STATE OF CALIFORNIA – THE RESOURCES AGENCY
BEFORE THE
CALIFORNIA ENERGY COMMISSION (CEC)

In the matter of,	)	
	)	Docket No. 12-ALT-02
	)	
2012-2014 Investment Plan	)	
Update	)	
	)	

Advisory Committee Meeting and Public Workshop
RE: Alternative and Renewable
Fuel and Vehicle Technology Program

California Energy Commission
1516 Ninth Street
First Floor, Hearing Room A
Sacramento, California

September 19, 2012
10:00 A.M.

Reported by:
Kent Odell

COMMISSIONERS PRESENT

Carla Peterman, Commissioner

ADVISORY COMMITTEE MEMBERS PRESENT (*Via WebEx)

*Shannon Baker-Branstetter, Consumers Union

Tim Carmichael, California Natural Gas Vehicle Coalition

Peter Christensen, Representing Tom Cackette, California Air Resources Board

Catherine Dunwoody, Representing Justin Ward, California Fuel Cell Partnership

*Tyson Eckerle, Energy Independence Now

Lesley Garland, Western Propane Gas Association

Joe Gershen, California Biodiesel Alliance (courtesy of Crimson Renewable Energy)

Bonnie Holmes-Gen, American Lung Association

Steve Kaffka, University of California, Davis-California Biomass Collaborative

Ralph Knight, Napa Valley Unified School District

Peter Cooper, California Employment Training Panel

Anne McMonigle, California Labor Federation

*Simon Mui, Natural Resources Defense Council

*John Shears, Center for Energy Efficiency and Renewable Technologies

Jananne Sharpless, Member at Large

Eileen Tutt, California Electric Transportation Coalition

Clark Williams, Representing Howard Levenson, California Department of Resources Recycling and Recovery

STAFF

Pat Perez, Deputy Director

Randy Roesser, New Deputy Director

Leslie Baroody, Advisor to Commissioner Peterman

John Butler, Manager

Jim McKinney, Program Manager, Alternative and Renewable Fuel and Vehicle Technology Program

Tim Olson, Manager, Transportation Energy Office

Larry Rillera, Division of Fuels and Transportation

Also Present (* Via WebEx)

Jamie Hall, California Hybrid Efficient and Advanced Truck Research Center

Kevin Wing, San Joaquin Valley Air Quality Management District

Mike Simon, Transpower

Matt Miyasato, South Coast Air Quality Management District

Public Comment

Bob Davis

Trina Martynowiez

Russell Teall

Rebecca Boudreaux

Sashu Constantine

Brad Beauchamp, Roush

Michael Bennett

Paul Staples, HyGen

Colleen Quinn, Coulomb

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P R O C E E D I N G S

SEPTEMBER 19, 2012 10:06 A.M.

COMMISSIONER PETERMAN: Hello, we're going to get started. I know we're waiting for a few nametags and such, but we've got a full agenda and I'd like to proceed.

Good morning, I am Commissioner Carla Peterman with the Energy Commission and welcome to today's Advisory Committee meeting. Welcome to all of those who are joining us by WebEx. We look forward to your participation.

I'd just offer a few brief introductory comments to why we're having this meeting today. Over the last year that I've been Lead Commissioner in Transportation, I've really appreciated the opportunities we've gotten together and had an opportunity to talk about the funding needs for the State Alternative Fuels, Vehicles and Infrastructure.

Indeed, the input of the Advisory Committee, as well as the public, has been instrumental in helping us improve the investment plans each year and to approve our process for getting the funding out.

As we're required to do under the AB118 statute we have two public meetings on the Investment Plan, and this is not one of those.

I wanted to have a meeting, first, before we have a meeting later this fall to talk about the '13-'14 Investment Plan where all of us could get together and just talk about some of the recent developments within the various alternative vehicles, fuels and technology spaces, and infrastructure spaces.

So, I appreciate our Advisory Committee Members being willing to present today. I think it's very valuable for all of us to hear about all the different technologies. There is so much happening that one can easily focus on the one area and the fuel, for example, that you work with.

But we're supportive of a diversified portfolio and to do that it helps for all of us to be aware of different trends.

So, I also welcome feedback about other meetings you might like to have as an Advisory Committee. I know everyone is busy and can't attend everything, but we would like to facilitate more interactions, engagements to the extent the Advisory Committee would like.

Again, knowing the importance of the Advisory Committee, I also want to make sure that it continues to be inclusive and reflects the various stakeholders that need to be a part of this conversation.

To that effect, as staff will mention in their

introductory presentation, we'll be putting out a notice later this week requesting new Advisory Committee Members, in particular with a focus on a representation from the environmental justice community.

Through the course of this IEPR we've had participation from EJ representatives in our workshops and, although the IEPR focus has been on renewables, we've heard from stakeholders about their real interest in having cleaner alternative fuels and transportation.

As the notice will say, if there are other stakeholder groups that you think are not reflected by the Advisory Committee, please suggest and we'll see if we can facilitate more members.

It's also a good opportunity today for staff to give you an update on what's been happening and so they will cover what's been going on with recent solicitations, as well as some recent policy trends.

I'd also like to take the opportunity, now, to note that today will be Pat Perez's last Advisory Committee meeting. After serving with us for 32 years he has decided he's had enough and he's taking retirement. No, I know Pat is very devoted to the program; he has been devoted to the Energy Commission. He has worked across many programs and has successfully led the Commission through a number of initiatives and

challenging times, including his leadership over the ARRA process.

