas reductions, as Dave went over. So without that sort of determination for the fuels then, you know, there's no way for us to kind of categorize where these fuels would fit and if they would qualify under the program or not. So, you know, the key part of the program is sort of this lifecycle analysis and these different thresholds for the different categories. So, I mean, the concept itself of

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doing lifecycle analysis is not really new. I mean, it's been going on for a while and, in fact, the Act specified the definition that's fairly standard in terms of including all stages of fuel and feedstock production and distribution from feedstock generation, extraction, distribution, and final use. The basic idea being that you are not just looking at the tail pipe emissions of fuel, but also anything

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that went into the production of it. So for biofuel, that's fuel

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processing as well as the feedstock production, agricultural emissions for the petroleum product that's refining emissions as well emissions from extracting the crude and transporting it. So that's during the whole lifecycle emissions. I guess the new sort of piece that has sort of generated the most discussion and

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interest is what's highlighted in red on slide 11 in terms of the Act also mandated that we also look at not only direct emissions but the significant indirect emissions such as significant emissions from land use change. And I'll sort in the next couple of slides sort of what that means and how we've looked at that. So on slide 12, again,

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this is just highlighting basically that really what we're doing for this analysis, for this rule making is a determination of where these certain fuel or pathway type of fuels fit in relationship to the different categories, the four different categories of fuel.

TOMMIE JEAN VALMASSY

Vince, I just want to jump in here real quick. We're having a little bit of trouble hearing you. If you could speak up or maybe move your phone a little.

VINCE CAMOBRECO

Okay. I will. Let me try it.

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Is this better?

TOMMIE JEAN VALMASSY

That's great.

VINCE CAMOBRECO

Okay. So, again, sort of the analysis that we're doing here is to characterize the fuel in relation, or fuel pathways in relationship to the four different categories. So we don't need to have ... We're not valuing fuels

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against one another. We're sort of valuing fuels in the context of these four categories. So while we have gone through this analysis and as documented in our proposal and all the analysis and documentation, we have come up basically with lifecycle values for the different fuels and fuel pathways. So we reported those throughout our analytical

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work and documentation. But in terms of the regulations and the

way the program works, really all we need to do is make a determination does this fuel, is it above or below the threshold? So, for example, so the cellulosic biofuel, the 60% threshold, if the fuel is 70 versus 80 versus 90% reduction in greenhouse gas emissions, it really makes no difference in terms of this program. It's just

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if it's above or below that, so the 60%. So it's kind of important to point out that that's really the determination we needed to make for this rule making. The other thing maybe to point out is that this, as Dave mentioned, you know, this is a comparison, the lifecycle is our comparison of the biofuels to the petroleum fuels they would replace. And the Act also specified that we compare on the petroleum fuel side a 2005

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baseline gasoline or diesel. So that was actually specifically mandated in the Act as well, but it was based on the petroleum baseline that it's 2005 gasoline and diesel. All right, so, on slide 13 to get into a little bit the sort of approach and methodology that we went into to conduct this analysis. So then the kind of key aspect of this lifecycle analysis and

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work was that this mandate to consider indirect effects and the basic concept there in terms of biofuels and herbal fuels. Typically, the sort of lifecycle analysis had looked for example, Cornell is now saying, "Total lifecycles, just biofuel." Here are the emissions that go into ... To produce a gallon of fuel requires X bushels

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of corn or soybeans. Here's the emissions that go into using the tractors to grow that, the fertilizer use, the energy use, transporting that amount of corn to the plant, the energies at the plant, and transportation with emissions and fuel combustion and emissions. But it also in that life cycle

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for the biomass considered sort of a CO₂ uptake of growing that crop, and then the ultimate release from the tail pipe. So it was more or less considering this biomass cycle and that zero in terms of greenhouse gas emissions because the CO₂ is uptake by the plant, and then released from the tail pipe. The indirect impacts to look at those is

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the main idea being that as you increase the amount of biofuels use, really what happens is the markets sort of respond to this, the feedstock markets. So that you again using sample corn ethanol,

you now basically are shifting creating this new market for this biomass. In terms of

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using it for fuel, taking it away from a goods in markets or what it would have gone into. So then there is a response international or domestically and internationally in terms of additional acres or crops need to be grown to make up for this additional demand now going to biofuels. So the way we sort of treat that or handle that is through the use of economic models,

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specifically in the agricultural sector to look at, you know, as you increase the amount of these commodity crops used in biofuels, what happens to the markets. Prices change, demand changes, life sector, the use changes. Then there's the response in terms of these crops used domestically, what would have gone into exports or

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exports are changing and what's the response internationally to this, and how much additional acres of crops would need to be grown internationally and then what are the associated land use impacts of growing that additional crop. So the models, the use of economic models. We're using two. The two main ones we look at are the FASOM model.

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Bruce McCarl is the key researcher there based out of Texas A&M to look at domestic. So the domestic agricultural sector impacts. On the international side we're using the FAPRI Model System. We work with Bruce Babcock at Iowa State to run those models with the national agricultural sector, and the sort of reproach is to

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create a baseline or case, you know, without the RFS2 volume. So looking at, you know, a base case volume of fuel and we look out and project that out into the future through the life of the program through 2022. And then we look at a case with an increased amount of biofuels in 2022. So we're considering not a sort of historic change but rather

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what's the impact in a given year with basically an increased amount of biofuel use? So it's projecting what would have happened basically without the biofuels in a given year. And then we look at the differences in greenhouse gas emissions associated with that. For the international component on the land use so again basically with the

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model you would say, you know, in a given year, 2022 if you

increased the amount of corn ethanol or corn growing ethanol how do the ag markets react? And how does that impact greenhouse gas emissions? Models basically tell us that, that with the international component, the FAPRI model, really it just gives us the total additional amount of cropland that would be

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needed to respond to this increase in biofuels. To look at what the land use impacts are, we also I guess in terms of what types of land are then converted because of this increased land demand crop, land demand. We use satellite data so we look at recent satellite data from around the world for 2001 to 2004 and say, "During that time period

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if there is additional cropland in a given country, where did that come from? Did it come from forests or from shrub land, from savannah land, from different types of land into cropland?" And we use that along with our results from the economic models to base the land use impact. And

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for a number of these, and we'll get into it a little bit more. Next slide. You know, we've looked at the number of sensitivity analyses and different methods and we'll show some of that when we go through the results. Slide 14 just highlights that a little more in terms of that. Through our proposal process, we've described

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this methodology in great detail, provided results. We've acknowledged the uncertainty particularly around this indirect modeling and land use change impacts. So we've done a number of sensitivity analyses including looking at different volume changes for the different fuels, looking at different years, looking at what types of land are impacted. You know, is it forest that being converted?

