COMMITTEE WORKSHOP

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	
Proposed Adoption of Regulations for the Administration of the Alternative and Renewable Fuel and Vehicle Technology Program	Docket No. 08-OIR-1

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

TUESDAY, SEPTEMBER 9, 2008

9:10 A.M.

Reported by:
Peter Petty
Contract No. 150-07-002

COMMISSIONERS PRESENT

James D. Boyd, Presiding Member

Karen Douglas, Associate Member

ADVISORS PRESENT

Susan Brown

Diana Schwyzer

STAFF and CONTRACTORS PRESENT

Aleecia Macias

Jared Babula

Mike Smith

Jim McKinney

ALSO PRESENT

Tom Koehler
Pacific Ethanol

Gina Gray (via teleconference)
Western States Petroleum Association

Justin Rathke
Capstone Turbine Corporation

Andrew Panson
California Air Resources Board

Sonia Yeh
University of California Davis

Kurt Schuparra
California Strategies and Advocacy, LLC

Noelle Cremers (via teleconference)
California Farm Bureau

ALSO PRESENT

Jeff Stephens
Propel

Danielle Fugere
Friends of the Earth

Stephen R. Kaffka
University of California Davis

Bob Jagunich
Biofuels, Logistics and Terminals

I N D E X

P R O C E E D I N G S

9:10 a.m.

PRESIDING MEMBER BOYD: Good morning, everybody. Welcome to our workshop, Committee workshop. The notice pretty clearly indicates the purpose, and we're all getting used to each other. And I think we see and know this as another in the continuing series of meetings and workshops on the subject of the regulations regarding AB-118.

I welcome you all, I thank you all for being here. The purpose, as I indicated, is pretty well spelled out in the notice. I don't want to take a lot of time, other than to just reiterate the why and what we hope to accomplish today.

The staff is going to present for discussion, again, the draft regulation language relating to sustainability goals. And going to review revised regulation language for a series of definitions and other attributes of -- hope to be attributes of this program. So, we'll get a presentation on that today.

And then have what I hope to be a very candid and informal, but formal in the fact that this is a workshop, and a workshop discussion, of

views and issues on that subject.

Thank you, Marlena, struggling without my glasses to see what I'm supposed to be saying, and I forgot them. In any event, made it far enough through the agenda to know that it's time for me to ask my fellow Committee Member, Commissioner Douglas, if she'd like to say any words before we turn the program over to Aleecia.

ASSOCIATE MEMBER DOUGLAS: I'm fine.

PRESIDING MEMBER BOYD: Very good. Aleecia, it's all yours.

MS. MACIAS: Good morning. My name is Aleecia Macias; I'm one of the supervisors in the emerging fuels and technologies office.

And just before we begin, a few housekeeping items. For those of you who aren't familiar with this building, the restrooms are outside in the lobby. There's also a snack bar on the second floor under the white awning.

And lastly, in the event of an emergency and the building is evacuated, please follow our employees out to the appropriate exit. We'll reconvene at Roosevelt Park located diagonally across the street from this building. Proceed calmly and quickly and we'll make sure you get out

there safely.

We're going to begin this morning with a presentation on the revisions we've made to the regulatory language based on comments we received from the August 11th workshop.

Okay, just a reminder. The program goal of AB-118. The alternative and renewable fuel and vehicle technology program is going to develop and deploy innovative technologies and transform California's fuel and vehicle types to help attain the state's climate change policies.

As we presented on August 11th, our rulemaking process is going to be -- well, we're developing and adopting regulations to clarify ambiguities in the statute, creating certainty in administering the program. And it consists of two phases, the informal and formal process.

We are currently in the informal process where we're developing regulatory concepts and draft regulations for public review. And then we will shortly begin our formal process where we submit our proposed regulations to the Office of Administrative Law.

This is the remainder of our rulemaking timeline. Today is bolded, September 9th, where

we're having a public workshop to review draft sustainability regulations. And we're also going over changes that we've made since the August 11th workshop based on comments received.

September 19th written comments are due on the draft regulations. On the timeline it says sustainability, but we will be accepting comments on the full regulations package. And then on October 7th we're going to be submitting our package to the Office of Administrative Law.

If you go along to the end of the timeline, April 2nd is the date that we're aiming for for the regulations to take effect.

The regulatory areas with proposed language changes from the August 11th workshop consist of advanced vehicle technology, funding restrictions, advisory committee and investment plan. And Jim McKinney will later be presenting the sustainability regulations.

So the original language for advanced vehicle technology was projects that produce or manufacture advanced vehicles and vehicle components in California for the life of the project shall be eligible for funding under the program.

Such projects include, but are not limited to, technologies that provide any of the following: improved fuel efficiency, lower greenhouse gas emissions, alternative fuel usage, fuel cell technology, plug-in hybrid technology, electrified components, energy storage, vehicle retrofit and battery recycling.

Comments we received from August 11th include that we should reference the section in statute that lists technologies rather than restating the list of technologies to which the guideline applies.

Include language in the advanced vehicle technology section that references the investment plan. And projects eligible for funding should extend beyond California if there are significant environmental benefits for California.

So the revised language, based on these comments, is projects that produce or manufacture vehicles and components as described in Health and Safety Code section 44272(c) shall be eligible for funding.

The funding restrictions original language was a project that is mandated by any state or federal law, rule or regulation, or by an

air district rule or regulation, memorandum of agreement, understanding with a regulatory agency, settlement agreement, mitigation requirement or other legal mandate shall not be eligible for funding.

Neither shall a project be eligible for funding if it is necessary to achieve compliance with an applicable state or federal law, rule or regulation, or with an air district rule or regulation, memorandum of agreement, understanding with a regulatory agency, settlement agreement mitigation requirement or other legal mandate.

To the extent a project exceeds what is required to comply with an applicable state or a federal law, rule or regulation -- and I'm just going to say dot, dot, dot for the rest of that -- it may receive funding for that part of the project for the applicant -- that the applicant demonstrates it is not mandated or integral to meeting a mandate. For purposes of this section a mandate refers to any requirement enforceable by a state or federal agency, or by an air district for the purpose of reducing the emission of one or more criteria pollutants, toxic air contaminants or any greenhouse gas.

The comments we received were: Make a distinction between entity and project. Simplify listing of legal documents to language below. And projects eligible for funding should extend beyond California if there are significant environmental benefits for California.

So the revised language, we have cut it back quite a bit. It's a project shall not be eligible for funding if it is mandated by any local, regional, state or federal law, rule or regulation or order, or is otherwise required by legally enforceable document.

To the extent a project exceeds what is required for compliance with a legally enforceable requirement, it may receive funding for that part of the project that the applicant demonstrates is not mandated to meet the requirement.

For purposes of this section a legally enforceable requirement refers to any requirement enforceable by a local, regional, state or federal agency for the purpose of reducing the emission of one or more criteria pollutants, toxic air contaminants or any greenhouse gas.

And we received another comment after the latest proposed language was posted, so we

have changed the word -- let's see, where it says if it is mandated by any local, regional, state or federal law, to if it is used for compliance with any local, regional, state or federal law, rule or regulation.

So, the comment was revise wording some regulations require performance standards so that a specific project may not be mandated, but still may be used to comply with a regulation and consequently should not be eligible for funding.

For the advisory committee section no material changes were made to the language. Just minor wordsmithing.

And finally, the investment plan. The original language reads: All funding decision made by the Commission shall be consistent with the investment plan which shall be updated as needed annually.

The investment plan shall not identify specific projects or technologies for funding, but shall serve to give public notice as to the types of projects that would be eligible to receive funding under the program and to specify the categories of funding allocations.

A comment we received was: Investment

plan should identify certain baskets of technologies to avoid confusion and give clear direction to the advisory committee.

The revised language is: All funding decisions made by the Commission shall be consistent with the investment plan, which shall be updated as needed annually. The investment plan shall serve to give public notice as to the types of projects that would be eligible to receive funding under the program and to specify the categories of funding allocations.

Are there any public comments, remarks, questions?

MR. SPEAKER: Could you go back to slide 3 change, -- you add the word compliance --

MS. MACIAS: This one here?

MR. SPEAKER: Yeah.

MS. MACIAS: Um-hum. Can you come up to the mike so that we can -- or do you have a specific question? Oh, okay.

PRESIDING MEMBER BOYD: I forgot to caution you all if you want to make a comment that ends up on the record, please come to the microphone.

MR. KOEHLER: Thank you, Jim. Tom

Koehler, Pacific Ethanol. Actually I've got a couple questions. And it has to do with the notion that projects eligible for funding should extend beyond California, or significant environmental benefits for California.

I'm just curious to know where that came from and what the thought is behind that.

MS. MACIAS: Are you referring to the comment that we received?

MR. KOEHLER: Yes. And then I believe you stuck it in your -- am I correct?

MS. MACIAS: This is the final language for that section. Okay, you're referring to -- okay, this is the final language for the advanced vehicle technologies that was --

MR. KOEHLER: I guess could you give me an example of why a California taxpayer would want to fund something outside of California.

MS. MACIAS: I don't think that the current language is -- it's saying that we will fund projects outside of California. But it is also including vehicles and components that help meet the program goals.

So, we're not saying that we're excluding projects outside of California, and

we're not saying one way or anther that we're going to fund.

MR. KOEHLER: It just opens the door to do that. Okay.

MR. SMITH: Neil, if I may --

MR. KOEHLER: Tom.

MR. SMITH: I'm sorry, Tom. If I may extend.

MR. KOEHLER: Yeah.

MR. SMITH: In other programs at the Commission it's not uncommon for us to participate in projects that are located outside of the state. We have an obligation to demonstrate why those projects are important to California.

But if there is a compelling reason why the Energy Commission should participate in a project that could bring economic or environmental benefits to California, what this language does is it gives the Energy Commission that discretion to consider those projects and perhaps act on them.

MR. KOEHLER: Right. Okay. That makes sense. I was just curious to know what the thought was there.

And then I would like some -- I guess I was looking for some clarification on the whole

mandate issue and the thinking, how it relates to the federal RFS. And interplay between the federal RFS and this program.

And so I don't know if anybody here wants to take that on, whether you do or --

MS. MACIAS: I'll pass it to you, Mike.

(Laughter.)

PRESIDING MEMBER BOYD: Up for delegation.

MR. SMITH: That's great. Central to the notion here of compliance is identifying those entities that are obligated to comply. So to the extent that the federal RFS identifies entities that must comply with the RFS, those would be the entities that we would look at carefully if considering a project in which they may or may not be involved, and for which the activity for which they're applying for funding is to meet the RFS.

MR. KOEHLER: So, under the RF --

MR. SMITH: Or that would contribute to helping them meet the RFS.

MR. KOEHLER: Right. So, under the RFS the entities that are required are the refiners. They're the ones that are the obligated party.

MR. SMITH: Yeah, I believe so.

MR. KOEHLER: And so I guess I'd like to -- so the RFS has these very grandiose goals of getting to very low carbon fuels, noncorn fuels. And so my question is -- but nobody quite knows when and how we're going to get there. So my question is is this program going to help us get there, or is it going to say no, there's an RFS out there, so we're not going to participate in either speeding up or helping that program.

MR. SMITH: Well, I think there's other ways of helping our country, in this case the State of California, to expand the use of alternative fuels. But we're not -- the law's pretty explicit in its prohibition toward providing funding for activities or projects that are otherwise required by state, federal or local rules or regulations or laws.

Funding, providing funding to Chevron, for example, or a refiner to help meet the RFS to buy credits that they are unable to produce -- produce and blend the fuel, themselves, is certainly something we would not do.

That's not the only avenue available to the Energy Commission or other state agencies to help this state and the other states --

MR. KOEHLER: Right.

MR. SMITH: -- expand the use of alternative fuels.

MR. KOEHLER: Okay, so let me use another example that's not self-serving.

(Laughter.)

MR. KOEHLER: Let's just say Bluefire's project down in wherever they're doing it. And so it's a individual company that's not -- it's not on the hook for the RFS, but is selling into that market. And doing some very great advanced pilot work.

So would a project like that be eligible for 118 funding under this language?

MR. SMITH: To the extent that Bluefire, and I'm not aware that they are, but to the extent that Bluefire is not obligated to comply with any state, federal, local rule or mandate regarding alternative renewable fuels, there would be avenues that the Energy Commission could consider to provide funding to them to support their operations.

MR. KOEHLER: Under this language?

MR. SMITH: Yes.

MR. KOEHLER: Okay. All right. Just

wanted to make sure.

PRESIDING MEMBER BOYD: For the audience's benefit, Bluefire is a cellulosic ethanol facility. It's one of the USDOE biorefinery grantees who, by the way, turned down a CEC grant, not wanting to be encumbered by the State of California's rules and regulations.

In any event, it's a good example to use for this dialogue, but I wanted everybody to understand what it is.