Pat will be retiring in November and so there will be a much longer discussion of his value to the Commission and how much we miss him at a future Business meeting. But I did want the Advisory Committee members to know about this news and to have an opportunity to congratulate and thank Pat, personally.

Pat, in his comments, I believe, will talk about his replacement. He has been replaced -- it's hard to -- he's currently serving in conjunction, now, with a newly appointed Deputy Director, Randy Roesser, and we're trying to smooth that transition. And so, Pat has been kind enough to continue to work alongside with Randy to help him get up to speed on the program.

We've also had a number of other changes with staff and the program that Pat will speak to.

So, with that I will turn the meeting over to Pat. And thank you to staff for preparing this workshop.

Oh, one more thing, I should also mention I've had a staff change. I've been able to add Leslie Baroody to my staff as an advisor, a Transportation Advisor.

Many of you are familiar with her. She worked

in the division as EVT lead. I believe Leslie's very excited to expand her knowledge about all the other fuel types and technologies, and I'm glad to have her working in my office. Thanks.

MR. PEREZ: Thank you, Commissioner Peterman. And good morning valued stakeholders, Advisory Committee Members, and the general public.

We have a very exciting day ahead for you and what I'd like to do is just briefly go over the agenda, the topics we are going to cover this morning, as well as this afternoon, including some opening remarks.

I'd also like to talk a little bit about the program status and Mr. McKinney here, to my left, will be providing an overview of some of the program funding today, the modifications that we're proposing, as well as the recent solicitations that Commissioner Peterman pointed out. And, more importantly, some of the future solicitations that are coming forward.

But this is really your day to provide input and comments to us, so we're going to try to keep the staff presentations to a bare minimum.

When we get to about 11:00 o'clock we're going to talk a little bit about market and technology, we'll have presentations on workforce training, manufacturing and fuels production, and as well as upstream

distribution activities.

We'll have a short break for lunch at noon. And then we'll resume at 1:00 o'clock with our market and technology review. We'll hear presentations from local alternative fuel infrastructure with respect to natural gas, hydrogen, electric charging, advanced technology vehicle demonstration, the incentives we have, as well as emerging opportunities.

And then most importantly, we'll conclude the day with public comments and input. So, for those of you listening in, as well as here in the audience today, we really would like to encourage your input and feedback as we move forward and lay the foundation for the fiscal year 2013-2014 Investment Plan Update.

And then, finally, as Commissioner Peterman noted, a lot of very exciting organizational updates. First, with my departure, I think that's probably a healthy sign. And although I will miss all of you, you're going to be in the very capable hands of Randy Roesser, also a long-term Energy Commission manager and staffer, who will assume responsibilities tomorrow. And you'll get a chance to meet him this afternoon at 1:00 o'clock. He, unfortunately, is at a funeral right now.

Some other very exciting changes within my division is the Emerging Fuels and Technologies Office,

we have a new manager, Mr. John Butler. And I'd like to have John, maybe, just come up and share a little about his background with the group.

MR. BUTLER: Thanks Pat. Again, my name is John Butler. I've been with the Emerging Fuels and Technologies Office for about two months, now. I'm really excited to be part of this program.

My background; I've been with the Energy Commission for about 20 years, in management for about 12 years. And most recently I managed and implemented the ARRA programs for California.

So, this is a new challenge and a new, exciting opportunity and I look forward to working with the Advisory Committee and all the stakeholders to make sure the program's efficient and effectively implemented. Thank you very much.

COMMISSIONER PETERMAN: And I'll note we're happy to have John on board and particularly his experience with the ARRA program in terms of that contract management, making sure that the work gets done. I think it will be very valuable for the Energy Commission, as we're trying to move through a number of contracts with the 118 program, which you all are familiar with. Thank you, John.

MR. PEREZ: Thank you, John. And one other

important announcement in the Fuels and Transportation Division is this week we announced that Marsha Smith will be taking over the Special Projects Office. And can I have Marsha Smith stand, if she's here? This is Marsha Smith. Thank you.

Many of you will be working with her in the future. One of the programs under the Special Projects Office is the Clean Energy Business Financing Program and we are looking at efforts to better align that with the Manufacturing Program that we have under the Alternative and Renewable Fuel and Technologies Program, and so you'll be seeing more of her down the road.

And then, also, many of you may not know this but Tim Olson has also joined the Division and is now heading up the Transportation Office, which used to be called the Fuels Office.

So, Tim here, and many of you know him because of his active role as the advisor here and active participant with the AB118 Program.

And last, but not least, I'd also like to introduce to you our new legal counsel, Michael Doughton. Michael, are you here? He's in the back. Well, thank you for being here.

And one other last introduction I'd like to make is I'd like to acknowledge Carrie Cornwell, Consultant

for the Senate Transportation Committee that is here today. Carrie, thank you for joining us.

So, that concludes my introductions and look forward to proceeding, and I'll now turn it over to Mr. Jim McKinney.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Pat, just a quick question, Tim Carmichael. For those of you who weren't quick enough with your pens, is there a list of those management changes that we can get from you or is it -- you said it was announced; is there an e-mail blast on that?

MR. PEREZ: So, what I hope to do is update the organizational chart later this afternoon and, hopefully, we'll just post it to the website.

COMMISSIONER PETERMAN: Yeah, and by the end of the meeting if we could just put it on a slide and have it up there, that would be great.

MR. PEREZ: Okay.

COMMISSIONER PETERMAN: Thank you.

MR. MC KINNEY: Okay, good morning members of the Advisory Committee, and public stakeholders and public at large. I'm Jim McKinney, Program Manager with the Alternative and Renewable Fuel and Vehicle Technology Program.