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Is it pasture land? We've looked at some of the foregone sequestration, which is basically saying that you're converting forests into cropland, that forest could have been less to sequester carbon over time. So there's sort of an ongoing impact of land conversion as well as the time issue, and impacts over time. And this is sort of

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talking about when you look at land use change so if you've got a certain amount of biofuel production in a given year generating land use impacts with associated greenhouse gas emissions from that, it's more or less of one time or short time period release of carbon emissions from that land use change due to the biofuel

[00:30:00] production. But then you've got ongoing use of that land, and ongoing use of biofuels replacing

petroleum fuel and the benefits of that going out into the future. So the two things we need to look at, one is how far out do you sort of take this analysis in terms of looking at the benefits of that biofuel use versus the longer-term benefits versus the near-term impacts, and then sort of related to that do you consider long-term benefits weighted the same as near-term impacts

[00:30:30] in terms of the emissions. So do you basically discount future emissions or impacts versus near-term impacts? So we present the next two slides. We get into some of the results and so we present ... You'll see that how you treat the timing impact is a key. It has a key bearing on the overall results. So slide 15

[00:31:00] shows a number of different pathways, biofuel pathways that we considered. The sort of green bar along the middle is the international land use change. So you can see that it's a significant portion of the lifecycle greenhouse gas impacts for specific commodity type crop production. And

[00:31:30] these results on slide 15 are presented for 100 years at a 2% discount rate. So that basically means we've looked at the near-term land use impacts, but then taken the benefits of using the biofuel and replacing petroleum fuel over 100 years but discounted those future benefits basically with a 2% discount rate. Those showing,

[00:32:00] if you look at the first kind of grouping of fuels and results are for corn ethanol with a number of different pathways based on the fuel type and from sort of technology advancements that could be put on a plant. Actually, the first bar being the gasoline baseline so you see the comparison to the gasoline.

[00:32:30] So with this sort of timing impact you see that there are a number of corn ethanol pathways that are below the 20% reduction, although there are some that are above it, specifically the coal fired ethanol plant. Another thing, I think David mentioned, and I think we'll talk about it again is that to a large extent a lot of the corn ethanol plants will be grandfathered

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and crop residue case, and both of those fall well below the threshold, the 60% threshold for fuel.

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So don't see an issue with cellulosic ethanol at least qualifying and meeting the 60% threshold. So the next bar is for sugarcane ethanol, and for that we do see, or have at least in the proposal seen a fairly large indirect land use change similar to what we saw for the

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corn ethanol. Actually these results that were after the proposals not meeting a 50% reduction, which was the threshold. But I think we have proposed adjusting the, as Dave mentioned, we have the ability to adjust the lifecycle thresholds down by 10%. So we have proposed

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that for advanced biofuels having to meet a 40% reduction basically. The last set of bars is for biodiesel, and we looked at soybean biodiesel case and a waste grease case. The soybean biodiesel case, again, having received the sort of a large land use impacts, but the waste grease biodiesel

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obviously not having the land use impact shows an 80% reduction verses the baseline diesel. Then in slide 16, now again, kind of highlighting the impact of the timing and how you treat the near term impacts versus longer-term benefits. Slide 16 is the same set of results or the same set of plants, but now assuming only

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30 years of benefits and with new sort of discount being any future stream sources near term impact. So basically see the increases, the sort of net emissions for the biofuels versus the petroleum fuels. In this case most of the corn ethanol now is above or near the

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20% threshold as well as the sugarcane and soybean biodiesel sort of changes versus the baseline cellulosic. As we're not seeing as large of the land use impact still qualifies toward the 60% reduction. So in slide 17, and David mentioned this before, so we've, you know, again

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throughout the proposal have sort of outlined all the methodology and the modeling and the sort of analysis. So the results have gone into this, put all of our modeling results and sort of background information on how this was calculated to adopt it. We also held a workshop in June, a two-day workshop, kind of detailing

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the analysis and what went into it, and it was fairly well received. People were sort of appreciative of all the ability to ask questions and to go through the detail. So the feedback, which highlighted some of the areas that we are already working on towards our final rule in terms of, as you're probably familiar with, California has a low carbon fuel standard related to similar lifecycle

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analysis, but whereas we used the FASOM and FAPRI model, they used GTAP Model from Perdue similar in terms of how it, you know, considers indirect land use change in greenhouse gas emissions from land use change. So we're continuing to work with them. They actually, I believe, have a workshop going on right now, today on some of the latest work that they've done on their low carbon

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fuel standard. So we're continuing to work with them making materials available for people to go through this and provide comments with looking at, again as I pointed out, the importance of the time horizon and discount rate. So we're looking at more analysis and working

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and getting comments back from stakeholders on that. And looking at different assumptions that we make in terms of the ag sector as this is all based on these ag sector models in terms of lengthy yield growth in Brazil, and how Brazil is going to respond to some of the changes, the indirect changes from the U.S. biofuel use as well as the petroleum

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baseline and taking another look at that in the context of this rule making. The other aspect on slide 18 is that we've actually had a number of pieces of this analysis down to a formal peer review. So sort of the four key elements of this in some new pieces that we've put together. So this rule making specifically the land use modeling. So like I mentioned, we were using the satellite data

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to project what types of land are converted internationally? So that's a piece that we've had peer reviewed. We also did some work going along with this indirect effect and the fact that you're growing crops now internationally, which has a land use demand is there's emissions from producing those crops as well like including the typical analysis like diesel

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fuel use, the fertilizer use, and the emissions from that. So we did some analysis on internationally greenhouse gas emissions from

car production, which we had peer reviewed. The timing, like I mentioned, was 30 year versus 100 year, discount to no discount, had that specifically peer reviewed as well as how we've used all the different models together. Like I mentioned, we have the FASOM model that we looked at for domestic, FAPRI for international, the satellite data. So how we've

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used all of those cases together. So we followed EPA as guidelines for conducting peer reviews, basically standard government wide. So we've followed those approaches, which basically means we've used an independent third party contractor that we've worked with in the areas we want peer review. He has a type of expertise needed.

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They worked to then pull together the list of experts checking for conflict of interest and otherwise. They conduct meetings necessary to make sure that they've got all the information we need, and that peer review records including all the materials that went to them, if was on a peer review, and then in the summer all their comments are going to be available as part of the public

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record as well, and that should be completed this summer. So before the end of the comment period on September 25th. So that's pretty much what I have for the lifecycle piece and I think Dave, if you would take it over again and talk about the grandfathering clause.

DAVE CAMOBRECO

Yes, thanks, Vince. So the grandfathering aspect,

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for those of you who are interested, the Act itself doesn't use the word "grandfathering" I don't believe. It just uses more complicated language. The Act says that if a facility commenced construction prior to the Act being signed, which was December, I think it was the 19th, 2007, they are not required to meet the 20% greenhouse gas threshold. It doesn't apply to the other greenhouse gas thresholds. So, all this allows

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a facility to do is to generate general renewable fuel RINs. It does not allow them to generate sales of biofuel, of advanced biofuel, or [SOUNDS LIKE] biomass based diesel RIN if they would otherwise not meet the greenhouse gas threshold. We saw it coming at a range of different options on how to define "commence construction." Our main proposal is to use

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a baseline volume for each facility in which we basically establish at some point, some historical point, how much volume that facility could have produced and that becomes the grandfathered volume. This is an approach that is designed to avoid the whole NSR related complications, for those of you who are familiar with New Source Review. In the end, we expect that on the order of 15 billion gallons

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will be grandfathered. That's essentially all current corn ethanol production volume, biodiesel production volume, and sugarcane production volume. All right, so with that, do you want to go to questions?

TOMMIE JEAN VALMASSY

Yeah, we've had quite a few questions come in so I'll ask some of those for you guys here. So the first question, "Will future petroleum based fuels be analyzed with the same constructs

[00:44:00]

further illustrating the lifecycle disparity such as tar sand and shale oil?"

VINCE CAMOBRECO

As I mentioned, the Act specifically mandated for the petroleum baseline that we consider a 2005 baseline. So what we've done as part of the rule making is looked at what types of crude was used for the petroleum baseline in 2005. So that did include,

[00:44:30]

you know, some tar sand, some Venezuelan heavy oil, but again it was based on the mandate that we consider 2005. For the final rule we are looking at in regards to that some of these impacts of unconventional type of crude. But again, given what was specified by the Act of the 2005 baseline, that's

[00:45:00]

based on our petroleum analysis.