MR. KOEHLER: Yeah.

PRESIDING MEMBER BOYD: It's being constructed to use greenwaste at a landfill in southern California.

MR. KOEHLER: So to the extent that -- and I just use that as an example -- so there's lots of companies out there that are not refiners that are doing the R&D on this advanced biofuel work, which will be selling into the market that is being created by the RFS.

So I think it's important that we don't, you know, we want to keep those options open. It sounds like they are. Okay.

MR. SMITH: Yes, that's correct.

MR. KOEHLER: Okay, thank you.

MS. MACIAS: We have a question on WebEx. Go ahead, Gina.

MS. GRAY: Yes, thank you. Can you hear me?

MS. MACIAS: Yes.

MS. GRAY: Thank you. Good morning, Commissioners and Staff. I think this morning I still have a couple of clarifications and maybe a couple of questions. And I'll follow on from Tom's theme here, which was in the section dealing with funding restrictions.

PRESIDING MEMBER BOYD: Gina, excuse me for interrupting you, but a lot of people don't know who Gina is, --

MS. GRAY: Oh, I apologize, --

PRESIDING MEMBER BOYD: -- so if --

MS. GRAY: Gina Gray with Western States Petroleum Association.

PRESIDING MEMBER BOYD: Thank you.

MS. GRAY: The funding restriction section, and I guess this will probably appear to be self-serving, to use Tom's language, but I guess we're still curious about a couple of things.

One is the addition obviously of the

section talking about to the extent that a project exceeds what is required for compliance. Can anyone provide sort of an example of what that might mean in, for example, the low carbon fuel standard realm?

What it means that, you know, if, in fact, you've already achieved 10 percent reduction early, and wanted to apply for funding, that that might be a possibility or not?

And leave to the side for the moment that I'm a petroleum industry person, and just say someone who's perhaps not an obligated party.

MS. MACIAS: Do we have -- I would say that that was a good example of if they are exceeding the low carbon fuel standard then they would be eligible for funding.

MR. SMITH: Let me just add a clarification to that, expand on that. They certainly, entities certainly could be considered for funding, but we have to keep in mind also a couple of things.

Number one, we don't know the details of the low carbon fuel standard yet. Number two, it's very likely that entities that are obligated to comply with the low carbon fuel standard and

that exceed the standard certainly will have the ability to use those exceedances, in this case a positive exceedance, as credits in the market.

So I think we have to be very careful in that particular regard. But, again, Gina, a lot will be revealed when we know more details about the ARB's proposals.

MS. GRAY: Okay, fair enough. And I suppose, getting back to the theme in there that basically if you -- well, let me pose it this way. Is there language in statute, and I should know this, but I only read it about a week ago, and I've forgotten -- is there language in the statute that specifically talks about obligated parties? Or is it just again the language talking about the project not being eligible for funding if it's mandated, and you changed that wording to use for compliance.

And I guess what I'm getting at here is if, in fact, there is no specific reference to obligated parties in statute is that something that the Commission has determined they would like to sort of differentiate in this process by saying that not only are you restricted if your project is mandated or used for compliance, but if you're

an obligated party, also are restricted.

MS. MACIAS: Jared, do you want to take this one?

MR. BABULA: This is Jared Babula, Staff Counsel. If you look at the AB-118, the section C does say for purposes of both of the programs, meaning the ARB's portion and the CEC's portion, eligible projects -- so it's targeted to projects -- do not include those required to be undertaken pursuant to state or federal law or district rules or regulations.

So it's the project that's the triggering event, not necessarily the entity.

MS. GRAY: And I guess this gets back to one of the written comments that WSPA made earlier, which was just our confusion over if, in fact, it's a project and you're saying that obviously, you know, if it's being used for compliance with local, state, federal, et cetera, regs, et cetera, et cetera, that you cannot apply for funding.

And I guess in our mind we're still unsure of how the Commission will be able to sit there and with all the applications coming in, be able to determine that a project that could be a

renewable fuel project or some other kind of project would not be generated because of, in fact, LCFS requirements or other requirements.

So still confused on our part as to how that determination is actually going to be made. Because, in fact, I think our sense is that whether it's our industry doing innovative things or other industries doing innovative things, that innovation has been spurred by and large by federal, state, local et cetera requirements.

MS. MACIAS: When we evaluate projects we're going to be looking at the entity that is required to comply. And anything above and beyond, as we've explained, could be eligible for funding.

So, with the project versus entity, we will be looking at the point of regulation. And then anything above and beyond that point of regulation that the entity pursues could be eligible for funding.

MS. GRAY: Okay, well, I appreciate the restatement. I guess we'll just have to continue to raise that as an issue.

One other clarification. The advanced vehicle technology section. Now, just trying to

recall, is this under the same funding restrictions? I guess it is, but it's a separate section.

MS. MACIAS: Do you mean the -- what same funding -- the entire program would be under the same funding restriction?

MS. GRAY: Correct. So in other words if you have an advanced vehicle technology project, that would be under the same funding restrictions?

MS. MACIAS: Correct.

MS. GRAY: Thank you. I think that's all for now. Thank you very much.

MS. MACIAS: Thank you.

MR. RATHKE: Hi. Justin Rathke from Capstone Turbine Corporation in Chatsworth, California.

I have a question related to the last question about funding eligibility. We're one of the groups that's thinking of doing an advanced vehicle technology project for this program. And, you know, we're kind of grappling with this overlap of our -- you know, we're basically developing a gas turbine engine for heavy-duty vehicles.

And there's an EPA standard for diesel emissions coming out, there's one now and then one in 2010.

Our engine certainly meets those requirements of the standard, the EPA standard, and exceeds them. But in addition to the emissions benefit, which is what the EPA standard seeks to limit, there are other benefits in terms of fuel flexibility and a hybrid design for the engine. You know, economic benefit to California. All things that are mentioned by the statute.

How will those sort of additional benefits of a project be weighed against one area in which there's gains that may coincide with a standard, in this case EPA 2010 standard?

And in fact, that one -- and another question. Since it's coming in 2010 how does that affect this solicitation?

MS. MACIAS: Well, this regulations text is actually used to prevent us from funding projects that are required by law. So, when it comes to evaluating a particular project, the investment plan and later the solicitations, we'll be better to give the details on those evaluations.

But for the purposes of regulatory language, this is just meant to prevent us from funding projects that are already required.

So, it's more of a screening than it is telling exactly what kind of projects will be funded.

MR. RATHKE: Um-hum.

MS. MACIAS: That information will be shared in the investment plan, and later in the solicitations.

MR. RATHKE: Um-hum. Just for my edification, could you give an example of a project that would be -- well, I guess used to comply is probably a better use of language -- with say, the low carbon fuel standard, so I can use that as a reference?

MS. MACIAS: I'm turning to Mike.

MR. SMITH: Well, --

PRESIDING MEMBER BOYD: O great wizard.

MR. SMITH: Well, I guess at this point I'm going to turn to ARB for a little guidance, because until we know exactly what the low carbon fuel standard is going to require, we're really not, we're sort of at a disadvantage to answer that question.

PRESIDING MEMBER BOYD: I mean it's an interesting question because it's a technology question. I mean you're going to be theoretically providing a new technology application for a vehicle that happens to perform better than the diesel standard requirement.

But this is not a diesel, this is a turbine. So, it raises, to me, a very interesting question about where you draw the lines around the criteria that's being proposed. And I don't have a ready answer. But I don't think we would want to build any barriers against such technologies.

I see the ARB champing at the bit. Maybe they can --

MS. MACIAS: Andy Panson from the ARB has a comment.

MR. PANSON: Yeah. Jim, I agree with what you're saying. Maybe we can talk about your example, you know, we would not fund the manufacturer, you know, of diesel engines to meet the 2010 diesel standards that you're referring to. That's a clear requirement.

You're bringing up a kind of interesting case. If you're saying you have a technology that goes beyond that standard that might have other --

that has other benefits, fuel economy benefits, you know, something that goes above and beyond, that is something that is eligible for funding kind of in the abstract.

But how you draw the line and, you know, whether you could segregate, if there's any part of that that's really just being done to get you to the 2010 standard, which really wouldn't be on the table.

But if you're looking at something that goes above and beyond, like maybe another example would be say if someone has a heavy-duty hybrid diesel engine, it's already meeting the 2007 standards, it's already meeting the 2010 standard. But you're actually getting some kind of -- some additional greenhouse gas benefit by the fact that it's a more efficient engine, you're using less fuel.

That is beyond what's required by the EPA and California engine standards. And so there is an increment there that's surplus and fundable.

Does that help?

MR. RATHKE: Yeah, I recognize it's a difficult, you know, way to do this formally without, you know, -- but it's good to see that

there's recognition that there is some complexity there.

MR. PANSON: Yeah, I think some of these questions are difficult to answer in the abstract. But when you're putting in a funding request or a solicitation is going out, there's actually a lot more detail.

But the regulation has to be written at this high level. And it answers a lot of questions. But it may not answer every single question. But when the agencies are developing their solicitations, you know, both agencies will word them in such a way that, you know, what they're asking for ideas for are going to be things that clearly are going above and beyond what's required.

So, I think a lot of those details, when we get to the solicitation point, nothing will be -- hopefully it won't be unclear. We need people to be very clear about what they're applying for and what's eligible and what's not.

MR. SMITH: I would like to ask Andy, as long as you're at the table, I'd like to ask a clarifying question.

What, in the concept that you're

describing where you get a gas turbine vehicle, what fuel do you envision firing the turbine?

MR. RATHKE: Well, one of the benefits is that it is fuel flexible. So, you know, given the current infrastructure, you know, diesel -- it can run on diesel. Natural gas would be preferable, you know, from an emissions efficiency standpoint. It's a gas turbine, so really it's, you know, -- Capstone has built its business on, you know, powering its microturbines with natural gas. But also biodiesel and, you know, methane biogas and, you know, we're looking ahead to hydrogen one day.

So, really thinking something very fuel flexible. Given the realities of, you know, where trucks are able to refuel and what they're able to put in their systems, you know, diesel might be an option for some users.

But really we would be designing the engine to be able to take all of those fuels that I mentioned.

PRESIDING MEMBER BOYD: Well, inherent in a gas turbine is the ability to burn a whole range of fuels.

MR. RATHKE: Right.

MR. SMITH: Right, so how would ARB, and I don't mean to put you on the spot, but how would you envision a technology such as this that could use a variety of fuels meeting the 2010 standards?

MR. PANSON: And actually, I want to step back to my answer when I said we wouldn't be funding a diesel engine that just met the 2010 standard. We also wouldn't be funding a natural gas or an alt fuel engine that just meets the standard.

I didn't want to make it seem like diesel was out and other fuels were in, because it's not a fuel-based standard. It's an emission limit. So things that just meet the standard are not fundable where there's an increment that goes beyond.

And, you know, you're talking about something that really is, you know, more a prototype or an R&D or a -- you're not talking about funding, you know, production of engines that are just going to be rolling off the line to be sold in compliance with the standard.

So I think, you know, where you're talking about advanced technology demonstration projects where they're not being used directly to

comply with the standard. That's also kind of an element that comes into the evaluation, as well.

MR. SMITH: Another -- sorry to keep you up there so long -- but you raise an interesting topic, and it has a number of facets to it.

But one of the -- one aspect of our program, actually both ours and the Air Resources Board program under AB-118, is we have anti-backsliding provisions.

And as ARB is developing and promulgating those regulations they establish sort of a threshold against which you cannot do any worse in terms of criteria pollutant emission, toxic air contaminants and et cetera.

It also, as ARB envisions the anti-backsliding, it sets up a greenhouse gas backstop, as well. So it pretty much follows a trajectory that the low carbon fuel standard will take, whatever that trajectory is, when the rule is proposed.

The gas turbine application in this regard doesn't do any worse that the anti-backsliding guidelines established by the ARB. But yet you can demonstrate that there are positive benefits, additional greenhouse gas

reductions say beyond the low carbon fuel standard even if the criteria pollutant of this engine simply meets the 2010.

You made the comment earlier it actually exceeds, but just for argument sake, even if it meet the 2010 it doesn't backslide, so it meets the anti-backsliding regulation. But if the proposal can -- if you can come in with a proposal that clearly shows additional benefits, particularly greenhouse gas reduction benefits, that's something that the Energy Commission may very well consider.

Not speaking for the Commissioners, but I just wanted to add that yet another facet to answering your question.

PRESIDING MEMBER BOYD: I think without stating any approval or disapproval of what sounds like potentially an application some day, I think the intent of the law, and I think the intent of our agencies is to stimulate technological development that will bring a host of attributes to the table.

And I think that's what you're tentatively talking about, and I think the organizations would certainly entertain that kind

of an application, presuming, you know, you make the case of bringing a whole host of other attributes to the table. Not just you, anybody. But you're the case study at the moment.