If I could make a couple of other staff things;

one, Darcy Chapman, our long-time team leader on workforce development has retired.

David Nichols is now filling in for her, but she did a yeoman's job in that array.

And I think for the first time we're at full staffing levels for the Emerging Fuels and Technologies Office. We just have a bunch of great new hires that we've recruited over the past six months. So, you'll be getting to work with many of them.

COMMISSIONER PETERMAN: So, be kind to them because they're new and we want them to stay.

(Laughter)

MR. MC KINNEY: So, just to situate us as I go through the program status report, these are the allocations for the last two Investment Plans.

As we begin the 2013-14 funding cycle let me note that we have allocated nearly half a billion dollars in AB118 funds through this program, and that covers five fiscal years.

And we've encumbered $248 million over 122 contracts as of June of this year.

So, there are two charts at the back of your packet that provide more information on this.

So, a couple of funding modifications, as we did two years ago we are facing a $10 million reduction in

the funds for this year. So, we proposed to use what we call the haircut approach, which is a straight ten percent cut across the board in each category.

There are two other minor --

COMMISSIONER PETERMAN: And Jim, before you move on from that, let me just note that as we've done in the past we will send this out, the notice about this to the Advisory Committee and the public electronically. But since we were convening this meeting we wanted to first bring this point up here. Thank you.

MR. MC KINNEY: Thank you, Commissioner.

For the '11-'12 Investment Plan we had allocated a half a million dollars for a propane infrastructure. We received no applications in that funding category. We propose to shift that to the EV infrastructure project area.

Similarly, for sustainability we identified no timely sustainability studies that were needed to support the program so we have proposed shifting that half-million dollars over to the medium-duty, heavy-duty vehicle technology category, which has three projects totaling $4.5 million that passed, but that were not funded because we did not have enough funds for that.

Now, I'm going to spend a little bit of time to go through the recent solicitations. So, first, again,

medium-duty, heavy-duty vehicle technology, this is a critically important program area right now as we work to get zero emission, and very low emission, and low carbon truck technologies out into the demonstration phase and, ultimately, to the commercial phase.

The NOPAs were released in April so in total we put $22.3 million for 14 demonstration projects in this. And it's really a great mix of companies. We've got some of our super start-up California companies, like EVI, Motive, and Transpower, both Silicon Valley companies and L.A. companies with a series of medium-duty and heavy-duty electric drive trucks.

We've got some good developments in the natural gas truck sector with motors that are optimized to use both natural gas and LNG for heavy-duty transport.

And then we also have some big companies, like Volvo and Navistar that are active, too, and we're funding our first off-road hybrid excavator project that Volvo has done.

So, as a reminder, you know, medium-duty, heavy-duty trucks comprise about two percent of the vehicle fleet here in California, we've got about 27 million vehicles. They consume 16 percent of the fuel, that's primarily diesel, and then you get the commensurate levels of particulate matter criteria emissions, air

toxics that go with that. So, it's an important area for us to focus upon.

For biofuels production facilities, again, as we announced in the spring, seven projects totaling $19.5 million. That totals about 7.7 million GGE, so gasoline gallon equivalent or diesel gallon equivalent in commercial production.

That covers renewable diesel, biodiesel, cellulosic ethanol, we've got a couple of great projects there, and then biogas.

For advanced technology manufacturing we made four awards totaling nearly $20 million. WrightSpeed, their electric truck company in Foster City, in the Bay Area; Zero Motorcycles, just a hoot of a company with great products that are being exported to Europe, now; Tesla, we've provided funding for their Model X line, manufacturing line; and then Quallion which is one of the premier lithium ion battery manufacturers and developers in the country.

So, this is also quite important because it reflects ongoing support to meeting the Governor's EV or ZEV mandates for this year.

Alternative fuels infrastructure; we talked about the round one NOPA in the springtime. We just finalized what we call the round two notice of proposed

award. Nearly $5 million, totaling over 1,000 charge points.

You can see we're getting into the fast charger space for the first time, 59 fleet charging points, 800 charge points for single- and multi-family dwellings, and then 118 for the workplace.

Continuing, we put $11.5 million into E85, so 125 stations should be constructed with that.

Somewhat to our surprise we had a series of categories that were under-subscribed. So, we had nearly $10 million allocated for CNG/LNG. We received $6.9 million in funding proposals.

Similarly, for biodiesel infrastructure, this is primarily bulk terminal storage and other ways to get the product at the wholesale phase down to retail consumers, underfunded on that.

And then for propane infrastructure, as I mentioned, we received zero dollars in proposals for that.

The draft hydrogen fueling solicitation, I think as many of you know who have followed us, we had three, and I would say our excellent public workshops this summer, both here in Sacramento and down at the South Coast facilities at Diamond Bar. Thank you, Dr. Miyasato for co-hosting that event.

We will have nearly $30 million available. We expect to fund from 12 to 15 stations, a critical milestone in meeting the projections laid out by the Fuel Cell Partnership and their roadmap, and we'll hear from Catherine Dunwoody later today on that.

We released a draft solicitation and comments were due this week. The staff is now going through those comments. We hope to release the solicitation soon, this fall.

Future solicitations, I've discussed hydrogen. Charging infrastructure; that's coming up, natural gas, more money will be coming up on that, too.

Medium-duty, heavy-duty vehicle technologies, again a critical space, we are considering doing a focus solicitation on electric trucks that can be retrofitted. So, there's something where there was a lot of interest and we've got a lot of good proposals from industry on that.