TOMMIE JEAN VALMASSY

Okay, then we have a question about palm oil. Someone writes, "I'm curious to know why palm oil is not included in the impact analysis because the market has responded well to palm based biodiesel and renewable fuels, and palm based feedstock can be made available readily in a sustainable and cost sufficient manner." And they are just saying they request EPA to consider inclusion of palm in the analysis.

[00:45:30]

VINCE CAMOBRECO

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Okay, and again for the proposal, what we've done is more or less, at least for the results, I showed we did a kind of specific lifecycle model for these pathways, and that was based on what we sort of project for being the majority of the fuels that are going in to meet the 36 billion gallon mandate. But in addition to sort of fuels where we've actually

[00:46:00]

done the details and analysis. They're our FASOM type of models. We've also made some determinations in the proposal for other fuels and other pathways. So the similar fuels and pathways and what categories they would fall under as part of the rule making.

TOMMIE JEAN VALMASSY

Okay. Here's another question. "Will EPA take into account the use of biofuel

[00:46:30]

as a strategy to reduce urban sprawl?" And the example they give is in Snohomish County in Washington and they have agricultural land that is just sitting there and they say it's kind of a sitting duck for sprawl unless they can enable biofuels on that land.

VINCE CAMOBRECO

So our agricultural models that we looked at do account for sort of development and the expanded urban sprawl basically.

[00:47:00]

But it's more or less based on the price, you know, of lands, and of how much could the farmer... How much revenue could they generate by growing crops versus selling the land for development. So it is in some context built into our analysis although we've through some discussions it's not clear that the sort of increased value from the biofuels

[00:47:30]

would be enough to offset the ... Of course, it's dependent upon housing prices. Actually, it has a big impact on that.

TOMMIE JEAN VALMASSY

Okay, here's another question. "Why do the international land use control emissions vary across crops, for example the emissions for soy biodiesel are bigger than for corn ethanol?"

VINCE CAMOBRECO

It's just sort of the nature of the commodity

[00:48:00]

and the modeling and the sort of the agricultural markets. Something, I guess, point out is as you increase the amount of

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corn ethanol, you're not only impacting corn, you're also impacting other crops including soybeans because your farmers may react by planting more corn and less soybeans, and so you're impacting exports

[00:48:30]

if not just corn, the price of not just corn but soybeans. So the land use change for corn ethanol is not just a reflection of corn acres, it's a reflection of sort of how the markets respond. That's similar with the soybeans. And on the soybean side, what you're really impacting is a couple things, which are more the vegetable oil markets and using now soybean oil for fuel instead of

[00:49:00]

for other uses. On the biodiesel side and on the oilseed side you don't necessarily get as much volume per acre of biofuels. So that's one issue of why oilseeds looks slightly different as well as what you could be impacting with the oilseed crops, and this gets to the palm oil issue is, you know, where

[00:49:30]

the replacement for these crops would be. It's generally in more areas with higher greenhouse gas impact. So that's why you see the differences between the different ... And then sugarcane ethanol will have a different impact because that's impacting crops in Brazil and that will be the different crops that will be get impacted there. So that's why they all have different land use impact associated with them.

[00:50:00]

TOMMIE JEAN VALMASSY

Okay. And we have a question about waste grease. "When waste grease is used for biodiesel production, the animal feed industry has to use other products to replace it. Was the impact of the production of those other products considered when doing the lifecycle analysis of biodiesel from waste grease?"

DAVE CAMOBRECO

So the FASOM, again our agricultural domestic model does have the sort of ultimate uses for

[00:50:30]

these feedstocks built in. So there would be a response due to taking materials from an existing use and diverting them to a biofuel, and sort of the back fell into the market. So that would be accounted for with the FASOM model, but again we don't see as big of an impact on the land use as you do for the crop

[00:51:00]

based fuels.

TOMMIE JEAN VALMASSY

Okay. "Have you investigated an LCA for camelina grown in the northwest as a biodiesel stock?"

VINCE CAMOBRECO

We have not specifically modeled that. We do ours again, through the detailed analysis, through the FASOM and FAPRI models. We've looked at camelina, and I'm not sure and Dave you may know if we've included data of sort of

[00:51:30]

potential feedstock through sort of some of the other just general assessments we've made based on the fuels that we have considered.

DAVE CAMOBRECO

I don't believe that we actually included it in the proposal, but I'd have to check.

TOMMIE JEAN VALMASSY

All right. Another question here. "What is considered in a baseline emission calculation for petroleum based fuel? Does it include exploration

[00:52:00]

costs and emissions, transportations for crude emissions, and indirect emissions, and how an oil production field indirectly impacts the economy in their region so that you have a fair comparison?"

VINCE CAMOBRECO

Yes, again, you know, it's sort of was mandated as 2005 so it does include the international emissions from extractions, from energies, the emissions from crude oil production,

[00:52:30]

the transportations that we're finding with end use. For the final rule we are looking at what, if any, sort of the indirect impacts might be in terms of ... And it's not for land use, it's no so much an indirect impact as it's potentially a direct impact of land use for sort of distraction

[00:53:00]

methods. But in general because the impacts are basically allocated or divided over the life of the production and the sort of the BTUs that come out of the ... While generally those type of impacts are small on a per BTU or per gallon basis, as compared to the biofuels.

TOMMIE JEAN VALMASSY

[00:53:30] Okay. And I'm not sure if you touched on this but, "Was there any analysis of other environmental degradations such as erosion or increased herbicides or increased non-point source discharges?" "

VINCE CAMOBRECO

[00:54:00] The rule at least for the thresholds was with the greenhouse gas thresholds so we focused obviously on greenhouse gas emissions to the extent that there's like livestock methane emissions, rice methane emissions,

in terms of greenhouse gas emissions. So we're focused on those type of emissions and sources and greenhouse gas emissions from use of inputs like herbicides and fertilizers specifically. As part of the rule, we also did an air quality model where we looked at the criteria for the emissions domestically.

[00:54:30] So we have looked at beyond greenhouse gas emissions and impacts of other pollutants.

TOMMIE JEAN VALMASSY

[00:55:00] Okay. Now we have a question kind of about grandfathering. "There are many plants that commenced construction several years ago, but maybe since they have ceased construction or gone bankrupt due to the economy

or feedstock costs. So if someone decided to start construction again to restart their construction in order to fall under the grandfather clause, would that be allowed even though they had shut down before?" And also, "Did the facilities that have ceased operations due to economic constraints get grandfathered if they start back up?"

DAVE CAMOBRECO

[00:55:30] The Act says that the facility needs to have commenced construction. So if it was already built but

shut down for a period of time and then restarted, that doesn't affect when construction commenced. The stickier question is if somebody actually started construction, but then stopped construction and in an extreme example, they broke ground and then a week later stopped doing anything for five years, does it really constitute commencing

[00:56:00]

construction prior to December 19, 2007? So there is a discussion in the rule about that kind of a situation, and there's some criteria that we proposed that basically says you can't be on hiatus from construction for too long a period of time. The specific numbers I don't have them off the top of my head. They might be like 18 months of a hiatus in construction or something like that, but in any case,

[00:56:30]

we do have a proposal for how to treat those kind of circumstances.

TOMMIE JEAN VALMASSY

Okay, great. Okay, another question here. "It's my understanding that the conventional biofuel is capped at 15 BGY. It can never go higher but that the other amounts, for example, cellulosics are minimum amounts. We want this much but it could go higher. Is that correct?"