MR. RATHKE: Thank you very much.

PRESIDING MEMBER BOYD: Thank you.

MS. MACIAS: Do we have one more question?

DR. YEH: This is Sonia Yeh from UC Davis. I want to ask a followup question to Gina, the question that Gina raised earlier.

That, for example, if a refiner want to fund a project that will produce lower carbon fuel, for example. And, as we know, there are many ways to meet the low carbon fuel standard. You can buy lots of first generation biofuel, or you can improve the efficiency of refinery. You know, there are many ways to meet the low carbon fuel standard.

But, for example, if a refiner want to fund or co-fund a project that will support second or third generation biofuel development, at the same time there is no certainty that would guarantee the project will be successful. But it has a potential to produce second and third

generation biofuel at a more cost effective manner in this case.

So, there's no -- first, there's risk involved with the investment. There's no guarantee that you will successfully be used for compliance. At the same time it has a lot of innovation. It would provide technology innovation and potentially benefits in terms of cost and spill over to the whole industry potentially.

Under that condition would that project be eligible for funding under AB-118?

MS. MACIAS: Potentially it could be. We keep getting back to the investment plan, and that's really going to have -- it's going to incorporate the regulatory language. Also the sustainability that Jim will talk about in just a minute.

But everything is kind of to be decided right now. And it sounds like if there is a benefit outside of the requirement, then it could possibly be eligible for funding.

MR. SMITH: Well, your question, just such as the gentleman before you, your question adds yet another aspect, sort of a temporal aspect

to the issue of compliance.

In this case you're suggesting that a project undertaken by an entity that is otherwise, in another regulatory sense, is required to meet a, comply with a regulation or a law.

But that entity is also undertaking research and development for a better fuel, more cost effective fuel, or a fuel that has better environmental and greenhouse gas attributes, second or third generation.

One of the issues that the Energy Commission and the Commissioners will have to consider as we move into finalizing our investment plan, and certainly as we move into the solicitations, is that very aspect. At what point is a project far enough removed from the compliance, the entity's obligation to comply in a regulatory world. And at what point is that research project far enough distanced from that obligation to comply.

Such that it could be argued that the research will benefit a future market or benefit activities that aren't necessarily subject to that compliance, that entity's obligation to comply.

And that's something that we will have

to consider as we develop, finalizing this plan and develop these actual solicitations.

But it's a very good question and it's one that we're not -- we certainly recognize and will be considering as we move forward in implementation.

MS. MACIAS: If there are no other questions, we can move on to the sustainability goals.

(Pause.)

MR. McKINNEY: Good morning. I'm Jim McKinney here with the Energy Commission Staff, the team leader on our effort to develop sustainability goals.

And what I want to do in this presentation is first give my apologies to people like Steve and Sonia who've heard part of this presentation four times now, so I appreciate your patience here. But we are getting to an important juncture today.

So I'm going to just review briefly our legal obligation, the process we've used to get to the goals, what the proposed goals are.

And then I want to give a bit of a preview at a staffed working draft proposal for a

possible integrated approach to pulling all the pieces together. And that was referenced to a paper that we released, the sustainability working group, last week in an attempt to provide a lot of stakeholders with the answer to the question, how does this all fit together; how do all the different pieces of our sustainability program come together.

So the goal for today is to get good public comment input on the goals, themselves. But we did want to give people a preview of what might be coming down the road.

So the Legislature asked to do something pretty important with this funding program, and that is to set sustainability goals. They didn't give us a lot of direction, though. And it's kind of fun to parse through this particular paragraph because there's some directions and mandates in here that don't really kind of queue up nicely.

So, we're supposed to establish these goals to insure that alternative and renewable fuel and vehicle projects on a full fuel cycle basis will not adversely impact the state's natural resources, especially state and federal lands.

And there's kind of an inherent tension there because a full fuel cycle analysis really, if you respect the methodology and the theory, obligates us to look far and wide at every aspect of the fuel pathway when we're thinking about sustainability.

But there's many references in the statute to protecting the state's natural resources in particular. So that's one thing that we've been working through to try to pull that together.

The statute also gives us a fair amount of guidance on what are called preferences to projects maximizing various environmental criteria. These are consistency with climate change policy and the LCFS from the Air Resources Board; ability to reduce criteria pollutants; decrease water pollutants; no adverse effect to the state's natural resources.

And perhaps most importantly, a project's ability to reduce GHG emissions by at least 10 percent from the petroleum baseline on a full fuel cycle basis or lifecycle basis.

And what we're going to propose later on in our program is to firm these up, and actually

have them become thresholds for project eligibility under the sustainability aspect.

So, what has Energy Commission Staff done to arrive at the four proposed goals. Well, first we sought out the experts and consulted with them on both sustainability and alternative fuels.

And I'd just like to recognize Dan Kammen's team at UC Berkeley and especially Sabrina Spatari for feeding us some of the key literature, technical literature, on sustainability. And then later getting to work with Professor Kaffka and Sonia Yeh and others at UC Davis.

We've had numerous discussions with our agency partners at the Air Board, California Department of Food and Agriculture, Forestry and Fire, and USEPA Region IX and EPA headquarters. And, again, we've learned a great deal from them.

And I probably learned the most from talking with stakeholders and developers. We've just had a series of meetings, small meetings, large meetings, where we can really learn about, you know, what are the innovative folks thinking about in terms of proposing projects for AB-118 funding. And it's just fascinating.

And it's a great way to test kind of our initial thinking and assumptions on what a sustainability program might be. So I really appreciate stakeholders from all through the continuum who have come and shared their ideas with us.

As I said, we've looked at the literature. We have our emerging partnerships with Davis. We convened the sustainability working group, which I think will become an increasingly important forum, again for us as staff, to put out ideas, test ideas, and really see, okay, how do the different pieces of this sustainability framework proposal, how do they match up with what people are proposing. And that will be a great way to get a good, open dialogue and fine tune it.

We've also released a series of kind of whitepapers and concept proposals. And this is just a chronology. So we really started back in the spring with our initial meetings with the UC teams and the big conference that was sponsored just before Memorial Day -- I guess it was after Memorial Day. And you can see for yourself, this is kind of our march to where we are today on

September 9.

So the statute, as I said, you know, requires us to develop the sustainability goals. And the goals will just be one piece of the program. And our intention is for the regulatory phase of what we're doing to have broad and flexible goals. Because these have to apply to the next seven and eight years of continuing investment plans and solicitations.

So our state of knowledge is going to evolve; the technologies will evolve; the state of the science will evolve; and our capacity to use sophisticated LCA models like GREET will evolve, as well.

So we need regulations that can fix and firm targets and objectives, but that will also have enough flexibility so we can continually adapt to the changing world.

The investment plan, I don't know exactly where all the pieces of this are going to fit. But, some portion of it will likely fit in the investment plan.

And then in the solicitation, that's where we'll probably see the most specific level of detail for what exactly do we mean by

sustainability characteristic, what levels of data, what kinds of data and what types of projects that we're looking for.

So our strategic approach here for sustainability has really been to focus on the bioenergy crops and the bioenergy fuels and the biofuels, because that's where the action is. I mean, you know, the old bank robbers went to the banks because that's where the money was. This is where the action is now, indirect land use effects, natural resource effects, pollution. So that's why we're focusing so heavily on this now.

What folks decide to do in the investment plan may or may not have a lot to do with biofuels. But that's really where the initial focus is in terms of potential for adverse effect.

We know we have to address all the fuel pathways. And for me, personally, I think electric drive is probably emerging as the next one that we're going to tackle on the sustainability basis. And for those of you involved with assessing the environmental impacts of different power generation technologies, there's a lot of work. There's a lot of mischief

and damage that can be done, even when you're trying to promote renewables.

We focused on California because, one, that's what the law asked us to do, and this is a state program. But also one of our key assumptions is that sustainability means going beyond the current measure of the law. And to do that we're going to be looking to develop new ideas and concepts and our key partners and stakeholders are here in the state.

We're also tracking what's going on at the federal level with the RFS and sustainability in the work that USEPA and the other federal agencies are doing. And we're also tracking and really trying to get up to speed and understand what's going on in the international arena with the various certification programs, both out of Europe and Asia.

So I'm not quite as prepared as Aleecia. She had this nice thing, you know, stakeholder comments, staff response. So I'm just going to ad lib this part.

But a lot of people said, what exactly do you mean, what do you want to measure with sustainability. So here's an attempt to lay out

kind of the classic, you know, elements or factors we think about in lifecycle analysis for environmental effects, and also the specific things that the law is talking about.

So, the classic ones, GHG emissions. And that's really, that's the bottomline for this program. This is in the statute, criterion toxic emissions, water use, wastewater. Something like state and federal lands, that's really a direct response to what's in the statute.

We have our environmental ecological factors. For economic factors, you know, there's both economic development benefits. And, again, that's kind of one of the general criteria we're thinking about with this.

But we also have to be mindful of cost to developers for certification and data compilation and data submittal to the Energy Commission. That's a nontrivial factor.

And then for social factors we have the public health effects and environmental justice, and potential effects -- disproportionate effects to disadvantaged populations.

And, again, when we talk about the full fuel cycle analysis we're talking about feedstock

production, distribution and end use. So it's quite a comprehensive look.

So some of the key staff assumptions that we developed that led up to the goals. One, sustainability does not mean zero impact; it means a lower impact.

And in an earlier presentation in one of the working group meetings, to me that kind of posed the question, you know, if sustainability means you got be something better, and it's better than what.

What exactly are we comparing our potential sustainability requirements to. And there's no such thing as a zero impact energy source. One just doesn't -- it ain't out there.

So we're really trying to specify what exactly are we comparing these things to.

And as I alluded earlier, sustainability, it's really a global-level issue. It's a systems level issue. So focusing purely on project effects or state natural resources is problematic.

And as I said, the one highlighted here in green, to us sustainability really means going beyond the status quo. And the statue quo, it's

not easy, complying with the state's environmental laws is not an easy thing to do. But that's what we're going to expect of applicants for AB-118.

And lastly, and this is a sticky wicket if you think about it a lot, but infrastructure cannot be separated from the fuel pathway. And the classic example there is, you know, a proposal for E-85 fueling station, you know, the available fuel right now is corn-based ethanol.

Depending on how the indirect land use numbers play out on GHGs, that fuel may or may not be below the petroleum baseline. May not be below 10 percent. Yet the infrastructure is something that a lot of people think is needed. So there's kind of a balancing that will have to happen there.

So, some additional staff goals. I talked about flexibility. And, again, this balance. We want to promote sustainability being mindful of the economic effects on the emerging technologies and these emerging companies.

Some fuels are going to have a long lead time. And lastly, we just need to continue learning about indirect land use effects, and then food-versus-fuel issues.

And the last line -- to say compliment with an "i". So, you know, our salutations to ARB, but I was advised to correct this to complement, and that we want to partner with ARB and have our programs be compatible. But I still applaud what they're doing.

(Laughter.)

MR. McKINNEY: Some additional goals. There clearly are some benchmark-caliber systems out there in the international arena. And it's incumbent on us to identify them, learn about them, and see is this something that the state may or may not want to back in terms of getting sustainability fuels into California's market.

We're one of the hubs in a global market for these emerging fuels. So we really need to be smart and educate ourselves and work with our international partners.

And to that end there's an opportunity to leverage our market size and our environmental ethic, both as illustrated with this Administration and the Legislature, to drive international standards towards systems of certified sustainable production.

So that's why we got to where we are.

Here is where we are. And I hope you'll bear with me, I hate reading long slides, but this is a workshop on the regulatory language. And every word, as our staff counsel always reminds us, every word counts, so the language is important.

So, goal number one relates to greenhouse gas emission reductions. Quote:

"The firs sustainability goal shall be he substantial reduction of GHG emissions to help meet California's 2020 and 2050 targets, as defined in section 38550 of the Health and Safety Code and Governor's executive order."

"To that end the Energy Commission, or its assigned policy committee, shall identify and support fuel and technology options with the best potential for meaningful reductions in transportation-related greenhouse gas emissions."

Goal number two has to do with natural resource protection and environmental performance. Quote:

"The second sustainability goal shall be to protect the environment, including all natural resources, from the environmental effects of alternative and renewable fuel development, and promote the superior environmental performance of

alternative and renewable fuel infrastructure and vehicle technologies."

"Towards that end, we shall recognize and support production of fuels that are more environmentally efficient and less environmentally damaging in current standard practices for the production of petroleum fuels, production of basic agricultural commodities and extraction of natural resources when measured on a lifecycle basis."

Those three baselines are important. Again, what sustainability, in my mind, means doing something better than the status quo. The status quo are these series of standard practices, and these are the three areas where fuels come from at this point.