Regional planning; centers for alternative fuels and then emerging opportunities, so these are all categories from the '12-'13 Investment Plan.

And then, also, workforce development, it's not on this slide, we're quite pleased with the products and services we get through the Employment Training Panel and California EDD, so we will continue to put money

into those areas with the existing contracts.

Turning now to policy updates, this is not news to those of you in this room, 1455, from Senator Kehoe, fell two votes short so we will continue to work with our partners and stakeholders to reauthorize the program. That would have extended this program, as well as our sister program at the ARB, our quality improvement program, Peter Christensen's representing that program today, as well as the MOYA Programs.

There was a provision for CFO to get money into hydrogen funding so I'm sure we will talk about that quite a bit more as we go through this.

AB1900, this is a critical bill, this should help get more landfill gas and biogas into the California pipeline system.

What this bill will do will be to remove a lot of the barriers that currently exist, especially for landfill gas.

And what the bill does is requires the California PUC to work with a series of offices, so the Office of Environmental Hazard Assessment, CalRecycle, CalEPA and the Air Resources Board to collaborate on public health standards and other reporting requirements for this.

So, we're very excited to see the passage of

this. It's primarily for the RPS renewable power sector, but we see lots of crossover benefits as we continue to work to try to get biogas into the transportation system. I think most of you know it is the lowest carbon intensity value for anything commercially available in California right now for biofuels.

AB523, Valadao, this was signed into law. And as of July 1st of next year, 2013, we will no longer be allowed to provide funding for ethanol production from the edible portion of the cornstalk.

I do want to remind us that the plant remainder, so the stems, the cobs, the kernels and the oil still will be eligible for our funding and those are critical for making cellulosic ethanol and also biodiesel.

In terms of regulatory policy, some of you may recall we had a pretty lively discussion this past February on what we call the Section 3103 low carbon fuel standard discounting provision, that's part B of our 3103 regulations.

We had a lot of comment from industry that this is not appropriate and should be rescinded. The Commission will be starting a rulemaking on that. I am working with Michael Doughton, we hope to get something on the Business Meeting coming up here shortly.

Last, certainly not least, the Governor's Executive Order for zero emission vehicles, I think many of you are familiar with this as well, but it lays out milestones for 2015, 2020, and 2025. The 2025 goal is to hit 1.5 million light-duty electrics on the road, with appropriate supporting infrastructure and other support for that.

And Leslie Baroody is working quite diligently on this and it will be part of the action plan presentation on the September 28th summit.

COMMISSIONER PETERMAN: Jim, before you move on, I have one other one that we don't have on this list, which is that the State released its latest Bioenergy Action Plan, the 2012 Bioenergy Action Plan which looks at bioenergy resources for electricity and transportation.

It was a joint document by a number of agencies, including the California Public Utilities Commission, the Energy Commission, CalEPA, CalRecycle, Food and Ag.

And you can find that if you just type out "energy action plan" on our website. I believe you can also find it on the Governor's website, as well as any of the sister agencies. Thanks.

MR. MC KINNEY: Thank you Commissioner.

And for the '13-'14 Investment Plan, so as we

get underway this year, Commissioner Peterman already talked about Advisory Committee membership and environmental justice representation.

And again, I'm sure most of you are familiar with this but in many urban and rural parts of California we have communities that are disproportionately impacted from the emissions from our transportation sector. We think it critical that we get the right stakeholders at the table to represent those communities and those issues.

And specifically, again as you know, this is the port areas in Southern California and in the Bay Area, at Oakland, as well as the Southern San Joaquin Valley, both of which have some of the worst air quality in the country.

And we will have two more formal Advisory Committee meetings. And as you know, those tend to follow the release of the drafts, so one in December and then the other later in the spring.

Oh, we do have a slide on that. Here we go. So, December's the target for the release of the first staff draft Investment Plan.

Charles Smith, our incredible capable project manager, again will be leading the staff effort on that.

We proposed to have an Advisory Committee

meeting in January, followed by a second draft report in March.

The final draft -- and followed by a March Advisory Committee meeting. The final draft will be released in April and then adopted at the May Business Meeting.

And I am available to take questions just on this part, and just clarifying questions, please. Thank you.

MR. PEREZ: Hey, Jim, this is Pat again from the Energy Commission. Before we entertain questions what I'd like to do, now that we have a full house, I think this would be a good time to introduce the Advisory Committee members.

And let's begin with Bonnie and go around the table. And then we have several members, I believe, who are also participating on the line.

ADVISORY COMMITTEE MEMBER HOLMES-GEN: I'm Bonnie Holmes-Gen with the American Lung Association in California. I'm glad to be here, very glad to be extending outreach to Environmental Justice Committee and happy to help with any suggestions.

ADVISORY COMMITTEE MEMBER SHARPLESS: Jananne Sharpless, former Chair of the Air Resources Board, a former Commissioner of CEC.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE WILLIAMS: Clark Williams here on behalf of CalRecycle, filling in for Dr. Levenson, who sends his regrets he's not able to join you today.

ADVISORY COMMITTEE MEMBER MC MONIGLE: Hi, I'm Anne McMonigle, I'm with the California Labor Federation's Workforce and Economic Development Program.

ADVISORY COMMITTEE MEMBER KNIGHT: Ralph Knight, Napa Valley Unified School District and we're here with our yellow bus.

ADVISORY COMMITTEE MEMBER COOPER: I'm Peter Cooper with the Employment Training Panel.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE CHRISTENSEN: Good morning, Peter Christensen with the Air Resources Board. I manage ARB's AB118 program, filling in for Tom Cackette today. Both he and Eric White are out of town.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Tim Carmichael with the California Natural Gas Vehicle Coalition.