DAVE CAMOBRECO

That's really a kind of misunderstanding.

[00:57:00]

The corn ethanol really what we're talking about is the gap between the advanced biofuel and total renewable fuel. The gap between 21 billion and 36 billion. That's where that 15 billion comes from. The industry can make 16 billion or 17 or 18 or 20 billion gallons of corn ethanol, and all of them can generate RIN, it's just that you only need 15 billion gallons to meet the requirements of the Act. So if the market

[00:57:30]

were to require, I shouldn't say require. If the market were to demand more than 15 billion gallons then certainly they can produce it. It's just that the RINs wouldn't be worth a whole lot in that case because there would be a surplus of RINs, more than you need. In addition, it's a little more complicated than that because although the advanced biofuel requirement is 21 billion gallons, it could be that people produce

[00:58:00]

22 billion. If they produce 22 billion gallons, then you don't need 15 billion gallons of corn ethanol, you only need 14 billion. So to say that corn ethanol is capped at 15 billion really isn't accurate.

TOMMIE JEAN VALMASSY

Okay. Let's see. So here's another one. "Has the administration expressed an opinion on the Waxman-Markey Proposal that would

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[00:58:30] put indirect land use changes on hold for five years, and what do you think is the effect of not considering the indirect land use changes?"

VINCE CAMOBRECO

Do you want me to tackle this one, Dave?

DAVE CAMOBRECO

[00:59:00] Well, I'm not real familiar with the Waxman-Markey Bill. All I can say is that if it were to require us to continue to do the same lifecycle analysis that we did but without a consideration of indirect land use changes,

[00:59:30] it's really not clear to us how exactly we would do that given the way that the models operate and you have these interacting effects between different crops and land use and demand for different types of crops and that sort of thing. To be honest, because those discussions in Congress are still ongoing, we haven't developed a methodology for how

[00:59:30] we would do that. And Vince, if you want to add anything, go ahead.

VINCE CAMOBRECO

[01:00:00] Right now we're operating under the EISA requirements, which are the requirements that are on the books that say this is mandated and what we need to do. Should Congress pass the bill that would change that, we would obviously comply with that or respond to that. But at the moment, we have the EISA

[01:00:00] requirements mandate and that's what we're basing our analysis on.

TOMMIE JEAN VALMASSY

Okay. Another question. "I noticed the GTL diesel qualifies in several levels of RFS2 carve out. What is the difference between these GTLs?"

DAVE CAMOBRECO

Gas to liquid, I presume that means.

TOMMIE JEAN VALMASSY

I think so. I'm not sure.

DAVE CAMOBRECO

[01:00:30] I'm not

entirely sure what the question is asking, but what I can say is that there is a Look Up Table in Section 80.1426 of the Regs, and this Look Up Table includes every pathway that we analyzed for lifecycle impact, and those would be the pathways that are valid under the rule. If there is a pathway, or two different types of GTL pathways in there.

[01:01:00]

Then they would be distinguished by either the type of feedstock or some peculiarity of the production process, and the reason it would be a different volume item in the Look Up Table because there was a different impact on lifecycle emissions.

TOMMIE JEAN VALMASSY

Okay, and in the regs again that was 80.1426, is the Look Up Table?

DAVE CAMOBRECO

That's correct?

TOMMIE JEAN VALMASSY

[01:01:30] Okay, here's another question.

"Please comment on algae based diesel and/or aviation fuel."

DAVE CAMOBRECO

[01:02:00] Algae as a feedstock is sort of an up and coming feedstock that's gaining greater attention. We did not have enough information on it to do an analysis of lifecycle impacts for the proposal. We're hoping to do it for the final rule. As for aviation fuel, you can turn algae into any of a number of different kinds

of fuel. It might be aviation fuel. It might be just about anything else, depending on the process that you're using. However, aviation fuel, I don't believe it ... Oh, aviation fuel as jet fuel is included as a valid fuel. I believe it's a valid fuel for RFS2 compliance purposes. I'd have to go back and check the Act, but I believe that the

[01:02:30]

fuels that are valid are highly fueled, non-road fueled, and then there's a specific call out for home heating oil and jet fuel and any renewable fuels used in those contexts are also valid in the RFS

program for RIN generation.

TOMMIE JEAN VALMASSY

Okay. Is there any sort of a road map for future feedstock analysis?

DAVE CAMOBRECO

Well, other than the fact that we're going to continue

[00:03:00]

to try to expand the list of feedstocks that we're evaluating for the final rule, beyond the final rule, we're still evaluating how we might account for other kinds of feedstocks or indeed other kinds of fuel production processes that might arise in the future, and we do have a discussion of that in the rule, but right now it's in very infant stages in terms of content. And we're hoping that the comments that come in

[00:03:30]

on the rule will help guide our thinking to the final rule.

TOMMIE JEAN VALMASSY

Okay. So we're still taking a few questions here. If you want to type new questions, go ahead and continue. Here's another one. "How does the analysis look at land conversion of unused grassland or low growth areas into farmland? Were the direct soil emissions from the soil considered high since soil temperatures released sequestered CO₂, and would it be of benefit to convert it to cropland?"

[01:04:00]

VINCE CAMOBRECO

Yes, so in addition to, you know, the satellite data work that I mentioned where basically our agricultural models are predicting the amount of land needed. Then we've used the satellite data to predict of that land increase where is it coming from? Is it coming from forest or pasture or other types of land?

[01:04:30]

So in addition to that, we worked to basically develop emission factors for converting that land. So the emission factors do look at soil carving from different types of land around the world, and we've actually looked at sort of regional emission factors from different countries around the world. So I guess it's captured through the development of the different emissions associated

[01:05:00]

with the lands that are converted.

TOMMIE JEAN VALMASSY

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Okay. I have another a question here. "Does the gasoline baseline include the increasing amount of tar sand oil coming into our region 40% more carbon intensive?"

VINCE CAMOBRECO

Again, you know, the Act mandated the 2005 baseline. So that's what we've based the

[01:05:30]

percent of tar sands on is how much was used in 2005. As I mentioned, for the final rule we are sort of looking at the impacts of these alternatives on conventional crudes. But again, the Act specifically said that we compare the biofuels to 2005 petroleum which sort of specifies or mandates, or complies a certain

[01:06:00]

percentage of tar sands and other crudes that we used.

TOMMIE JEAN VALMASSY

Okay. What steps do we need to take to get other potential biodiesel feedstock qualified other than soy and waste grease? Camelina, for example, as a non-food crop produces more oil per acre, uses a fraction of the inputs like water and fertilizer and is grown on non-food marginal land.

DAVE CAMOBRECO

The short answer is

[01:06:30]

send us as much data a possible and we will make every attempt to evaluate it and include it in the Look Up Table for the final rule.

TOMMIE JEAN VALMASSY

Okay, and there's information on how to send that information to you, to email it to either of you?

DAVE CAMOBRECO

Just a part of the comments that people send in on the proposal.

TOMMIE JEAN VALMASSY

Okay. Great.

DAVE CAMOBRECO

There are directions on the first page on the proposal about how to send in comments.

TOMMIE JEAN VALMASSY

Great.

[01:07:00]

I think we have time for a couple more questions. "Does EPA require a surety bond to register a foreign biofuel producer and how much is it?"

DAVE CAMOBRECO

I'm not sure of how much it is, but consistent with our approach on our RFS1 Program, yes, any foreign renewable fuel producer that would be participating in the RFS Program and generating RIN, would need to post a bond. I just don't happen to know exactly

[01:07:30]

what the amount is.