Some of these baselines are well defined, some are not. There's a lot of work to do still on these. But this is what we're comparing, you know, something that's more sustainable to.

And then part B of this goal: "Recognize and support production practices for alternative and renewable fuels, the respective physical carrying capacity limits of natural systems at the local, regional and global scale."

Three is certification of sustainability practices. The goal is to support certified sustainable production of alternative fuels. To that end, identify and promote practices and programs that support certified sustainability production of alternative and renewable fuels to provide California markets with low GHG emission fuels while providing economic benefits to the areas in which production occurs.

Consult with the ARB and stakeholders through the advisory committee to identify internationally recognized sustainability certification programs.

Goal four: Avoid unanticipated consequences. The fourth goal shall be to minimize or avoid the risk of alternative and renewable fuel production causing unanticipated consequences. The Commission or its assigned policy committee shall use adaptive management, continuous research, use of the full fuel cycle modeling tools, and establishment of a database for post-project environmental and economic monitoring for projects funded out of this program to insure that unanticipated consequences to the environment, food supplies and social welfare will

not occur.

We have four definitions that are included in the draft regulatory language. So, state natural resources, forest lands, range lands, waters and watershed, biodiversity resources for fish, wildlife and flora and their habitats, coastal lands and waters, minerals and prime agricultural lands.

State and federal lands include surface and subsurface water bottoms and tidal zones, lands owned wholly or in part by any branch or division of the state or federal government. That covers a lot of real estate actually.

Environmental performance denotes the relative environmental efficiency and levels of environmental impacts from industrial facilities, agricultural operations or natural resource extraction activities.

Facilities with high levels of environmental performance use fewer natural resource and energy inputs per unit of fuel output and have lower environmental impacts than low environmental performing facilities.

And last, carrying capacity denotes the ability of an air basin, watershed, ecosystem or

landscape to withstand resource extraction or absorb pollution loading until its basic functions are impaired.

So I'll stop reading slides. I know it's dry, but again, the words count there, so we really are looking for your input and comment on the regulatory, the four proposed regulatory goals.

And I want to move quickly now just through a preview of how this program might all tie together.

So, again, staff's effort here is just to provide a preview of how this all might fit together over the next six months as we work towards our April goal for getting this program up and running.

So, first off, as I've alluded before, we're going to set high standards for sustainability. In our view, the goal here is not to fund the status quo. It's really to identify the best and the brightest, the gold standard projects, those that are really pushing innovation and have something that can be replicated and shared within the state or the national level.

So, we used words like exemplary in

their sustainability and their environmental performance.

So the way this plan might fit together is that there are four possible pieces. And I'm going to use a lot of conditional language here because this is really a work in progress.

I personally don't know where every piece of this is going to fit into every piece of our formal program, but I think my job, as staff, is to help get the ideas going, make sure we get the ideas right, and we'll figure out how all the pieces come together.

So the investment plan is going to set the funding priorities for the projects that meet program goals. And there's a possibility that there will be some discrete funding categories for areas of sustainability research.

The second part is to set up some what we're calling environmental performance measures. And the idea here is to have something that will serve as screening criteria for projects. We're going to have a bright light and there's got to be some good work demonstrated that a project is even eligible to compete for funding.

And this is in response to some

stakeholder comments about, you know, let's use sustainability as a screening tool. So this is one way to get at that.

And for those of you that have reviewed the draft, working draft staff paper, we propose building those minimum environmental performance measures on those preference criteria in the statute.

Third will be the four sustainability goals that we're talking about today. And the fourth element are the sustainability characteristics that we first proposed in the July 8 concept paper. They've evolved somewhat.

And the goals and characteristics really work together. And in all likelihood they will evolve into some type of evaluation criteria or indicators or what.

And we're really thinking of this not as a screening system; it's not a second-level screening system; it's not a punitive system. It's a scoring system. So a project meets a threshold, and then you see how many sustainability points you can get.

And in putting this together, again we are trying to respond to stakeholder comments of,

you know, how does it look from my perspective. You know, Commission Staff has talked a lot about what we need to do from a statutory, as legal perspective. But we try to put ourselves in the applicant's shoes. So, how do I think through how my project fits into the sustainability element of the AB-118 program. So this is one possible approach.

So, again, so goal number one, you know, meet the 2020, 2050 targets. And I think it's going to be 29 percent and 80 percent below the 1990 baseline. Tough, tough goals.

So, for the characteristics, the first one, so minimum 10 percent reduction in GHG emissions from the petroleum baseline for direct and indirect land use effects, whatever those numbers may turn out to be.

And then second is for us to recognize the potential of bridging technologies or projects with long incubation periods. And that's intended to kind of deal with this tension about, you know, indirect land use, greenhouse gas emission numbers. Some projects may be low performers here in 2008, 2009. They may be very high performers down the road. So this is a way to help recognize

those projects.

The second goal on protecting the environment and natural resources and promoting superior environmental performance. This is really the longest list of what we're calling characteristics.

And, again, the idea here is, you know, projects that exhibit or contain these attributes or characteristics might have the best chance of meeting sustainability goals and, ergo, be the most competitive for a funding grant.

So, maximizing the wastestream of feedstocks, efficient use of natural resources, less environmental damage, again, in those three baselines. Test and demonstration projects for cultivation of purpose-grown energy crops with best management plans. The idea there is to work either with Steve Kaffka's team at UC Davis, or other, you know, equally credible institutions to develop best management plans for purpose-grown energy crops.

Use recognized certification and reporting systems. Try to give credit to biofuel crops and feedstocks that are uniquely suitable to our climate constraints, resource constraints,

water constraints, soil constraints here in California.

Use extant agricultural lands. So, again, the idea there is, you know, we want to see projects that are within the existing agricultural footprint and not going beyond.

Renewable energy, cogeneration use in production is a good thing, as are the creation of co-benefits to natural resources.

For goal number three, the characteristics that support certified sustainable production of alt fuels. So, again, recognize best available, most sustainability production methods and practices. And conceptually that's similar to best available control technology. If there's a technology that's proven it's economically viable, that advances environmental performance, that's the benchmark. That's the same idea here.

And as I said, this number 12 is kind of a repeat of an earlier one. So recognize, internationally recognize certification and reporting systems.

And the fourth goal we've added a characteristic to minimize risk of unanticipated

consequences. So recognize projects that avoid disproportionate impacts to disadvantaged communities and that create economic benefits.

And I think that's the end of the presentation. So, with that, I don't know, Commissioners, if you want to lead the public discussion or if you'd like me to, but that concludes the formal presentation.

PRESIDING MEMBER BOYD: Well, thank you, Jim. And I think we'll just call upon the public for any questions you may have of the presentation. We do have one request from UC Davis to make a presentation, and we'll hold that until we get clarifying questions from the audience. Anybody?

MR. SCHUPARRA: Kurt Schuparra with California Strategies. I have one question for Jim in regard to the slide presentation.

On this sustainability characteristics, the slide at the bottom of page 12, and actually you allude to it in the slide above that, too.

You say that this is not intended as a scoring system and not a screening or punitive system. Well, I mean I'm just trying to figure out if it's a scoring system, assuming it's like

Olympic competition and not gold, I'm assuming a higher score is better. And by default a lower score while not maybe, strictly speaking, punitive, is not what I would want to have if I was being evaluated.

So, could you just elaborate a little bit on, you know, this scoring system and how it would work in the process as you envision it?

MR. McKINNEY: A couple of points. That's a good question. This is very much a work in progress, so we'll have this discussion over the next few months.

But the idea here is that, I mean there's a lot of great technology; there's a lot of really interesting work being done in California. Some are going to be more sustainable than others. And we're not trying to disparage something that may not meet our sustainability standards, but still make just excellent contributions to the marketplace for alternative fuels and alternative vehicle technologies.

Let me say, too, just, you know, as a dad, you know, --

(Laughter.)

MR. McKINNEY: -- if -- this is

reference to my son, five years old, you know, if he doesn't quite hit the mark, I don't say, oh, man, you really blew it. I say good job, we'll get there next time.

MR. SCHUPARRA: But in terms of all the factors that would be considered --

(Laughter.)

MR. SCHUPARRA: -- and I really appreciate that analogy, and very very effective rejoinder.

(Laughter.)

MR. SCHUPARRA: But, I mean, you know, in the pool of factors that will be considered for projects, this is one of them. And --

MR. McKINNEY: Personally I can say, as staff, this isn't a cakewalk. These are going to be tough.

MR. SCHUPARRA: Yeah, all right.

MR. McKINNEY: We're going to be testing people. And I think that's why we need to have this continuing dialogue. And I appreciate, you know, you've attended, I think, all of our working group meetings and had good comments.

MR. SCHUPARRA: You're such a compelling presenter, I just don't want to miss.

MR. McKINNEY: Thank you. But this is, I mean there's going to be a lot of fine tuning for this system. And, again, we've got to find that balance between identifying kind of the gold standard projects, but not suffocating everything because it has environmental impacts on one of these many attribute areas. So, thanks.

Let's see, I think we had somebody next on the WebEx. I'm sorry, excuse me. That was Noelle --

MS. CREMERS: Cremers, yes.

MR. McKINNEY: -- Cremers, okay.

MS. CREMERS: Noelle Cremers with the California Farm Bureau.

MR. McKINNEY: Great. You're up.

MS. CREMERS: And I have a few questions and some comments. And I don't know the process, if I should just skip the comments and just ask questions at this point.

But, my first question. In the draft regulation there's a statement that says, recognize and support production practices for alternatives and renewable fuels that respect the physical carrying capacity limits of natural systems at the local, regional and global scale.

Can you explain what you'll be looking for in terms of physical carrying capacity limits of natural systems?

MR. McKINNEY: Yeah, it's a very good question. The idea here is that there's a functionality to ecosystems, to air basins, to watersheds. And that functionality is, you know, is the system healthy enough to support kind of the life and the processes that were there originally.

So in an aquatic system, in a river, you're going to have a certain amount of environmental damage, and you're going to have a certain number of native species, you know, working to survive and reproduce and have, you know, sustainable populations of that particular species.

So if you load in too many nutrients, if you warm up the water too much, if your DO levels are too low, if you've got toxics in there, at some point that ecosystem collapses and you don't have the native fishery or the native species anymore.

So that's the idea is kind of this tipping point notion.

MS. CREMERS: So, I guess, I mean I understand it in the biological. It's just hard to see exactly how you'll be making decisions as to what projects to fund for alternative and renewable fuels.

MR. McKINNEY: Sure. I mean since you're with the Farm Bureau, I mean just for example, and I'm just going to make a hypothetical here. You know, if there's a certain biocrop that's proposed and it goes beyond the existing footprint and it dumps a lot of nutrients into a watershed or a water basin; and say that water body's already on the 303(d) list of impaired water bodies the USEPA puts out, that would not score very well in terms of sustainability. Because it's adding incremental damage to an already impaired ecosystem.

MS. CREMERS: Okay. And then my other question, there was a statement in the presentation about the use of existing ag lands, not wanting to go beyond what is used today.

And I just had a question about fallowed land. I mean we have areas of the state that are being fallowed because of the current water supply crisis. And if, in the future, we were able to

identify crops that could produce biofuels that were very low water users, that then we might want to plant on those fallowed ag lands.

Would those lose points because that land is currently being fallowed, and so it isn't classified as ag land?

MR. McKINNEY: That's a great question. And you'll see that there's a question mark on that sub-bullet. It's characteristic number 8. Good question, and we need to talk about that some more.

MS. CREMERS: Okay.

MR. McKINNEY: Mike, did you have a comment?

MR. SMITH: Jim, I'd like to expand on your response to her previous question. While the project that might create additional loading on an ecosystem as proposed, might score low, I think part of what we're trying to achieve in this program is establishing the means for the policies by which such projects can improve their environmental performance.

The product that that project might produce could be very important to California in meeting other objectives, greenhouse gas

objectives, et cetera.

To the extent that those projects can improve their environmental performance in other respects, and you mentioned the loading of streams, I think that would be an important objective for this program, is to find ways to improve those projects, and to find means to mitigate those impacts, improve the environmental footprint and allow those projects to move forward in a more environmentally safe and sustainable way.

I think we have to keep in mind that this is public money. And I think you mentioned that in one of your early slides. This is an incentive program using public dollars. And we should set a very high standard.

It doesn't preclude projects that otherwise might happen from being funded elseways and being built. But, for projects that want our financial support, I think we should endeavor, and the message we should be sending to stakeholders is we should endeavor to find those -- to set the bar high.

And I think in the long run that will help the industry that we're trying to foster.

So, anyway, just an added comment.

MR. McKINNEY: And, Noelle, I'd like to add, as well, with the example you gave about, you know, would a proposed project on fallowed ag lands be eligible. If, you know, you're talking about west side, you know, Westlands Water District, San Joaquin Valley, and it's something that might create, you know, what we're calling restoration co-benefits, if it might help with remediation or reducing the salt load, that would be something that we would be very interested in looking at.