ADVISORY COMMITTEE MEMBER KAFFKA: Steve Kaffka with the California Biomass Collaborative and UC Davis.

ADVISORY COMMITTEE MEMBER GARLAND: Lesley Garland with Western Propane Gas Association.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE

DUNWOODY: I'm Catherine Dunwoody with the California Fuel Cell Partnership. I'm filling in for Justin Ward today. Thank you.

ADVISORY COMMITTEE MEMBER GERSHEN: Joe Gershen with the California Biodiesel Alliance.

ADVISORY COMMITTEE MEMBER TUTT: Eileen Tutt with the California Electric Transportation Coalition. I also really laud your efforts to include environmental justice and I have a couple of suggestions for later.

MR. PEREZ: Okay, great. And how about those of you who are participating online?

ADVISORY COMMITTEE MEMBER MUI: This is Simon Mui with Natural Resources Defense Council. Sorry I can't be there in person.

MR. PEREZ: Okay, thank you Simon.

ADVISORY COMMITTEE MEMBER BAKER-BRANSTETTER: Hi, this is Shannon Baker-Branstetter with Consumers Union.

MR. PEREZ: Good morning Shannon.

Anybody else?

ADVISORY COMMITTEE MEMBER ECKERLE: Hi, this is Tyson Eckerle with Energy Independence Now. I'm sorry I can't be there, also.

MR. PEREZ: Great, thank you Tyson.

Okay, I don't believe anybody else is online.

COMMISSIONER PETERMAN: And I'll say, first of all, great turnout and we promise that next time we'll have more microphones since we had such a good turnout.

And also, as a veteran of these water jugs, you have to watch the lid.

(Laughter)

COMMISSIONER PETERMAN: So, very carefully. Peter, I have been caught in that situation up there and it's not pleasant. Thanks.

MR. MC KINNEY: And then Commissioner, if I might, just before I turn over the microphone here, just from staff's perspective we also want to thank and acknowledge Pat Perez for his leadership over the last two years. He's incredibly knowledgeable. He's incredibly articulate in public.

And for those of you who haven't worked with him in private, he's got the most wicked sense of humor that just comes out of nowhere and helps keep things light.

So, Pat, we've just loved working with you and best of luck.

MR. PEREZ: Thank you, Jim.

Okay, with that I think we're ready and prepared to move into the market and technology review component of today's meeting.

COMMISSIONER PETERMAN: Pat, I know we did

interrupt the opportunity for members to ask questions about Jim's presentation in order to introduce the members. So, does anyone have a question about what Jim presented, anything clarifying you want to ask?

Mrs. Tutt?

ADVISORY COMMITTEE MEMBER TUTT: Just a couple of clarifying questions. On the slide 7 that says the funds will support the EV infrastructure project, really appreciate that. That's very, very needed. I know that was an over-subscribed program.

Is the EV infrastructure project, is that a specific project that's already been identified or is that for any infrastructure-related project plug-ins?

COMMISSIONER PETERMAN: It's not been finalized, yet, it's just acknowledging the fact that we have seen a lot of requests in the EV infrastructure area.

ADVISORY COMMITTEE MEMBER TUTT: Okay.

COMMISSIONER PETERMAN: There are some specific projects that have come up but we'll provide more information as it's finally decided.

ADVISORY COMMITTEE MEMBER TUTT: Perfect, that's exactly what I wanted to hear.

And then I just had one other question on slide 11, it looks like there's bout $5 million that is under-subscribed for -- you know, in addition to the

additional million that you've moved around. Does that come out of the haircut by any chance, or are you still going to continue to fund those categories for the same amount, even though they're under-subscribed?

COMMISSIONER PETERMAN: I'll take a stab at this and Pat, you probably have a more eloquent answer.

To the extent possible we like to keep funding in the same areas. So, the funding would be used for other projects. We're looking at what other opportunities there are in the relative infrastructure spaces.

And I think the expectation is that the 10 percent haircut will apply to all the funding categories, including that one, but that those monies will be used elsewhere. Does that make sense?

So, we're not going to -- the haircut is not after excluding this funding. It's been under-subscribed, but we think there are opportunities to have it be utilized.

ADVISORY COMMITTEE MEMBER TUTT: Okay, so the funding's going to stay where it's at, it's not going to be moved?

COMMISSIONER PETERMAN: For now, yes.

ADVISORY COMMITTEE MEMBER TUTT: Thank you.

COMMISSIONER PETERMAN: Pat, anything else on

that?

MR. PEREZ: Simply, our intent, wherever possible, is to maintain the funding in those particular categories. There may be needs down the road whereby we want to capture other opportunities, particularly if we don't receive any requests or applications for solicitations, and then we would have to notify everybody that we are proposing to make changes.

COMMISSIONER PETERMAN: And this is a good opportunity; we want to show you where the program is today so that when we do have our next Advisory Committee meeting on the Investment Plan, in December, there aren't surprises about what categories have been under- or over-subscribed, for example.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Tim Carmichael with the Natural Gas Vehicle Coalition. Thank you, Commissioner and Jim, I thought the presentation was good and it is really timely to get this update. Thank you.

A couple of questions; the haircut, is this really a haircut or is it more permanent than that? Because I know a portion of the funding that we have been working with is the Public's Good Charge piece, which at least right now is not continuing. So, is that this $10 million or is this a budget, a lower budget $10

million?