TOMMIE JEAN VALMASSY

Here's another question. "CARB generally applied to CI value of 30 for indirect land use in their LFCS. Your slides seem to indicate about twice that effect. How could you compare your data with the CARB approach?"

VINCE CAMOBRECO

Yes, as I mentioned this is sort of an ongoing work with CARB.

[01:08:00]

Again, as I mentioned, a similar type of approach was taken in terms of factoring in their claims change. Again, the big difference being they use the GTAP Model whereas we use the FASOM and FAPRI models. So we're basically looking at those two approaches and the two model results. And as we go toward the final,

[01:08:30]

looking at some of what the differences were and basically spelling that out as well as looking at incorporating, if possible, some of those GTAP results into our final rule analysis as applicable. So I guess I'll leave it at that but as we go towards the final rule, we working to

[01:09:00]

coordinate closely the CARB.

TOMMIE JEAN VALMASSY

We're still having questions come in. So, I'll just check with you, Vince and David, to see if we do run out of time for questions later if it's something that we can forward to you and EPA here can work with you to respond to those later?

DAVE CAMOBRECO

Sure.

TOMMIE JEAN VALMASSY

Okay, great. A couple more before we move on. "As I hear your explanation of Brazilian sugarcane displacing other crops instead of pastures,

[01:09:30]

someone has asked me how confident does EPA feel about their knowledge of and your data on practices in other countries?"

VINCE CAMOBRECO

I guess when we look at these models, probably the biggest impact, the biggest country in terms of land use change and agricultural change in mass is Brazil. That's where we see

[01:10:00]

the kind of majority of impact. The proposal analysis is again based on the FAPRI Model, which is a well-used model to look at these type of agricultural sector impacts, and changes internationally. Again, using the satellite data to project what

[01:10:30]

types of land would be impacted. For the final rule, we are working with FAPRI and working with people in Brazil to get a better, you know, to make ... Basically to improve our understanding of an agricultural sector and sort of farmer impacts in different countries. But this is like Brazil because as I mentioned that was where we saw kind of a majority of the changes.

[01:11:00]

So we have worked with them throughout the proposal process and continue to work with not only our agricultural experts domestically but also in Brazil and other countries.

TOMMIE JEAN VALMASSY

Okay, and Vince you're just fading in and out a little bit. It's a little bit hard to hear you.

VINCE CAMOBRECO

Okay.

TOMMIE JEAN VALMASSY

A couple more questions. "Can the current fleet use 35 billion or so

[00:11:30]

gallons of ethanol at E10 level, or would higher levels of ethanol need to be allowed?"

DAVE CAMOBRECO

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The current fleet can only use about 15 billion gallons as E10s. So, yeah, we would absolutely have to go to higher blends. There's a discussion in the rule about what those might be, the discussion of mid-level ethanol blends. Many folks listening in here today might know that we have a request

[01:12:00]

to waive the restriction on the 10% limit on ethanol concentration and to allow up to 15%, and that's an evaluation ongoing right now. The decision to do that in December. The alternative to that, the primary alternative to that, would be E85 and for that for that to be a viable solution, you'd need a lot more flexible fuel vehicles on the road. There is an alternative

[01:12:30]

which is really my preferred alternative, which is that there would be more non-ethanol fuels out there like cellulosic diesels or that sort of thing? But, of course, that depends entirely on how the market develops.

TOMMIE JEAN VALMASSY

Okay. We have time for just one more question before we move back into your slides. "Are you planning to analyze forced waste to fuel? And if so, what processes

[01:13:00]

are you most likely to consider?"

VINCE CAMOBRECO

So for the proposal, again, using the FASOM and FAPRI models, the FASOM model being our domestic model, has both an agricultural and a forestry component. And for the proposal, we had only used the agricultural component. For the final rule, we are using both the agricultural and forestry component. So we will be looking

[01:13:30]

at forestry in more detail including forestry waste to biofuels. In terms of the actual process, I'm not sure. I think we may be looking at a number of different potential pathways of using the feedstock to produce biofuels.

TOMMIE JEAN VALMASSY

Okay. All right, well, if it's all right with you, can we go ahead and jump back into your presentation?

[01:14:00]

DAVE CAMOBRECO

Absolutely.

TOMMIE JEAN VALMASSY

So we're on slide 20 Renewable Biomass Definition?

DAVE CAMOBRECO

That's right, and why don't you go ahead and forward to 21. The Renewable Biomass Definition is probably second to the lifecycle area in terms of complexity of implementation. There's a lot of discussion in the proposal about various definitions of renewable biomass, and in particular the whole land use

[01:14:30]

restrictions issues. For example, the agricultural land must have been cleared or cultivated prior to December 19, 2007, and actively managed or fallow and non-forested. That's a mouth full. Woody biomass from federal land is not allowed except in wild fire areas, and then there's this slash in pre-commercial thinnings from forestland category. The bottom line of all

[01:15:00]

of the Act's requirements regarding renewable biomass is that the renewable fuel producers must know the source of their feedstocks. They must know what types of land they came from. And if, for instance, it's woody biomass, they have to know things like, "Well, did it come from a federal land? Did it come from forested land? Was it previously cleared or cultivated? Was it from pre-commercial thinnings, etc.?"

[01:15:30]

So it's a complicated area. Slide 22. We proposed that the renewable fuel producers would be required to maintain records to support their decisions to generate or not generate RINs for a given batch of renewable fuel. The key is ... There are couple of points here, but the key one I want to point out is that even in the proposal what we said was that ... Well, let me take a step back. In the RFS1 Program, we required ever single gallon

[01:16:00]

of renewable fuel to have a RIN generated for it. RINs being the currency of the program. This is like credits that are used for compliance purposes on the part of refiners. And that was pretty straightforward thing to do because all we really had to do was point to the fact that it was a renewable feedstock, which you can tell just by looking at it, and the type of fuel that's produced. Well,

[01:16:30]

we wanted to extend that same concept to RFS2. Again, that every gallon of renewable fuel must have a RIN generated for it. The catch was that now a renewable fuel producer had to prove that it met the definition of renewable biomass, including the full range of this restriction issue. So what we said was, "Well, if

[01:17:00] somebody failed to make that showing, then they could avoid generating RINs." If, for instance, they

determined that economically it's to their advantage to not generate RINs, and in order to preclude that as a possibility, what we proposed is that if a renewable fuel producer wanted to generate RINs, he had to prove that his feedstocks came from valid renewable biomass, but also if he wanted to produce renewable fuel without generating RINs, he had to prove that his feedstocks did not meet the definition

[01:17:30] of renewable biomass. Now that was designed to ensure that all qualifying renewable fuel did, in fact, have RINs generated for it, but it created a kind of a perverse situation where people are actually forced to gather information to prove a negative. So, we've taken the comments on that. We've already heard a lot of opinions from stakeholders about that issue, and it's likely that this

[01:18:00] or some related aspect of our renewable biomass provisions are going to have to be modified to the final rule. We took comments on a variety of other approaches. In terms of what records the renewable fuel producer has to keep, issues related to like chain of custody where there would be information transferred from the farmer through grain elevators all the way through a renewable fuel producer company or industry wide assurance

[01:18:30] programs, use of satellites and aerial images data, and that sort of thing. All of those are open for comments. There were so many different possible approaches that I think it would be fair to say that the final rule will look different in some respects than the proposal. Okay, slide 23. Sort of the impacts of this renewable biomass definition of the foreigner producers of renewable fuel,