MS. CREMERS: Okay. And then my last question. Will there -- do you foresee having some sort of comparative measurement against the California production versus production outside of California, either nationally or internationally?

I know historically California has set very very high environmental standards for production. And that it can drive production outside of the state into areas that we, as Californians, wouldn't like to see environmentally degraded, Yet we still consume those products.

And so I'm wondering if there will be a way to kind of provide points in the system to

say, look, you are doing these good things and we want to see it done well in California, instead of getting ethanol from Brazil, or some of those. Will there be ways to measure that benefit?

MR. McKINNEY: Let me try to rephrase your question. So I think you're saying that if, say, for example, we can help comply, say, with elements of the bioenergy action plan that encourage the state to have certain percentages of alternative fuels produced here in the state. Are you asking if that can be done in a less environmentally damaging way than say international feedstocks, that you would recommend that we take a good look at that?

MS. CREMERS: Right. I mean I know historically with California forest products industry, we've set incredibly high environmental standards for that industry. And so we've limited California production, but we haven't limited the consumption of wood in the state.

And so instead we're moving some of the grading practices that have been banned in California to other parts of the country and the world. And so I'm hoping that there would be a way to insure that that doesn't happen under this

system.

I know you've talked a lot about we want to make sure that we're above and beyond the baseline, the environmental baseline in California. But I think it's also important to look at if we don't have the projects here in California, what might the environmental impact be if it was built elsewhere.

MR. McKINNEY: So I think the technical word for what you're saying is externalization. We do not want to export our environmental damage so we can have clean fuels to meet our state program goals.

I'm speaking personally as staff, but I don't think that that's the intent of anybody associated with this program. And that's why we're having some of our goals and characteristics kind of stretch a broad umbrella that's really global in scale.

But there's a lot of issues that we need to get up to speed on technically to have informed recommendations from staff on those international programs.

MS. CREMERS: Okay, thank you very much.

MR. McKINNEY: Thank you.

MR. STEPHENS: Good morning. My name's Jeff Stephens; I'm with Propel Biofuels. Propel builds, owns and operates retail clean fueling points.

First of all I want to commend the Commission and the CEC Staff for all the work that's gone into developing these regulations. I think there's a great piece of work here, and I think it's going to move the renewable fuels industry forward.

That said, I think there are a few things I'd like to comment on. Some of the goals and the regulations.

One is initially on goal four to avoid unanticipated consequences, I think one of the concerns I have is that in trying to avoid unanticipated consequences there's a potential for over-compensating. And one of the areas where I could see a potential for over-compensating is in the lifecycle analysis.

As Jim McKinney has pointed out, the plan is to have indirect land use and direct land use effects in the lifecycle analysis. And as a scientist, I'm a little concerned about the level in the state of the science now, and right now in

the land use, especially in the indirect land use effects.

There's not a lot of data out there on what those land use effects are. And almost no data on how to mitigate those if there are land use effects. So that's just sort of a comment on the -- a cautionary comment on using data that's not scientifically ready to be used in that way.

So, I'm hoping that there will be a chance as those lifecycle analyses are developed, that there will be a chance to look at the datasets that are being used to develop those indirect land use effects.

A few other specific comments. One is to sort of extend the question that was brought up a little bit earlier, the comment on the extant agricultural lands and what those are.

In the September 4th draft there's some language that only historically -- that agricultural lands that are only historically used for tilled, irrigated agriculture are open to biofuels production.

While I know that for the most part tilled agricultural land is the major way that agriculture takes place in California, it seems

that that definition of using only tilled agricultural -- or tilled, irrigated agriculture sort of limits the ag base and excludes any dry land, land that has been used historically in dry land rather than tilled, irrigated land.

So, hopefully we can expand that and refine that definition so that it doesn't unduly restrict what land can be used.

MR. McKINNEY: And, Jeff, just if I can -- I just want to make sure I understand your point here. So you're saying that there are areas in California and the west where there have been, you know, dry farming practices or maybe pasture lands that would fall out of eligibility because of this definition of the extant footprint?

MR. STEPHENS: Yeah, that's correct.

MR. McKINNEY: Okay.

MR. STEPHENS: Yes. Right now it says it's only -- that it was only land that was historically used for tilled, irrigated agriculture. And that seems to be limiting in my --

MR. McKINNEY: Okay, thanks.

MR. STEPHENS: -- in my sense.

And the second is the exclusion of

conservation reserve program lands. And I'm from Washington State. And I understand a little bit about how the conservation reserve program has been used, at least in Washington, maybe mis-used to some extent.

But, if you look at the goals of the conservation reserve program, in some sense there's a lot of land, at least in Washington State, that was put into the conservation reserve program because it wasn't necessarily profitable at the economics of $3 or $3.25 per bushel of wheat.

But that land might not have real high conservation value. So the farmers would actually put land into the conservation reserve program because they couldn't make enough money on it in the current economic situation.

A lot of that land might be usable for producing renewable fuel feedstocks. And if those renewable fuel feedstocks were produced in a sustainable way with best management practices, that land that's in that conservation reserve program may actually have more value to the public as in producing biofuels, rather than having low conservation value.

So, rather than just completely negate the fact that you can't use conservation reserve plans, I think we ought to think about ways that some of those low-value conservation lands that are in the program might be used for biofuels production.

And then on the sustainability goal number three, recognizing best available and most sustainable production methods and practices. As a retailer of fuel, and from our experience in retailing renewable fuel in Washington State, I find it a little difficult to envision a storage and distribution infrastructure that is capable of managing a mix of renewable fuels, ones that are designated as best available and most sustainable and others that might not be quite as sustainable.

It's sort of like the idea of having an infrastructure for petroleum that designates crude oil, or diesel fuel that's produced from crude oil, pumped in California as having a higher value than crude oil that comes from, or diesel fuel that's made from crude oil from Venezuela.

The infrastructure is just not capable of segregating those or finding a way to designate which ones are more sustainable than the others.

So I think you have to think a little bit about how that's going to happen on a practical basis, and what the ramifications of designating a fuel as being made from best available and most sustainable. So that's something that I haven't been able to figure out how that's going to practically work.

And secondly, when you -- as you recognize or label a fuel as best available, most sustainable, you could be putting -- the economic realities are such that the fuels that are produced using those best available, most sustainable practices may end up being much more expensive than fuel that's produced another way.

And such that that fuel, even though it's designated best available, most sustainable, may not be economically viable in the marketplace. So you can produce a fuel that way, but it may not be viable in the marketplace. So those are a couple of consequences that I think need a little bit more thought as to how that's going to play out in the marketplace.

Thank you.

MR. McKINNEY: And, Jeff, I know you've participated in a lot of our discussions, so I

appreciate the kind of information you're helping put in the record, really helps us, again, think through and fine-tune some of these concepts.

I did want to say that on the one, the idea for, you know, best available, most sustainable, it's not a regulatory standard. It's a standard to help qualify for public money under this incentive program. So it's kind of an important nuance there.

MR. STEPHENS: Right, okay. Thanks.

ASSOCIATE MEMBER DOUGLAS: Yes, and I'd like to step in and emphasize that, as well. And I almost did with the previous speaker.

We're not talking about regulations that limit biofuel production and bioenergy crops in any way. We're not empowered to do that. We're not asked to do that by any legislation.

What we're doing is evaluating the sustainability mandate under the statute. Looking at sustainability concerns that have been raised with energy crops and thinking about what can be done.

The market will determine whether there is a large or small or no energy crop footprint in California. And what we're looking at is what do

we do to increase the sustainability and the long-term viability of such an industry, should there be one. Should there be a market for it.

So, I just want to emphasize, this isn't a regulatory program. If we say you lose points, or you lose eligibility for proposing a project on conservation reserve land, that doesn't mean that nobody can convert their conservation reserve land to an energy crop.

It just means that for the purposes of looking at our program you score lower, or you don't meet a threshold for testing of best management practices, or for testing a certification or a tracking system, or whatever we might be looking at in the solicitation.

MR. STEPHENS: Right. And I guess my only thought on that is that -- and my experience is with building infrastructure at the retail level and dealing with the wholesale infrastructure, as well.

If there's not sufficient funds available to develop that infrastructure because the AB-118 restrictions or regulations have decreased any, or limited the amount of capital that goes into that, then that'll have a ripple

effect on the entire industry.

So if the regulations are such that you don't put capital into the infrastructure that's necessary for the fuels to get to the consumers, then in the long run when those more sustainable practices come along, you know, when the 2.0, you know, feedstock that's very sustainable comes along, that infrastructure may not be there in order to bring those fuels to market.

Now, I know that to some extent there is a provision in there, that in the guidelines that talks about those types of issues where you're looking at developing infrastructure waiting for that 2.0 feedstock. But, there are ramifications to having, you know, those regulations that limit investment into that infrastructure.

So, thank you.

MS. FUGERE: Hi. My name's Danielle Fugere from Friends of the Earth. And I wanted to thank you for a great presentation, and especially for the framework document. Because I think that helps put in perspective what the long-term vision is. And I think it certainly helps me kind of frame where we're going.

So I just had a few comments with regard

to the regs, and the framework. And I'll keep it pretty short. And the bulk of our comments will be in written.

But, first with regard to the way the regs frame sustainability. The first paragraph, is it A, and it's not here in your, it's not in your sheet.

MR. McKINNEY: Right.

MS. FUGERE: Essentially A says -- let me grab my notebook. Sorry. I'm going to suggest just a very minor language modification which deletes the word state from the initial paragraph.

And so it would just say, it would delete state natural resources and it would say natural resources including state and federal. Because I think having the state in that very first paragraph then modifies everything coming after it. And I think has a potential to limit all of the goals to mean that you can only reach state resources.

So I don't know if you have the language?

MR. McKINNEY: I do, so just so everybody can follow the discussion of the point Danielle's raising, so for subparagraph A, this is

page one of our proposed regulations, subparagraph A, and I think --

MR. SMITH: Jim?

MR. McKINNEY: Yes.

MR. SMITH: For purposes of the audience could you call up the --

MR. McKINNEY: It's not on here.

MS. FUGERE: So it's on page 1 of the proposed draft regulatory language. And subparagraph A. We don't have a section yet. Under sustainability goals.

MR. McKINNEY: So it's the third line there?

MS. FUGERE: Right.

MR. McKINNEY: So do not adversely affect the state's natural resources including state and federal lands?

MS. FUGERE: Right.

MR. McKINNEY: So you're proposing to strike the word state's?

MS. FUGERE: Right, so that --

MR. McKINNEY: Okay.

MS. FUGERE: -- to promote alternative and renewable fuels and vehicles that do not adversely affect natural resources including state

and federal lands.

MR. McKINNEY: Okay.

MS. FUGERE: We also believe with regard to the way the regulations are framed, they're framed as goals. But we believe that there should be some basic minimums in the regs, themselves.

So there should be some sustainability requirements even if it's just that CEC will apply sustainability requirements. Because right now it's very much, it's goals, but there is no requirement to actually apply sustainability, at least in the regs.

ASSOCIATE MEMBER DOUGLAS: Danielle, let me ask you about that. I think in Jim's presentation he said that we're looking at some threshold requirements to enter into the program, and we're also looking at, you know, the scoring system, ways to score even higher.

And are you saying that that is not reflected in the language of regulations? That there would be any threshold requirements, for example?

MS. FUGERE: Right. I don't think that it's -- it's not set forth in the regs. The very title, themselves, are goals. And the language is

fairly generic in terms of it's just a goal.

And so there is no statement saying we will meet minimum sustainability requirements, a simple statement such as that.

I mean we, ideally, would like to see the minimum thresholds in the regs, themselves. So stating that 10 percent greenhouse gas reduction is a minimum threshold requirement.

We'd also like to see the federal EISA requirements in there, as well, as minimum requirements. If the federal government can -- we think that this should also be applicable to the state government.

So we would like to see the minimum in there. And then those could be built on. So, for instance, 10 percent being the minimum with -- and also noting that that will be increased over time to meet the state's goals of reducing greenhouse gas emissions.

MR. BABULA: I have a couple comments on that over here. This is Jared, staff counsel. A couple things. First, any law that's already out there, this program would have to follow. So, if you're concerned about not having an endangered species issues in there, these projects would have

to follow that.

MS. FUGERE: I'm sorry, EISA meaning the federal --

MR. BABULA: Oh, you were talking --

MS. FUGERE: -- renewable fuel standard.

MR. BABULA: Okay. The other thing, too, though, is if you look at the AB-118 language, it's also described as sustainability goals, establish sustainability goals. So the language in the statute, itself, uses that term goals.

And if you notice in our regs we do say that, in that same section you were talking about, section A, the sustainability goals described in this section shall guide the program.