MR. PEREZ: Okay. Yes, certainly what we have here with respect to the haircut, this resulted, as many of you are aware that the Governor, in his budget, blue-penciled that $3 million of the proposed $10 million for this program to the State Parks and Recreation Fund.

COMMISSIONER PETERMAN: The $10 million initially.

MR. PEREZ: Yeah. So, essentially where that $10 million comes from, it's a combination of things. One, it's the revenue that's coming into this fund is actually declining.

There's also been a General Fund transfer, $8.25 million that is continuing. It started with the '09-'10 period and it has continued. We don't know where that will go in the future so we have that.

And then in combination with the Governor's blue pencil, it's roughly $10 million. So, we're proposing --

COMMISSIONER PETERMAN: Pat, I'm going to have to pause you, I did not even understand the explanation, myself, and I'm somewhat familiar with it.

MR. PEREZ: Okay.

COMMISSIONER PETERMAN: So, I want to make sure that there's a lot of things to follow that everyone's

up to speed. So, it was my understanding that there was a transfer to Parks and Rec as part of the budget --

MR. PEREZ: Proposal.

COMMISSIONER PETERMAN: -- proposal for $10 million.

MR. PEREZ: Yeah.

COMMISSIONER PETERMAN: And so that's where that $10 million is. Although there were -- and as, Pat, you're speaking to, there's kind of a blue pencil, which I'm a little less familiar with that process, but there was -- that amount was reduced by the Governor to $3 million, but not actually followed through to the budget. So, we do have to take a $10 million cut to this investment plan because of that transfer to Park and Recs, so that's what the $10 million speaks to.

MR. PEREZ: Uh-hum.

COMMISSIONER PETERMAN: And Pat can clarify if that's not correct.

And then Pat's touching upon some larger issues about there is under-collection revenue. Now, as you all know, we fund this program through fees on voter registrations, car registrations, smog checks, and folks are driving less.

And so far we have not had to do significant cutting, but these are the types of issues that we're

going to start bringing to you if we start seeing, to your point I think, Tim, is there a trend here.

Now, is this continuously going to be $90 million or $80 million, you've discussed that as part of the Public Goods charge there was some money transferred as well, available through the PIER Program, which will not continue.

So, again, we're looking at trying to assess where will kind of a steady state for the program be? And that's something we can come speak to the Advisory Group about at the next meeting, as well.

MR. PEREZ: And then I just want to echo what the Commissioner just stated in terms of the revenue that is coming in through these four funding sources. It has actually been reduced over the last couple of years so we're not getting that full entitlement that we once had.

So, we'll need to revisit this after the budget numbers come out and the revenue, you know, amounts are finally communicated to us, and then we'll come back to this Advisory Committee and say here's what we need to consider for potential cuts down the road.

COMMISSIONER PETERMAN: As you all are aware, as well, we have a two-year encumbrance period for the funding and so there are projects that we pay in

arrears. So, sometimes there's money that's allocated to the projects that then returns to the fund. If it's not returned during a time period in which we can reallocate it within the Investment Plan then, and Pat you can tell me the exact language, but it goes back into the General 118 Fund and the Legislature can then provide that money as well.

MR. PEREZ: Correct.

COMMISSIONER PETERMAN: So, we have some expectations around the revenues increasing or not dropping considerably. But again, it's something we're looking at and we'll get back to everyone on.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Two thoughts. One is I'm assuming that the transfer to Parks and Recs happened before they found their pot of gold, their hidden pot of gold. And if that's accurate, I think if CEC's going to have a further discussion about maybe asking for that money back, I'd like to be part of that. And I think that a lot of members of the Committee might like to be part of that.

Because sometimes it's easier for us to go ask for something than it is for you guys directly to ask.

The second thought is CEC has taken some bumps from the Legislature, putting it mildly. But I think going forward it's a good idea for this agency to be

more proactive in defending this program in asking for more money for this program.

The agency's been a bit timid and with some reason, but I think going forward budgets are going to be tight and if we don't fight for the money, we're going to lose to others that are fighting for the money.

And I think that coming into 2013 that's a lens or an approach I would encourage.

One other quick question on the review of the draft plan; Commissioner Peterman you said December and I thought December because that's when the draft's coming out, but the schedule here says January. And I'm just wondering, I can't remember exactly how we did it last year, do you actually submit a draft plan?

I know you've got an early January deadline, do you actually submit a draft plan before we have the Committee meeting to talk about it?

MR. PEREZ: Historically, we have. And on the draft plan, this is simply going to the Legislature as required, you know, under the legislation that was passed a couple of years ago.

But we will be taking input prior to that draft plan being delivered, which I believe is due by mid-January to the Legislature, and it's only a draft.

And so we'll hold additional workshops following

the submittal of that draft to refine it, like we did with the previous plan.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Okay, I really think it's a good idea to at least have an opportunity for Committee members and others to give feedback before it's submitted to the Administration and I'm glad that's part of your plan here. Thank you.

COMMISSIONER PETERMAN: And I will say, Pat, if I remember correctly, we actually did have our Advisory Committee meeting last before we submitted the plan, there just wasn't much time for turnaround. And so to the extent we can build in more time, if that's possible, we will do.

Being aware of everyone's schedules in December and that December can be a little hectic to get a meeting in place, but if we're able to do it by the end of the year, we will.

And then regarding your other point, I think what's great about the 118 program is that we have a really diverse stakeholder group. And we really do rely on you as a stakeholder group to keep the Legislature and your members aware of all the things that are going on in the program, and to collectively work to sell its benefits.

And as you all know, we talked last meeting

about -- we put out a benefits report. I think there's improvement that can be done in the presentation and the information, and we'll be looking to work with all of you over this year about how we get the word out more about what the program is doing.