[01:19:00] they would have to do much the same thing as domestic producers, but we also took comment on whether other requirements should also be placed on this to help ensure compliance such as more stringent or upfront evidence of feedstocks meeting the definition of renewable biomass and such issues as having to segregate their volumes of renewable fuel from all other volumes in order to send them

[01:19:30] to the U.S. All right, let's move on to slide 24 and 25. Let's go right to 25. This is the discussion of how RINs are generated and used for compliance programs, or for compliance, rather. Slide 25, the basic concept is if you're familiar with the RFS1 Program,

you will be largely familiar with what we're proposing for RFS2. RINs, Renewable Identification Numbers, will continue to be the currency for trading

[01:20:00]

and for compliance. RINs must be transferred along with renewable fuel through the distribution system. Refiners and importers of gasoline and now diesel as well are responsible for acquiring these RINs and using them to meet their obligations. There will be recordkeeping and reporting requirements applicable to everybody who touches a RIN, and it's based on RIN ownership not on ownership or custody of volumes of renewable fuel. All right,

[01:20:30]

let's move on to slide 26. The RIN is going to be essentially the same as it was under RFS1. The only difference would be that the D Code, in the middle of the RIN would change in terms of definition. There were only two possible values under RFS1. D could equal a 1 or a 2. If we now have four values under RFS2, that match up with the four different categories of

[01:21:00]

renewable fuel that we talked about in the beginning. And the renewable fuel producers and importers who generate the RINs using this Look Up Table on the right. This is the Look Up Table I referred to before at Reg Section 80.1426, and in essence a renewable fuel producer or importer would use that Look Up Table to determine which D Code to use for a particular type of renewable fuel.

[01:21:30]

And, of course, they have to know not just the type of renewable fuel but also the feedstock used to produce it and a production process. The reason is that all those things contribute together to the lifecycle analysis. So you have to know the type of feedstocks, and the type of production process. Slide 27. As part of the requirements for RFS2, we need to expand the registration process

[01:22:00]

for renewable fuel production facilities. Just knowing your company name and location is no longer sufficient. Now we need to know a bunch of other types of information. For instance, the products produced at the facility, the type of feedstock they can use, their production capacity, and what process they use, and what sources of process energy they have. The whole point of all that information is to allow it to verify

[01:22:30]

that the RINs they're generating are valid and that the D codes

they're using are appropriate. It also allows us to determine if a facility to be grandfathered from the 20% greenhouse gas threshold. There's some new information there about the registration process down at the end, but the key point that needs to be in place, the facility needs to be registered with us by the time they start generating RINs under RFS2.

[01:23:00]

All right, let's move onto slide 28. The next couple of slides have to do with the EPA Moderated Transaction System. This is something that is not required by the new Act, but nevertheless, is sort of a natural fallout from the new requirements, and also from a lot of concerns that were raised regarding the implementation of RFS1.

[01:23:30]

There were a lot of errors in RIN transfers. People would write down a RIN and given all the numbers, they would mix them up or they would try to do things like invalidate a RIN because for their own bookkeeping purposes they wanted to replace it with a different RIN. And those kind of things just made a mess of the system. So we are under development for a web-based system that would track all RIN generation

[01:24:00]

and all RIN transfers and all RIN use for compliance purposes. EPA wouldn't actually ... All EPA would do would be to make the system available and then users, anybody who owns a RIN would have to put information into the system regarding RINs that they own and transfer to other parties. Basically, all of the requirements of the rule making

[01:24:30]

regarding how RINs are transferred from one party to another, all that would stay in place. The system, this EMTS system, its only purpose is to record all of the transfers of RINs, the generations of RINs and the transfer of RINs and the use of RINs for compliance purposes. So product transfer documents, recordkeeping, attest engagements, all of these other things that were required under RFS1, they would still be required

[01:25:00]

under RFS2. Slide 29. This is a little graphical representation of how this would work. Essentially, it just creates an environment to track the universe of RINs. What they offer here a colleague of mine called "RIN Credits." RIN are not permitted to exist outside of this environment, meaning the only RINs that EPA counts as valid are those that are recorded in EMTS.

[01:25:30]

Now EMTS isn't up and running yet. We're hoping to have trial

versions of it available some time this year. As to whether it's going to be fully up and running and required by the beginning of next year, that, to be honest, I'm not entirely sure. I think it's going to be available for people to opt in to use it at the beginning of 2010. Let me take a look here. Slide 30.

[01:26:00]

This is getting a little bit into some information that I'm not terribly familiar with having to do with the technology involved. For those of you who have questions about how EMTS would work, you can send them into Ashley there and she'll forward them to me and I'll get them to the right person. All right, moving on to some other important aspects, slide 32. When will the program apply?

[01:26:30]

First of all, everyone should know that until we change the regs, the RFS1 reg would continue to apply. So RFS1 regs apply in 2009. We did set a standard based on 11.1 billion gallons that applies in 2009, and if we didn't set any kind of a new stand ... I'm sorry, if we didn't change the regs for 2010, the RFS1 regs would continue to apply for 2010. However, we are planning our

[01:27:00]

hope is that the RFS2 program will begin in 2010. We proposed that it would January 1st. At this point, given the extension of the comment period, it may not be January 1st. It may be a month or two after that. If that were the case, we did discuss in the rule how you would deal with the fact that there are some RINs generated under RFS1 requirements at the beginning of 2010,

[01:27:30]

and other RINs generated under RFS2 requirements for the latter part of 2010. And there is a relatively straightforward way of making both of those kind of RINs valid for use for compliance purposes with the annual 2010 standards. All right, slide 33. We co-proposed two different approaches for equivalence

[01:28:00]

values. This is the way that a producer of renewable fuel knows how many RINs to generate for every gallon of fuel that he produces. We co-proposed that equivalence values would be based either on energy content in comparison to ethanol, in which case ethanol would get an equivalence value of 1 and biodiesel 1.5 and so on. Or alternatively, that equivalence values would be based on straight volume which is just another way of saying

[01:28:30]

all equivalence values would be 1.0. So we co-proposed both of these concepts in there and, you know, we're awaiting all of the comments coming in before we make a final decision. We lay out the pros and cons of each one of these. Based on what we've

[01:29:00] heard so far at the hearing in early June and through direct contact with stakeholders, it sounds like most folks would

[01:29:30] prefer that we stick with the energy-based approach in which the equivalence values would be as they're shown here on the list, the 1.5, 1.7, 1.3. All right. Slide 34. I raised the issue of waivers earlier on at the beginning here of our discussion. We will be

[01:30:00] proposing the cellulosic biofuel standard every year. We have to do this because the Act says that for the cellulosic biofuel standard in particular we have to determine what the likelihood is that the required volumes in the Act will actually be met. And if we believe based on production capacity that those volumes can't be met, then we have to set a standard that's

[01:30:30] lower than what the Act would otherwise have required. That means that every year we need to collect information from the industry and that's the reason that we are proposing these Production Outlook Reports. We did propose that for 2010 the required volume of .1 billion gallons would be the basis of the standard. As time goes on here, it looks less and less likely that we will be able to

[01:31:00] finalize a standard for 2010 for cellulosic biofuel that is based on .1 billion gallons. It more likely be considerably less than that. Then there's this complicated aspect of the Act, which says that if we set the standard below what the Act would otherwise require, we have to also make cellulosic biofuel credits available. And in the proposal,

[01:31:30] we actually quote them allowances. The purpose appears to be one of ensuring that the cellulosic biofuel industry can't charge exorbitant prices for their product. The prices actually specified in the Act, I think it says, twenty-five cents per credit or \$3.00 minus or less the wholesale price of gasoline. Something like that.