So, the shall indicates that these goals that we're developing will be a guide. And it's not an optional thing. These are going to be part of an over-arching umbrella that we will use to help review, in the solicitation process, look at projects.

So combining the actual statutory language of these being goals, and the way we're going to apply both the investment plan and the solicitations, it will encompass more than just --

I think you're kind of concerned that these are more like guidelines or something less --

MS. FUGERE: Or aspirations, right.

MR. BABULA: -- right?

MS. FUGERE: Yes.

MR. BABULA: Something less. And so between the three parts, the statute, the regs and the investment plan and solicitation, it should be more concrete. But definitely we will look at your suggestion.

MS. FUGERE: Okay. And I think it is becoming much more concrete. But with regard to the solicitation, I think I've raised this before, but we're still concerned that maybe in the regulations could describe how there will be public participation in developing the solicitation criteria.

So that we know that the public will be guaranteed a right to participate. Because it sounds like a lot of the specificity is going to come not in the investment plan, but in the solicitations.

And so just as we've had over multiple workshops, I've noted that as you start discussing things in more, not at the 10,000-foot level of

the regs, but at the more specific level, a lot of good examples come up.

And so I think that it's really important that the public participate in the development of that solicitation criteria, itself. Because, you know, very much informed by specific examples and by participation. So I just would like to see that, some kind of statement that that will occur.

MR. McKINNEY: And, Danielle, if I could go back to your previous comment about kind of the formal linkages between the goals and the investment plan and the solicitation.

With the subparagraph A that you commented on initially, and I regret we didn't put that in the presentation here. But the second sentence there in subparagraph A was really intended to create a more formal linkage, again, between the goals and the investment plan and the solicitations.

And this is, you know, in response to the comments from yourself and others. And I think it's a fair comment. So this was our attempt to address that concern.

MS. FUGERE: Um-hum. Okay. I would

like to see a little bit more specificity, even in this sentence.

MR. McKINNEY: Um-hum.

MS. FUGERE: But I think definitely we're getting there in terms of having some kind of comfort of what's coming next and how we're going to participate.

Again, with regard to the goals in the certification programs, it's kind of like I read that and said and do what with the certification programs. So, again, I assume this is going to come later, but certification programs, how is it going to guide the investment or the activities? So it just seemed to be a bit of a, okay, we're you're -- the language was very broad.

Support certified sustainable production. You know, my suggestion would be to say you will utilize certification standards, or something more specific than just support certification. Because it's not clear what that means.

And I think that's the general comments that we have at this time. So we really appreciate the additional description in the framework, and the regs are starting to be filled

out. And so we'll give you just specific comments that we would add, but we appreciate where we're at right now.

Thank you.

MR. SMITH: Danielle, if I might take this opportunity just to respond to a comment you made about public participation. And I want to expand my comments to cover a little bit broader process to address something that Mr. Stephens raised in his first comment about sustainability and -- excuse me, indirect land use impacts and how we will go about the process of measuring that.

We have said before, and I think your comments are very good points that we need to consider in terms of what the regulation language ought to look like. We've been trying to keep it fairly general, but we've, in the past, described this sort-of three-tier process.

The process, the next step is to begin to reflect sustainability goals and sustainability issues into our investment plan. And then ultimately when we develop, when that is adopted, the Commission will hold public forums on actual funding mechanisms, and how we go about

incorporating, even at a lower level detail -- or excuse me, a greater level of detail, excuse me -- into the actual solicitations or interagency agreements or whatever funding mechanisms that the Commissioners deem appropriate for the funding, depending on the project.

So we're committed to having that sort of, that public engagement. We --

MS. FUGERE: Is that -- are you talking about a solicitation-by-solicitation input? Or is this going to be something that's at a higher level, like the workshops that we're doing now?

MR. SMITH: Well, I think it'll be -- well, that's a good question. We originally envisioned that it would probably be at a little bit higher level, so that when we complete the investment plan the next step we want to do is turn around quickly and engage the public and stakeholders into commenting on the mechanisms that we would employ to actually solicit funding or award funding through this program.

And so in that effort we would also, just like we've been doing through the regulations and through the sustainability working group, through the investment plan process, we would

continue that public engagement through the solicitation phase.

So that you folks, your colleagues and members of the public have an opportunity to see what we're proposing in terms of criteria regarding sustainability, as well as other factors that we would employ in evaluating projects.

So we're committed to keeping them very public and transparent process moving forward.

The other thing I just wanted to point out, too, and, Mr. Stephens, your comment about indirect land use issues and the level of science, the status of the state of science regarding it.

It's a very important question to us. And it's one that is still a very young science. We are -- I just wanted to assure you and others that we are working very closely, not only with our colleagues at the Air Resources Board, but the UC university system, and other entities, to try to understand this more clearly.

We certainly are sensitive to applying indirect or direct land use criteria in evaluating projects and in designing this program.

Just to be clear, I want to just take a minute to lay out how we're going about that. We

did the 1007 report which we and the Air Resources Board jointly adopted last December. That was the first attempt at doing a full fuel cycle assessment on a wide variety of alternative and renewable fuels.

We recognized early on in that process that one big piece that was missing was this, the effects of direct and indirect land use. We recognized that in the report and we're committed to, in researching that further, understanding and further developing the tools necessary to accurately incorporate those considerations into our future decisions.

The Air Resources Board, now sort of the baton was handed to them in their low carbon fuel standard proceeding. And they are now faced with the daunting challenge of developing, through their regulatory program, a metric for direct and indirect land use impacts.

And, again, we are working very closely with them, as with the folks at UC and other academic institutions, trying to figure this out.

There is still yet another process underway that we're just getting underway here at the Energy Commission, that leapfrogs over that

and sort of continues that process even beyond what the Air Resources Board might adopt as part of their low carbon fuel standard.

We have just recently approved contracts with entities to continue the research into sustainability, continue the evaluation of the GREET model that both we and the Air Resources Board are employing to evaluate the full fuel cycle assessment. Trying to figure out ways of incorporating more accurately and reliably considerations for sustainability, direct and indirect land use impacts, broader arrays of alternative and renewable fuels into the model.

And continually updating the knowledge of those fuels.

So, that will then carry on beyond the low carbon fuel standard for the next several years. So we have this sort of tag-team process in play between us and the Air Resources Board with involvement of the UC and other entities, trying to continue this knowledge hunt, and continuing to develop the tools that will allow us to reliably and accurately reflect these considerations.

So, I'm sorry to take up, but I wanted

to address that, also. It's a process question, but a very critical one to both our programs.

MS. FUGERE: Right, and that reminded me that I did want to comment on that, just for the record, to say that because AB-118 is primarily concerned with greenhouse gas emissions, we think that it's imperative that we consider land use with the knowledge that exists right now. And the significant potential damage that can be caused by these -- by land use impacts.

We think it's important and appropriate to take those into account now. And as additional knowledge comes in, it can always be adjusted. But you don't want to make the wrong decision from the outset.

So, thank you.

ASSOCIATE MEMBER DOUGLAS: Is there any other public comment or questions before we -- please.

DR. YEH: This is Sonia Yeh from UC Davis. First of all I want to congratulate Jim for doing an excellent job. And having the opportunity to review the staff paper, I think they've done a tremendous effort and it's one step toward the right direction. Of course, a lot need

to be done, but really congratulate and think you guys have done a good job.

And I have two questions, and they're very short one. And first question I'm not definitely for -- or argue for or against, but I'm just curious that since this is you're establishing sustainability goals for investment plans.

So wonder whether cost can be a consideration. So, for example, if you have two projects that have equal scoring and sustainability goals improvement, but one project will cost half -- will have expected production costs of half of the other. Does that warrant further -- a favorable consideration than the other? So that's a question.

And then the second, I'm not sure if I'm jumping ahead, but I would just wonder whether the -- you have any review process -- do you have any plan for review process for the investment plan with all the scoring and the review will be public -- will be transparent and publicly available?

And if it is, what would be the tradeoffs between transparency and public involvement versus business privacy?

Thanks.

MR. McKINNEY: Those are two very good questions. They're really investment plan questions. I can see if Mr. Ward wants to take a shot at that, or Mike Smith is reaching for the microphone.

MR. SMITH: I'll take a shot at it. We're in the middle of, or perhaps nearing the end of the investment plan process. We've had at least two -- we're had two meetings thus far of the advisory committee to discuss the investment plan, that have been Committee-sponsored workshops. We've had one staff-sponsored workshop. And we have yet another staff-sponsored workshop planned for September 19th to discuss the methodology that we've developed that will allow us to establish priorities and funding opportunities in the investment plan that the statute requires us to do.

We have yet a third Committee-sponsored public workshop scheduled for October 6th with the advisory committee. Beyond that we anticipate and we will plan a series of public workshops for the draft final investment plan we're hoping during the month of October which we will take around to

different parts of the state once we have a draft final plan that has been completely vetted by the advisory committee.

And our Transportation Committee, Commissioners Douglas and Boyd will then embark on a series of public workshops statewide to get further input on the investment plan, itself.

All this leading up to adoption of the investment plan at a December 3rd business meeting. That's our schedule. It's not cast in concrete but that's what we're really shooting for.

Does that help or does that answer your question? I know you also mentioned something about scoring criteria. And it's not our intent at this point to include in the investment plan specific scoring criteria.

Again, that's something that we will hold until we have public workshops on solicitations, themselves. The investment plan is intended to be sort of the strategic level document and provide, as the statute says, priorities in funding opportunities.

MR. McKINNEY: And let me repeat Commissioner Douglas' request, this is the time to

make public comment on this phase of the regulatory proceeding for AB-118. So, again, if there are any more folks in the audience -- we have one, and then I'll put out a friendly reminder to people who are participating by WebEx to use the little call button to raise your hand electronically

MR. JAGUNICH: I just made a slide presentation but I won't present it that way. My name is Bob Jagunich. I'm with a company called Biofuels, Logistics and Terminals. We're located -- I'm attempting to put up a terminal for mid-stream distribution of biofuels into the California energy system for transportation.

And it's attractive because it takes advantage of a variety of different infrastructure complements including the interstate rail, deep water port, refined petroleum pipeline for distribution into the system.

So, in a sense my intent is to provide a logistical platform for the LCFS. And also the aspect about this is that I'm essentially feedstock neutral. I'm not trying to promote any type of feedstock in particular, but I'm invested in this in about every way that you can think of.

And eventually I hope to get a grant under AB-118, as well. But that's not my point here today.

The important point is while we're looking at California for feedstock production, we have to recognize its limitations. Now, I know there's people here with ideas for, as was pointed out, feedstock or biofuels 2.0 and 3.0, and as I stand here I know that's going to be changing. And hopefully we will be able to do our own indigenous feedstocks.

But our limitations are we can't grow corn and vegetable oils we can't produce in any great quantity right now to really achieve the goals of the LCFS. They may be coming. I'll support them with my terminal. Come to me, I'm happy to provide a midstream opportunity to store either your feedstock or your biofuels for whatever California's needs may be. My terminal, by the way, will be located in Richmond.

The one comment I'd like to introduce here for the Commission to consider in the long run is the idea of like 7 degrees of freedom, consider 15 degrees, plus or minus, of the equator. Why is that important? There just happens to be more sunlight, more water, higher

temperatures to grow and refine products. And that has a huge impact on lowering carbon in the atmosphere and other places.

The important products there are palm oil for biodiesel, sugar for ethanol. It's more productive, reduces carbon. All the studies show consistently you're going to do better in that type of climate because of a variety of reasons.

But it could impact other things like detropa. We know for a fact that detropa, which is often kicked around, will grow a lot better in that particular part of the world. And I suspect it will also impact things like your future feedstocks and biofuels.

The other thing that's important about that, there already is a sophisticated infrastructure to produce feedstocks in that part of the world. And it could be expanded. Not by taking advantage of the land by replacing other crops like rubber plantations, land that's used for ranching, et cetera. It doesn't have to have a negative impact on the environment.

The problem is that we always will consider, and I have a direct comment on that in the future, is that's the third world. We're

always suspect of people in the third world having impact.

I think we have to recognize the international impact of AB-118. The definitions that we eventually standardize here in California will propagate all over the world. We don't have to look any farther than the no-smoking law.

We have to then consider the impact of not allowing palm oil in particular, one of the customers I'd like to have for this. And that is due to skepticism about RSPO, the Roundtable for Stable Palm Oil standards. RSPO is not perfect, but it's an honest start.

You have to understand that RSPO is not a system that's been developed for California biofuels, it's been developed already for other industries, the oil-chemistry industry. And that's supported by companies like Procter and Gamble, Unilever and Nestle.

The rules have been extended now in RSPO to have to have certification of plantations under the productive process. No one debates the suitability of the rules. What everybody debates is the sustainability of the goals. And it follows, also, the sustainability of the goals put

forth today.