Anyone else from the Advisory Committee, any questions about Jim's presentation?

ADVISORY COMMITTEE MEMBER SHEARS: I don't know if people can hear me but this is John Shears, Advisory Committee member.

COMMISSIONER PETERMAN: We can hear you.

ADVISORY COMMITTEE MEMBER SHEARS: I'm sorry, I had a bad connection earlier and so I had to jump off and try to reconnect, so just to let everyone know that I am in attendance.

COMMISSIONER PETERMAN: Welcome John.

Bonnie?

ADVISORY COMMITTEE MEMBER HOLMES-GEN: Yes, thank you Commissioner Peterman. And I do also agree with the continuing need to package the successes of the program and looking how we can better communicate that to the Legislature and the public, and would like to keep that on the agenda for these meetings, I think that's very important.

I just wanted to ask if I could get just a

little more detail about the hydrogen funding solicitation in terms of what number of stations would be expected over what timeframe with that $29.7 million?

MR. MC KINNEY: Yeah, so Jim McKinney here. Yeah, I thought I said this but perhaps I did not. We do have it split in two sections, so the first would be about $19 million, with $10 million to follow shortly thereafter. We're expecting about ten stations with the first $19 million.

We also have it set up so we would allocate about $1.5 million per station, so then we would get another six or seven out of the remaining $10 million.

And we really do expect for these to fund a lot of what we call the core cluster, high-volume stations in key ownership, projected ownership areas both in Southern California and Northern California.

ADVISORY COMMITTEE MEMBER GERSHEN: Hi, this is Joe Gershen with the California Biodiesel Alliance. I see in slide 11 there was under-subscription of the, I think the biodiesel infrastructure. And I agree with Commissioner Peterman who said there really does need to be better communication because I know folks in our industry were completely unaware of it, and so that's really why it was under-subscribed.

So, I think it is important to have better

communication between the Commission and industry happen. Thanks.

COMMISSIONER PETERMAN: And Joe, if you have suggestions, I mean we have the list serve information on the websites, there's a contact e-mail, if there's somewhere where we should just be getting here's how to contact the Energy Commission because partly it's just getting on the solicitation list.

Because as you see there's so many ones happening but if people aren't hearing about the opportunities and there's actually a need, then we want to make sure we reach them.

ADVISORY COMMITTEE MEMBER GERSHEN: I think that's part of the reason I'm here, I think, is to try to help that communication open up with our industry.

COMMISSIONER PETERMAN: Great, glad to have you join us.

ADVISORY COMMITTEE MEMBER GERSHEN: Thank you.

MR. PEREZ: Okay, any other questions?

ADVISORY COMMITTEE MEMBER REPRESENTATIVE WILLIAMS: This is Clark Williams from CalRecycle. Thank you for the presentation, Jim, very helpful.

On slide 9 I saw you mentioned you're expecting to release the round two NOPA for biofuel production facilities. I'm just curious if you have any more

details on the timing for release of that NOPA?

MR. MC KINNEY: You know, Bill Kinney, our project manager, has been working to finalize this and it is in final review, say, at the executive office level here, so we are anticipating getting something out within the next month.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE WILLIAMS: Great, thank you for that.

COMMISSIONER PETERMAN: Bonnie, did you have another question?

ADVISORY COMMITTEE MEMBER HOLMES-GEN: No, I'm good.

COMMISSIONER PETERMAN: Okay, anyone on the line, any Advisory Committee members on the line regarding Jim's presentation?

All right, hearing none I think we can move on. We're slightly ahead of schedule, which is great for us because I'm sure we'll be behind soon enough.

(Laughter)

MR. PEREZ: Great. Okay, we'll move on to market and technology review beginning with Peter Cooper, California Employment Training Panel on Workforce Training. Welcome Peter.

ADVISORY COMMITTEE MEMBER COOPER: All right, well, thank you Commissioner Peterman, thank you for

giving me the opportunity to give a brief update on the status on the -- sorry, on the status of ETP funding.

I have been at ETP for about three months, now, and Brian McMahon has moved onward and upward to the labor agencies, that we're very excited about.

Looking at ETP projects, I do really think that -- I think that there's a great opportunity for ETP to be something that can be discussed with legislators and shown as a way that AB118 funding is working well.

So, I'm just going to give you a brief overview of where we are with our funding.

First of all, I just want to give you an overview of ETP, the Employment Training Panel is a joint business/labor program funding training that supports creation and retention of high-wage, high-skilled jobs, so it really is linked to good jobs. It was created back in 1983.

The ETP model, which is very unique for much of the workforce development field, is a pay-for-performance model, meaning that contractors are not paid until after training has occurred and workers have been placed in high-paying jobs.

ETP has had a partnership with AB118, with the Energy Commission program for the past two and a half to three years, it started in 2010. And part of this

includes frequent reporting back to the AB188, the Energy Commission staff about where we are with our marketing and with our training funds.

Just a little bit about our program before I give you kind of an update on our funding. You should know that we fund through two different formats. One is directly with employers and the other is through an umbrella structure, we call it multiple employer contracts. I'll get into this a little bit more, later.

Funding is focused at the incumbent workers, although we do have some funding available for unemployed workers coming into employment, so job creation aspects.

A lot of what ETP does is makes employers in the State more competitive so they don't have to lay off workers, they can really be globally competitive.

One of the way we do this is our funding is fairly flexible. We have a number of different modes for supporting training, whether it's on-the-job training or class lab, et cetera.