[01:32:00] And what we would do is if we set the standard at below what the Act would otherwise require, we would have to make a number of credits available up to the standard that we set. In other words, refiners and other obligated parties who must comply with the standards could, in fact, comply entirely by buying these credits from EPA rather than buying any actual cellulosic biofuel volume.

[01:32:00] All right. Slide 35. This is just a summary of the impacts analysis we did for the rule. The impacts that we did, since this program

was mandated, we didn't have to justify the standards, but we did have to go through a process of evaluating what the impacts are on emissions

[01:32:30]

and air quality and petroleum consumption and costs, energy security, food costs, and so on. And there's a summary here of what those results are. But again, even though that takes up something like maybe half of the preamble and most of the renewable ... I'm sorry, the Regulatory Impact Analysis, again, the impacts

[01:33:00]

of the analysis of the impacts of the rules is not used to justify the standards since the standards were set by Congress. All right, slide 36. This is similar to a question that was raised a little earlier. It has to do with how much ethanol can actually be used. Right now, the only valid fuels are E10 and E85. By 2013, essentially all fuel in the U.S. will be E10,

[01:33:30]

and that's ... Here it says 14 to 14-1/2 billion gallons. I think I said 15 billion earlier. There are various ways that we can meet the full volumes mandated by Congress. Either you have more E85 and flex-fuel vehicles or, of course, that means you have to have more flex-fuel vehicles and more E85 stations, better E85 pricing to compel people to actually use it. You can have non-ethanol biofuels; cellulosic diesels, for instance,

[01:34:00]

or algae based and then, of course, there's the mid-level of ethanol blends as a temporary measure. All that would do is buy you a couple of years, but eventually you still end up doing more E85. So that different blend will ... Why don't you put slide 37 up there and then we can answer some questions.

TOMMIE JEAN VALMASSY

Okay, great. Well, we have a few questions and some I didn't get to before we jumped back into the slides.

[01:34:30]

One big question here, "What will be the air quality impacts of this and what modeling has been done on that?"

DAVE CAMOBRECO

Air quality modeling takes a long time. It takes months of preparation and so we were not able to complete that work for the proposal but we are in the process of doing it right now for the final rule. It's actually going to be based upon the emissions results

[00:35:00]

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that we did for the proposal. So the control cases and reference cases that we used to generate emission profiles, total [SOUNDS LIKE] puns, and the various mechanical pollutants increased, or in some cases decreased. That will be the basis for the air quality model.

TOMMIE JEAN VALMASSY

Okay, great. Well, here's another question. It's kind of a long one but a good one so bear with me here. "On May 5th, '09, President Obama created a biofuels

[00:35:30]

and rural economic development memorandum, and it requires USDA, DOE, and EPA to get on the same policy page through a biofuel inter-agency working group. The DOE Office of Biomass Program believes that indirect and use policy is five years ahead of the science, and no models are currently up to the job. How will this working group impact the EPA RFS Rules?"

DAVE CAMOBRECO

I look at this as

[01:36:00]

his own thoughts on it, but the short answer is that short of a change to our charge under the Energy Independence and Security Act, we have to include indirect land use impacts in our assessment of lifecycle greenhouse gas impacts. We're happy to have, you know, other consortiums or discussion groups

[01:36:30]

evaluating how it's done, and updating it as time goes on but we cannot go forward. Again, without a change in the law, we can't go forward with a program that illuminates that aspect. Vince, do you want to add anything?

VINCE CAMOBRECO

Nothing other than we're familiar with this working group that was set up and, you know, obviously we have done that, but we've also worked with both DOE and USDA direct process of

[01:37:00]

proposal developing lifecycle results, and we'll continue to do so as we go out in developing the final rule making.

TOMMIE JEAN VALMASSY

Okay, great. We have a question about RINs now, Renewable Identification Numbers. There are a few folks who aren't really familiar with RINs identification ... Generation. I'm sorry. Is there a presentation or somewhere where

[01:37:30]

someone could get a little bit more information and truly understand the intricacies of the program?

DAVE CAMOBRECO

Probably the easiest thing to do if you're really unfamiliar and coming at it from the ground floor here, is to go back to the presentations that we made available when we rolled out the RFS1 Program. They're on our RFS website. When we came out with our final rule making, which

[01:38:00]

I think was published on May 1, 2007, if I remember correctly. We had a workshop in Washington that I think was May 10, 2007, and there were a number of presentations that we made that include such things as how the whole RIN Program works. I believe that that overview presentation is called "Overview." Again, it should be on our website. There are also a couple of other presentations on recordkeeping,

[01:38:30]

and reporting and that sort of thing.

TOMMIE JEAN VALMASSY

So on the slide that's up right now, you have a website up there? Is that system one where people should go, the epa.gov.otaq/renewable_fuels?

DAVE CAMOBRECO

Yes.

TOMMIE JEAN VALMASSY

Okay, great. And then kind of another follow on RINs. "What are the incentives for companies to generate RINs?"

DAVE CAMOBRECO

Well, under RFS1, you are required

[01:39:00]

to generate RINs, if you make renewable fuel. Under RFS2, we proposed that you would have to generate RINs. If you have qualifying renewable fuel, then you would have to prove why you didn't generate RINs. If you don't want to, you'd have to prove that your feedstocks did not meet the definition of renewable volume then. That's not the same as saying what the incentive is. That's a regulatory requirement.

[01:39:30]

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Incentives other than being in violation of the regs, because you didn't generate RINs, the incentives would all be driven by whatever the market demand for a particular type of renewable fuel is.

TOMMIE JEAN VALMASSY

Okay, here's another question. "How long have the FAPRI and FASOM models predicted actual land use change in other areas of the world as verified by satellite images,

[01:40:00]

and in cases where the models did not match reality, what other factors do they think influenced their results?"

VINCE CAMOBRECO

Here again, these models are sort of well established models that have been used in the past to look at another of different things including FAPRI models sort of set up by Congress to look at agricultural policy questions.

[01:40:30]

I guess it's maybe what we're really ... Again, what we're really trying to do with this analysis is we're projecting out into the future two different scenarios kind of a baseline and the policy volumes. Our policy case of fuels so holding everything else the same. So obviously, there are a lot of factors

[01:41:00]

that go into what happens to agricultural production over time, you know, whether it's worldwide recession, for example, which is hard to predict into the future. But that's not really what we're trying to do with this analysis. What we're trying to do is for a given baseline, we're just looking at what is the change

[01:41:30]

due to biofuels. So we're not trying to capture, you know, all the other possible policies or actions like a curve, but what we're looking at is what's the difference with the change in biofuels. And that's what, you know, we're using the models to predict and we are sort of comfortable with using them in that context in terms of just predicting change off of

[01:42:00]

baseline.

TOMMIE JEAN VALMASSY

Okay, here's another question. I think, Vince, this is really some information you were talking about. "What is the data source leading to the belief that all fuel in the U.S. will be E10 by 2022? Since the oxygen requirement was removed after EPA Act of

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2005, a lot of fuel blended seems to be at only 5% ethanol by volume?"

[01:42:30]

DAVE CAMOBRECO

Almost no fuel is blended at 5 volume percent ethanol because of the IRS tax subsidy structure. In fact, at this point I'm not aware of any ethanol that 's blended at less than 10 volume percent. The calculation is based entirely on the total volume of gasoline that we project is going to be demanded by consumers, and that projection comes

[01:43:00]

from the Energy Information Administration on the arm of DOE, and they're just saying, "Well, if you made all of it E10, how much ethanol would that be?" And you wind up with 14 to 15 billion gallons, far short of the 36 billion gallons required under RFS2.