The skepticism lies in the enforcement, or the ability of third world people to game RSPO. But to exclude palm oil in other third world countries and multinational companies is to abdicate California's role as a world leader.

I just want that to be understood. I think that RSPO should be considered. I know there's a lot of debate about this. But I think California, if it uses RSPO as a standard for obtaining sustainability for biofuels, I think that could be used for other feedstocks. And then California will have access to this wonderful source of bioenergy that exists plus or minus 15 degrees of the equator.

That's my comments.

PRESIDING MEMBER BOYD: Thank you. Any other folks here in the audience? You have any folks on the webcast?

MR. McKINNEY: Commissioner Boyd, I'd suggest we just open up the phone lines, take off the mute and see if there are comments that aren't coming through electronically.

PRESIDING MEMBER BOYD: Okay, because I want to let Professor Kaffka make his

presentation, as well.

MR. McKINNEY: Okay.

PRESIDING MEMBER BOYD: Been holding him off and --

MR. McKINNEY: So we'll just briefly unmute the phones and see if there's anybody who's been trying to comment who hasn't been able to indicate so electronically.

(Pause.)

MR. McKINNEY: Okay, why don't we mute the phone again, then. We'll turn it over to Professor Kaffka.

DR. KAFFKA: Good morning. This is Steve Kaffka from UC Davis and the California Biomass Collaborative.

I think good process is important, so I want to make clear how it is that I happen to have a PowerPoint presentation. I was asked yesterday whether I was coming and would make comments. And I said yes. And then so I said, well, do you think some formal presentation would be useful. And said, well, perhaps it would, let me check. And so I found out, in fact, it might be. So that's how come I worked a little bit late last night to get a formal presentation.

So, I'd like to talk about sustainability and crop-based biofuels and regulation. And in doing this I want to grasp the nettle of the difficulty of dealing with sustainability in a regulatory framework.

I think there are some areas in which it's quite clear where we can make measurements and have what we call substantive or -- substantive measurements or criteria for sustainability. But in many other areas it's much more difficult to do that.

So that's basically the framework that I'd like to follow for my talk. Jim, are you going to be doing the --

MR. McKINNEY: Sure, I'll page through for you.

DR. KAFFKA: So let's dive right into it. What's sustainability? Well, it means something; in this case the ability to act on contrasting views about what should be important.

And those views are often correlated with whether you benefit or don't benefit from the definition of sustainability.

And what this author, Mario Giampietro, suggests is that -- and I agree with, is that it's

very difficult in a complex phenomenon to guess the implications of a change. So it makes it complicated.

Next. So he asks the question, this author, Giampietro asks the question. I think it's a useful question to ask. How can you use an optimization model in which you identify what is, in fact, to be optimized, and how can you that, in fact, the terms of those optimization models are the right ones. And how can you use algorithms, in fact, to evaluate the perspectives and values of winners and losers in this process of defining what sustainability is.

So, how can we study agricultural sustainability? Well, let's talk a little bit about some of the concrete things that we can do. Well, one of the best ways to do this is to use long-term experiments to measure biophysical changes.

So the University has had a long-term research project that has operated now for 14 years. It's just like the rest of the state, suffering budget problems, and it's kind of in abeyance at the moment.

Next. But long-term research allows for

us to detect trends in the direction of change over time in well-defined systems. These trends can be measured independent of stochastic variation.

The value of empirical studies is that you can incorporate all the factors of relevancy, even if they're not specifically measured. For example, you might be looking at changes in soil organic matter, but one of the things that's -- and crop yield, but one of the things that it's affecting is the occurrence of pests and diseases. They're not specifically necessarily measured, but they impact real systems in the real world and they're effectively incorporated in the outcome of such research.

So we can ask questions, biophysical questions, about the directions and trends in which farming practices go in time. Those trends can then be used to calibrate and validate ecosystem models, which allow us to make much longer term predictions with more confidence than we can in the past.

But you need that constant link back to an empirical study in an iterative and hematopoietic process. So that not just long-term

research, but other specific agricultural research projects allow us to gain data that allows us to use models more reasonably and effectively.

But what about agricultural sustainability? What do we mean by agricultural sustainability? What about social- and value-based concerns? Well, if you look at the ag literature you find all kinds of discussions that are philosophical or ideological in nature that pose a set of strategies for standards, the capacity to fulfill a set of goals. Those are all there.

One of the more recent books is called, Developing and Extending Sustainable Agriculture, edited by Chuck Francis. And the best essay in that book is by John Ikerd, who's an economist at the University of Missouri.

And I think he says some wise things about the social- and value-based concerns. One, that the issue of sustainability is often rooted in a world view that's fundamentally different from a mechanistic world view.

Another that one's world view is a matter of personal belief and reflects how we believe the world works and what we believe about

our place in it.

And lastly, he -- well, not lastly, but among other things, he suggests that ecological issues are fundamentally ethical and moral in nature. Not necessarily technical.

So, a paper that's submitted and will be printed in California Agriculture in January that I've read, I've taken this comment from it. Most simply, I think sustainability means the ability to continue over time. We can assess and monitor the sustainability of agricultural biomass use for energy using well-validated simulation models linked to long-term research.

And we can use those to improve the accuracy of LCA assessments for the net benefits from agricultural biomass. But agreement about other aspects of sustainability that are primarily social- and value-based, I think, can only come from a process that embodies what we can call procedural rationality.

So, we can perhaps talk about moving from substantive rationality, which is the idea that we can somehow create some kind of optimization model that tells us the best solution, moving to a well-guided and constant and

ongoing process of negotiation.

So when dealing with sustainability in a time of change, the right set of relative criteria to represent a problem that is not known or knowable a priori. And a satisfactory set of criteria can only be obtained as a result of negotiation among stakeholders who are dealing with the effects of those changes.

Clearly, we're talking about changing the energy economy of our society. It has huge effects for us all. And we can't necessarily know, a priori, what the outcome is. So it's very hard to necessarily pick a good optimum at this point in time.

So we, I think, have to have a process that's built into the regulatory process that incorporates this constant evaluation. I think some of the comments from the staff have leaned to that. And I think Jim has this in his regulatory language, and I want to essentially support that.

The weight given to incommensurable contrasting criteria for performance cannot be defined once and for all by considering existing knowledge, and cannot be applied over the entire planet at the different locations in specific

situations.

And when substantial change is occurring, it's impossible to have an objective definition of the best thing to do. So, assigning a best set of choices is essentially short-cutting that process.

This is a bit of systems analysis, but basically I want to talk a little bit about the relationship of modeling and sustainability. When we do something like grow a corn crop, we apply fertilizer, nitrogen, to it. We get a nice high yield. That's a great outcome. So we continue to do it.

Next slide. But, over time, we discover that maybe there are some secondary consequences that the system reacts at a slower rate, but necessarily negative. And so we find out that we're having pollution of groundwater; or perhaps problems in the Mississippi River Delta, in the midwest, in this case.

But with additional time and capacity and research, we can develop solutions to those slow lagtime reactions through research and through regulatory programs and through other mechanisms. And we can start to have solutions to

those timelag problems. But we can't necessarily know what they're going to be ahead of time.

So if we go to simple systems theory, there's a paper called Order and Disorder in Biological Control Systems by Robert Rosen. I think it's a very good one.

He says that a deviation of a system from the behavior expected arises from the fact that the system is more open to interaction than predicted on the basis of the model. In other words, models are selected and they reduce -- they have to, by definition, reduce the numbers of things that they can encompass just simply to be able to have an outcome.

But in life, there's all these things that are affecting the process that's being modeled that are not included in the model. So such disordering arises from the very nature of abstraction, the model building itself, and it can't simply ever get out of it entirely.

So, when you use these predictive models to control a system it's going to result in a variety of unpredictable effects on system behavior, or the side effects.

Next. This is a figure that I got just

in a paper the other day. It's by Vinod Khosla, and he's responding to the idea of indirect land use change and the role of models in predicting the consequences of a direct land use change.

And he gave some examples of how, in the past, models have been actually quite widely wrong. The first one are prediction models by the energy, EIA, Energy Information Agency, about oil price. These are experts in energy use and consumption and supply that work for the Department of Energy.

These are the differences between the actual and forecast prices over the last 25 or 20 years or so. And they're substantial. Even by experts.

So if you were basing, perhaps like General Motors did, some of their plans on predictions by the best people in the room in terms of people who know the most about this, they've been wildly wrong.

Another example that he quotes that I thought was interesting was the McKinsey Group, which I think is a high-powered consulting firm, they did a prediction for AT&T in 1980 about the number of cellphones that would be used in the

year 2000 in the U.S. And they predicted there would be a million. The actual number is closer to 100 million. Again, using the best available knowledge in 1980.

Next. So let me then now talk a little bit about the indirect land use change issue. As we sit here now, there's quite a bit of land clearing going on in the tropical regions. Forests are burning. It's been a traditional method of surviving of farming in such areas.

Slash-and-burn agriculture is clearly what happens is the forest is cut down, burned. The ashes and residue are used for fertility to grow a series of crops. After awhile the crops become weedy and unproductive. The nutrients are used and the farmer moves on, goes off and burns another system.

The system has broken down in the modern world because of population pressures. But it's an example of ongoing land use processes.

Next. In discussing crop biofuels there's been a lot of controversies developed about the indirect land use change issue. And properly so, in my view. I don't want to say that it's not an issue, it is an issue.

Tim Searchinger, Dr. Dan Kammen down at UC Berkeley, and others, have essentially argued that calculating the effects of biofuel use only on the basis of a field of the region was too simple. It was too simple a calculation.

In other words, that they were effects that were beyond the scale of the field. And that if you incorporated them, at least Searchinger argued that if you incorporated those effects as he calculated them, that they would overwhelm any net benefits from the use of the crop-based biofuels. It seems it's a reasonable argument, per se.

Next. So, basically most of the calculations about the benefits of CO2 have been conducted mostly at the field level, perhaps at the farm level. But not at the policy level, if you will, of regional or larger level.

Okay. But what was proposed as an alterative was another simple model. In other words, that if you take land out of use in the midwest for ethanol you have fewer soybean acres, the soybean price rises, that soybeans then get planted on forest land in the tropics. Forest dwellers are displaced, and you get large CO2

emissions. Fairly simple model.

Next. I've tried to create a model that I think actually is -- this isn't complex enough, but it's much closer, I think, to what actually goes on in the world.

First of all, one of the factors that has -- a major factor that reduced soybean land over time was the conservation reserve program. One of the previous commenters mentioned it.

The primary purpose of the conservation reserve program wasn't necessarily conservation. It was, in fact, price control. There was too many soybeans and too much corn around. And so land was taken out of production. Some of it was erodible and nonusable, but it was usually the less productive land, but not necessarily unsuitable for agriculture.

That resulted in fewer soybean acres. Increased demand for corn also resulted in fewer soybean acres. That caused a soybean price rise, clearly. But also, increasing world demand for feed grains has caused that soybean price rise. Perhaps much more than the diversion of land due to corn ethanol demand.

The real consequence, if you follow the

GTAP model, has been an increase in soybean acres in the southern U.S., substituting for cotton.

There may have been a small direct effect on forest lands in Brazil or elsewhere where soybeans are produced. But that effect on the increasing feed grain demands is a much more direct effect on that.

Now, what's going on in the tropics? In the tropics you have ongoing land conversion processes for timber, charcoal, slash-and-burn and agriculture and other reasons. Some of that land obviously displaces forest. Some of this process indigenous to those areas displaces forest dwellers. But it also provide a land base for corn, soybeans or other crops that's different than this newly converted forest land. And it's this scale, this process here that's unknown. Not well quantified. And can't be, at the moment, well quantified.

One of the possible consequences is to stabilize land -- biofuel production is possible to stabilize that process and improve it, which would be a desirable process from many perspectives.

But these forces that really are

affecting this process most powerfully are independent and have been going on over multi years. They're not instantaneous and they're not going to change very quickly.

Next. So, we notice that some of the sustainability standards, the most recent one for the Roundtable on Sustainable Biofuels, has come up with a nice set of definitions or guidelines for sustainability. But at the moment they acknowledge indirect land use change, but leave it unaccounted, because they don't feel it can be properly accounted for.

Next, Jim. Go through, we don't have to read these. So, what are some problems with assessing and valuing land use change. This is my list; it coincides with other people's. It's difficult to quantify, it involves many subjective and value judgments.

It's unreasonable to ascribe to biofuel production alone in many instances because cropping systems have diverse integrative effects.

Models used to estimate land use change were not designed for the purpose to which they're now applied. Powerful economic sources and human well being drive the conversion of land. Tropical

land use change attributed to biofuel production may not be due to it at all.

Next. Not all conversion is destructive or the least bad local alternative. It does not account for new crops, new crop systems, new technology and their interaction.

It's used for standards. This is important. May preclude much beneficial development, especially, but not only, in poor areas of the world. And may conflict with other legitimate public policy goals. And I think for unique reasons LUC will not apply to California-grown feedstocks.

Sustainability is a big topic. We could put any number of circles and dots up here. Human welfare, direct land use effects, conservation values, greenhouse gas reductions, you could think of others.

Next. What a carbon standard does is take one element of sustainability out and essentially ask that we force all these other elements of sustainability into that one smaller box.

It's a legitimate problem. We have to have carbon fuel standards, but we have to

acknowledge, as well, that it's something of a forced process.

Next. So, getting back to what we mean by sustainability, these tradeoffs are not always commensurable. You have different relevant scales that have to be considered simultaneously. There are different relevant social groups. There's legitimate, but contrasting, views. There are heterogeneous perceptions of costs and benefits that all have to be accounted. This is the nettle of dealing with sustainability. It's been introduced in the statutes, but this is the nettle that we have to grasp.

Next. I want to focus at last on just these last two problems with land use change with respect to California and give you some examples. It's used for standards, may preclude beneficial development, including currently unanticipated solutions. And may conflict with other legitimate public policy goals. And I think, for unique reasons, it doesn't apply very well to California-grown feedstocks.

Next. This is retired land in the western San Joaquin Valley. It's retired because there's inadequate water, because it's affected by

shallow saline water tables.

It's very difficult and it's impossible in arid or semi-arid regions to irrigate and not have some salinity enter groundwater supplies. It simply can't be done. If you move water through the profile, it dissolves salts. And they move down. Some of it, however, can be intercepted with tile drains. And that process can be forestalled.

Next. So, in the western San Joaquin Valley the underlying geology is such that shallow water tables appear, especially down close to the river in the Mendota area and along the western side of highway 5. It's due to this confining layer of the Corcoran clay.

These areas tend to, especially up-river where -- upstream where you have all the almond trees now. If you drive along highway 5, that irrigation's pushing salt and water down to the water table and it's showing up in the lower areas. And some of those lower areas are being idled or retired.

Next. We have a project in Kings County, a little farther south. This is basically the subsurface geology there. Where we've taken

land that was abandoned by the farm because of salinity reasons and I've been using wastewater, some saline drainage water, wastewater from the town of Lemoor, and some good irrigation water to grow my favorite crop these days, bermuda grass. And it's doing pretty well.

Next. It seems to be thriving. It's a salt tolerant, halophytic species. It can grow both on saline lands and on wastewater.

Next, Jim. And since 1999 we've been irrigating it in this fashion and grazing cattle. But cattle are one perfectly good use, but you could also be using this for biomass for -- as a biomass feedstock.

Next. So, with our low carbon fuel standard that may require the use of biomass for transportation fuels in related measures, some of these kinds of crops, the halophytic crops, that might use wastewater might be able to be used for feedstocks. We don't have a lot of surplus land and water in California, and this may be a way, for example, of killing two birds with one stone. In other words, trying to manage the salinity problem which is a sustainability problem, but also using the production of biofuels to basically

provide economic means for doing so.

It's not without ecological risks. There are trace elements and other things associated with it. But nothing I can see going forward is without risks.

Next. The other thing is let's talk a little bit about unanticipated solutions. I know that we're talking primarily about transportation fuels. But we use petroleum for other things, including petrochemical hydrocarbons. And if you use petroleum for petrochemical feedstocks, you have to oxygenize them, you have to change them chemically.

Go ahead. So, that's expensive and it takes energy. Instead you could use natural products for lubricants, crankcase oil, for example, for biodiesel as an ester. And these products are already stereochemically correct and oxygenated. And actually ends up being much more energy efficient than trying to make it out of oil

Go ahead. So, you know, there's a lot of products that might come from the growth of biofuels or biomass crops for energy including solvents, plastics, lubricants, fragrances and other things.

Next. So here's one of the crops I think has actually, at least theoretical, potential in California. This is joboba simmondsia chinensis. It's a native shrub in California, in the Sonora Desert, Arizona and Mexico. It produces these large seeds. They're 55 percent wax esters.

This farmer melts them and puts them right in his diesel engines. But it also can be used for all kinds of other projects. This is hydrogenated feedstock material.

Next. It has a very low water requirements, it's a desert shrub. So, for instance, I'll be talking about this next week at the Harlem Conference at UC Davis, but improved jojoba cultivars, which are now available, may use only 40 percent of the water and less than 30 percent of the fertilizer needed to produce an equivalent harvest of almonds, for example, in the San Joaquin Valley.

At high enough production levels it'll reduce petroleum use in potentially many ways. But this is a project that will require, since it's a shrub or a tree, it's going to require years to develop. But it has potentially, I

think, terrific opportunities in California. But people haven't been thinking about them yet.

Next. Lastly, just a couple of comments about another potential feedstock. This is sugarcane in the Imperial Valley. Had a grower say to me a couple of weeks ago that if you were to add the income from sugarcane produced in the Imperial Valley, which has the highest solar energy levels almost anywhere in the world, together with income from electricity sales and other biofuel products, then sugarcane may be the most profitable crop in the Imperial Valley per acrefoot of water used.

We tend to think of it only as the ethanol, but the energy production per acrefoot combined, or the sugar, actually adds up to quite a potentially valuable use of water in the desert.

Next. So there's some sugarcane being harvested down there on plots. Go ahead. What would sugarcane displace? One of the things it might displace is bermuda grass hay. Another is sorghum, is Sudangrass hay. There's about 100,000 acres of vegetable crops in the Imperial Valley out of about 500,000 acres. The majority of the rest is forages that are produced for various

reasons including these low-value forages, Bermuda grass and Sudan.

Next. Some of that Sudan gets exported to Japan. There it is feeding Kobe beef, which is really quite wonderful I'm told. I've never eaten it, it's so expensive.

But this really is such a trivial displacement that it seems to me it's not even, in fact, if you look at the global models that calculate land use change that are being used, like GTAP and so on, California's not even in the models.

So this displacement, in terms of the gains that California may get back from, for example, sugarcane ethanol, becomes viable in the Imperial Valley, I think is really quite trivial.

Next. Can we produce biofuels in California from crops and crop systems? Yes, I think. But we should certainly -- we have to consider sustainability. One thing to keep in mind about our own production is that we can have the most clear information, the best knowledge about our assumptions associated with it. This should, I think, provide some additional value for our own feedstocks. Someone else mentioned it

earlier, I don't think we should export our pollution.

Next. So, we can grow these crops, but I think we have to be humble in our regulatory approach. We have to expect that we'll make some mistakes. It's perfectly human and nonavoidable that we'll have some things we'll want to adjust in our standards as we go along.

I recommend that we go slowly, that we gradually increase sustainability requirements as knowledge and public consensus approves. And make sure that the public agrees.

I think we need to use a light touch and not constrain innovation, be willing to make prudent tradeoffs. Some ambiguity in language actually is appropriate. It allows that negotiation process to proceed and come up with a legitimate consensus answer.

And right now at this stage in time the net long-term public benefits from such innovation, I think, will out-weigh short-term losses in greenhouse gas benefits, if any, from overly restrictive policies.

MR. McKINNEY: That's it.

DR. KAFFKA: Is that it? Okay, thanks.

PRESIDING MEMBER BOYD: Thank you, Steve. Let me just, a couple of comments. I'm glad somebody asked you to make this presentation. I'm, frankly, very impressed and gratified. You and I don't know each other very well, but we share a lot of common thoughts predicated maybe by you on all the studying that you've done and by me on all the years I've been sitting behind the table like this as a regulator, et cetera, in California.

And your comments about systems analysis, modeling, sustainability and unintended consequences are certainly true from my experience, my academic training has left me kind of a fan of systems analysis. But in government I've seen very little of it until the greatest driver of all, climate change, has arrived on the scene to force a more integrated look at everything else that's happening.

But, my fear has been, as an extreme advocate of the need to address climate change for well over a decade, you know, we waited so long, now we're running like crazy. And I'm talking out of school here, but I got about two days notice on the low carbon fuel standard, and I did say to

people, do you have any idea what you're getting into. We can't even see the bottom of this pool on modeling and the incredible investments that have to be made.

But I also agree and subscribe to stretch goals and push as hard as we can. I think you have laid out some very good cautions. I want to ask you an almost rhetorical question that I wrote down as we were going along. Do you think we're ready to do what we've been asked to do? We, the ARB, we, the Energy Commission, we, our society, to address things like the low carbon fuel standard and a alternative fuels plan so deeply steeped in process as the legislation has required, and as we are working here on today?

DR. KAFFKA: Well, that's a, you know, I would say we're ready to start. We're clearly ready to start socially. I think the public is interested in climate change and is willing to make some sacrifices.

I think it's incumbent on us that we not be so anxious about it that we foreclose our best options, and right from the very beginning by assuming that we know more than we do.

In other words, I would recommend that

throughout the LCFS and AB-118 process, that we consider it a learning hematopoietic process as much as possible.

Not to say that some things cannot be measured. I mean I think we can -- we'll be able to agree that some things that we can measure; we can measure trends in agriculture, for example, what's going on with soil organic matter. We can estimate overall energy efficiency on a per-acre basis, or per-unit product basis.

We can look at or estimate the runoff impacts. We certainly can estimate water use. We can measure some things concretely. But meaning and interpretation of those, about whether they are sustainable or not, though, that's a much more dynamic complicated process.

But I think there are also other things that some people think we can model that I don't agree we can at this stage. And I think the indirect land use change issue is one of those.

And there is the potential, I mean the argument goes this way. If we don't account for the carbon costs associated with indirect land use change, we will send the wrong signals to the world market. I think that's possible.

There are clearly some areas of the world where I think, without any modeling at all, we could argue that we don't want to see biofuels produced. On high organic matter swamplands in Indonesia, displacing orangutan habitat.

The easy ones are obvious. But most of the world is in the grey area where we can't very well quantitatively apply that.

Using models when information that's required for accuracy, and even the methods that are best to use are not available is not good science in my view, no matter how rigorous the models are done. I don't think it's good public policy.

So I would say that we are ready to launch a program, but that I think our focus, from a regulatory view, should be to gradually -- to start light and gradually increase our restrictive regulatory standards as our knowledge becomes more apparent, and our methods become more reasonable. And are more broadly accepted by the public.

I don't know if I directed that answer --

PRESIDING MEMBER BOYD: No, thank you, appreciate that. Part of your -- your

presentation reminded me of why I'm so into using our waste resources in this state for bioenergy. While you all debate the crop additive.

But, in any event, I appreciate very much what you had to say. And I think you've laid out the painful problem that we have. And this agency, and some of the people in this room, have very painful familiarity with your EIA slide.

We tend to take their high estimate as our low estimate and make our own estimates. And we can't -- we're not right, either. So it's an incredibly different area.

And an unintended consequences, I don't know why I feel like saying this, but as a survivor of the MTBE issue in California, when we did cleaner burning gasoline in another life of mine, we have in the files letters from the USEPA, the California Health Department of Water -- the water-drinking people, the State Water Resources Control Board that there's absolutely nothing wrong with MTBE.

And then, it wasn't mandated in the regulations. They could have used any oxygenate they wanted. They used MTBE, and the rest is history. So, unintended consequences is something

that we always have to be looking over our should at. Enough said by me. Questions, comments by others?

Speechless.

(Laughter.)

PRESIDING MEMBER BOYD: Jim, is there anybody else left on the phone do you think? Do you want to check one more time?

MR. McKINNEY: Should we check one more time and open the -- unmute the phone?

Okay, last chance for public comment on this phase of our regulatory proceedings?

MR. SPEAKER: Hello?

MR. McKINNEY: Somebody was walking up to the microphone, so, sir, if you could hold on for a second, we'll recognize Danielle Fugere.

MS. FUGERE: Yeah. I just wanted to, the only thing I wanted to say was with regard to the comment that we might be foreclosing our best options.

The one thing that I think is important to remember, and this was pointed out, I think, by the TIAX analysis in the gap analysis, in terms of biofuel production. There's an enormous investment in biofuels in this country and

worldwide. So I don't think to the extent that AB-118 really focuses on the most sustainable fuels, that we will be foreclosing options.

MR. McKINNEY: Then we had somebody on the phone line? Can you identify yourself, please?

(Pause.)

MR. McKINNEY: No. Commissioner Boyd, I don't think there's any more public comment on this phase.

PRESIDING MEMBER BOYD: Well, I want to thank everybody for being here today, for participating in this actually very stimulating discussion of a very difficult topic.

And if there is no other comment from anyone, we'll adjourn this workshop and thank you all.

(Whereupon, at 11:49 a.m., the workshop was adjourned.)

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CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Committee Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 15th day of September, 2008.