TOMMIE JEAN VALMASSY

Has the EPA determined how it will calculate the RINs for electricity used in vehicles and produced from biomass,

[01:43:30]

RINs per million cubic feet?

DAVE CAMOBRECO

Well, you said cubic feet and that's usually a natural gas not an electricity metric, but what we did in the proposal is say that if a facility wanted to generate RINs for renewable electricity,

[01:44:00]

renewable natural gas, or renewable propane, they could do that but only if they prove that that renewable electricity and natural gas or propane was actually used in a highway or non-road vehicle. It can't be used for residential heating, for instance. So we're assuming that most parties aren't going to want to go through that whole tracking process. In terms of

[01:44:30]

exactly how they would generate RINs, there would have to be a line in the Look Up Table in Section 80.1426, which tells them what D Code to assign. We did say that if there's any renewable fuel that is measured on something other than a biometric basis ... I'm sorry, let me say that again. If there's any renewable fuel that is not a liquid at standard temperature and pressure, then we basically use ethanol

[01:45:00]

equivalence to determine its volume. For instance, if you made a thousand kilowatts of electricity, a thousand kilowatt hours of electricity, you would convert that into gallons of renewable fuel

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using, if I remember correctly, 77,930 BTUs per gallon, and that would tell you how many gallons of renewable fuel your electricity is equivalent to.

TOMMIE JEAN VALMASSY

Okay, thank you.

[01:45:30]

Could you comment on the elimination in RFS2 of the requirement to retire RINs for off-road biodiesel and will it be backdated to the current RFS?

DAVE CAMOBRECO

The new Act extends the program to all highway and non-road fuels, all transportation fuels. That's different than RFS1, which under EPAC

[01:46:00]

2005 only applies to highway fuels. So, that was straightforward for us. We knew that RINs that had to be retired under RFS1 because they were used in a number of applications, would no longer have to be retired under RFS2. The question then, of course, is, "Well, what happens about sort of a transition issue? If you have 2009 RINs that were retired under RFS1, could they still be used for RFS2?"

[01:46:30]

And what we proposed is a reinstatement process. So somebody actually retires a RIN because it's used in a number of applications under RFS1 regs, they can reinstate it, sort of resurrect it for use under RFS2.

TOMMIE JEAN VALMASSY

Okay, great. Well, I think we may have touched on this a little bit before, but with all the hype around algae, when does EPA plan to do a full

[01:47:00]

LCA for algae based biofuels. And without an LCA, what category would biofuel from algae fall under? Specifically, the difference between biofuels that need the D975 Diesel Standards versus the D6751 Biodiesel Standard, could be significant.

VINCE CAMOBRECO

I can speak to the lifecycle portion of that question. I mean, I think again for the proposal,

[01:47:00]

you know, sort of our analysis was focusing on the fuels that we saw at the time going towards meeting the majority of the 36 billion

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gallon mandate, and that's why we focused on certain we did. You know, obviously, we heard with the more interest in algae biofuels that is definitely something we are looking for the final rule and based on the types of information that available,

[01:48:00]

you know, if we have the required information that would be something that we could include as part of the final rule specific lifecycle analysis for algae. But then in terms of how that would fit under the different D Codes, you know, obviously it would depend on the lifecycle results that would then be on that. I'm not sure.

[01:48:30]

TOMMIE JEAN VALMASSY

I think someone is asking in general could EPA comment on the emissions of future biodiesel, or biofuels that meet the D975 that come from renewable feedstocks.

DAVE CAMOBRECO

In that particular case, you're talking about something which is a [INDISCERNIBLE] defined as biodiesel and that is how we

[01:49:00]

defined biodiesel in the proposal and under RFS1 so it could be a valid fuel.

TOMMIE JEAN VALMASSY

Okay. There are a few more questions coming in here, and you're welcome to go ahead and keep sending in your questions. Here's one. "Is this lifecycle program synonymous with the Bees, B-E-E-S model

[01:49:30]

in any way?

VINCE CAMOBRECO

The Bees, that's the, I think that's the one out of commerce looking at, I think it was mainly building materials but developing lifecycle results for those. It's, I guess, similar. I guess the aspect that would be different is, you know,

[01:50:00]

again based on the mandate where we've looked at the indirect impacts that sort of more markets and agricultural, economic based modeling which I don't know if that's included in any of the Bees work.

TOMMIE JEAN VALMASSY

Okay. Can we use ethanol for electricity generation say as the replacement for coal?

[01:50:30]

DAVE CAMOBRECO

That ethanol would not count as valid renewable fuel under the RFS2 program.

TOMMIE JEAN VALMASSY

Okay. Someone writes, "I'm a little confused about the approval process for biofuels made from feedstocks for which EPA has not conducted lifecycle analysis. Can you please explain how these fuels could be approved?"

DAVE CAMOBRECO

If a party

[01:51:00]

using a feedstock is not already in the Look Up Table. Right now in the proposal, there's no alternative mechanism for them to generate RINs for renewable fuel made from that feedstock. But there's a brief discussion in the rule about asking, you know, how might we deal with this, and we have a lot of stakeholders who are raising that question since

[01:51:30]

the proposal came out. So if the person asking the question has some ideas and wants to send them to us as part of their comments, feel free. We are going to have to look more closely at this for the final rule.

TOMMIE JEAN VALMASSY

Okay. Here's a follow-up question to the question I asked earlier about the D-975. "Since future fuels in development are already in the market such as renewable diesel, sand diesel, green diesel, etc., all meet the D-975

[01:52:00]

standard and not the D-6751 standard, what is EPA's role in determining the lifecycle emissions of these fuels? Would they be assumed to have the same emissions as diesel or better?"

DAVE CAMOBRECO

There would be no assumption at all. Just because it looks... Just because it's chemically indistinguishable from conventional diesel fuel, doesn't mean that we make any assumptions regarding lifecycle impacts. And that particular fuel along with the feedstocks

[01:52:30]

and the production process would be set into our lifecycle analysis to determine whether or it qualifies to generate RINs, and if it does, which of the four categories of RINs apply?

TOMMIE JEAN VALMASSY

Okay. So in the RFS2, are there changes to the RIN separation blending requirements, and specifically to allow more latitude for renew able fuel producers

[01:53:00]

to separate RINs?

DAVE CAMOBRECO

We did no propose any changes to the whole RIN transfer, RIN separation requirements in RFS2. You're basically extending the RFS1 requirements to RFS2. We did take comments on the concept of not requiring RINs to be transferred with volume, and there's a discussion in there of why we were raising that as an issue, but

[01:53:30]

we weren't proposing any changes.

TOMMIE JEAN VALMASSY

Okay. All right, well, we're close to running out of time. So I think we need to go ahead and end it here, but if you're still typing in your questions, please go ahead and do that. We'll make sure that the questions get passed on to our presenters and we'll keep a record of them and I will pass it back over to Ashley Zanolli to go ahead and wrap up here. Ashley.

ASHLEY

Yes, thanks so much, Tommie Jean and to David

[01:54:00]

and Vince, as well, for presenting today. Like she said, if you have additional questions, feel free to type them in the question field. If not, you can email them to me directly and we'll compile those into one document, and they will all be Q&As, and that will be posted on the same website where you can also download the presentation as well as the recording of the Webinar. Thanks, everyone for your time and have a great day.

DAVE CAMOBRECO

Thank you.

VINCE CAMOBRECO

Thanks.

ASHLEY

Thanks.

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TOMMIE JEAN VALMASSY

Thank you.

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