For the funding status where are we right now? Well, during the last three years we have -- we have approved 22 ETP contracts. This covers 6,630 trainees have entered into training. A number of them are still in training.

And ETP has received $10.3 million thus far. We're awaiting approval for an additional $2 million.

Of that amount, $7.2 million has been contracted out. Of that $7.2 million, $1 million is for what we call job creation, new jobs.

Just to give you an idea of what kind of training the population of the trainees is, we're doing a lot of training, funding for electricians, maintenance, fleet maintenance mechanic services, production. We fund a program at Tesla.

Some of the sectors are biofuels and a number of the other alternative fuel categories.

One interesting category that we started funding recently is first responder and this is funding for firefighters or EMTs that come to an accident scene in which a vehicle that has alternative fuel as part of its -- the way its function is, part of it, they have to have special training to be prepared for that.

I just wanted to give you a couple, a flavor of some of the contracts, as I said we have 22. Most of them are still going on. Our contracts run for a two-year period. After the two years workers have to be placed for 90 days at a job, at a specific wage level.

So, the Cal Labor Fed. has a -- is administering a multi-employer contract with public sector transit

unions and transit agencies. This includes L.A., Sacramento, and Santa Clara transit agencies.

And this really is an interesting example because in this sector there's been, you know, an aging population. A number of a lot of the workforce has retired and there's really a lack of advanced skills needed for maintaining some of the new equipment that they have in the alternative fuels area. This includes CNG hybrid drive training, clean diesel, electric rail and others.

Another interesting one I just wanted to bring up, the California and Nevada Labor Management Cooperative Committee, it's a long name, this is the electricians with IBEW working with the National Electrician Contractors Association, NECA.

And, really, this is about installing the EV infrastructure, the charging stations. So, this is a wonderful model that is tied to new certification for these electricians.

And the third MEC model that I wanted to mention, because we're seeing more of these with the community college district, our marketing staff of two is certainly not enough, but they have been very productive working with community colleges to develop training for maintenance of electric vehicles, CNG

hybrid fleets. And we're seeing more of this kind of application come in.

Some of the single-employer contracts that we have seen and we've funded recently, Kings Canyon Unified School District. This is for maintenance of CNG school buses.

The UPS contract, this is their new fleets, the needs they have for training there, and Tesla, where we've been training frontline workers for production of the Model S.

There are many more, obviously, that I don't have time to go into in the details. I do have the details and would be happy to share them with anybody that would like to come up and discuss it with me after the presentation.

I would like to speak, briefly, about some of the challenges and on some of the future projects we see on the horizon. One of the main challenges that we face is that our funds -- you know, I mentioned that we have a pay-for-performance model and so if training does not take place in a contract, if they only are able to earn, let's say, 50 to 60 percent of the amount that's contracted for, the remaining amount is carried over into the next year. It's being encumbered by the ETP, so those dollars can then be reinvested to new training

contracts.

But in order for us to go through that process, we have to have the authority for spending the dollars that are rolled over. And this process, through the Department of Finance and EDD has just been taking too long, two to three months, and it's been causing some difficulties with training entities that really need to get started.

You know, I mentioned the Cal Labor Fed's. contract with the public transit agencies. They're interested in coming in with another contract for a million dollars.

They've been the most successful project that we've been funding. They want to go in for another round, they want to get started in October, but we only approve contracts at our monthly panel meetings and we have to have the spending authority in order for our panel to even bring up the new contract proposal.

So, this has been a hindrance and I look forward to working with Energy Commission staff in figuring out how to move forward on that front.

Just one or two words about some of the future projects coming up; the IBEW and NECA project, that was the EV infrastructure, they're going to be seeking secondary curriculum and will go through our amendment

process to get additional funding.

As I mentioned, the transit program is going to come back in for another project in the neighborhood of a million dollars.

And a number of community colleges will have more regional projects focusing on local training needs, mostly fleet conversion and some first responder training. These are in the neighborhood of $200,000 to $300,000 each.

And then just two more that I wanted to mention, BIOCOM Institute is a trade association that is going to be doing biofuel production and commercialization training that is coming in for a contract this fall.

And EV International will be coming in for a contract for medium- and heavy-duty EV manufacturing; they're expanding in the Stockton area. That's a smaller one, 20 trainees at $20,000.

And lastly, my last word would be as we look to the future with the 118 funding I have a question, an area that I would like the advisors to discuss, which is if AB118 funding could be used for some of the high speed rail infrastructure.

We know that certain training will be required for that infrastructure. It could be either, such as electric vehicle charging stations at the locations

where the high speed rail will have stations, or it could be other components of the high speed rail program going forward in out years.

So, that's just a question to leave you with and for further discussion. And that concludes my remarks for now. Thank you.

COMMISSIONER PETERMAN: Thank you, Peter. If you wouldn't mind staying there for one second, does anyone from the Advisory Committee have a question for Peter?

Jane?

ADVISORY COMMITTEE MEMBER SHARPLESS: Peter, thank you. It raises a lot of questions but I'm not going to go into all the questions I have. I just want to make sure I heard you correctly, I wrote down the figure 6,000; 6,000 is the number of people you currently have in the program being trained. Some of them have been placed, but a lot of them are still in training.

And so is that 6,000 the number that you would give, if you were explaining the program, that has been impacted by the 118 funding exclusively?

ADVISORY COMMITTEE MEMBER COOPER: Six thousand is a good -- it's actually 6,630 have entered into training. They have been impacted by the program to one

degree or another. Some of them have gone through all the training that's required to pull down the funding.

Some of them may have dropped out of the program because they got a job and did something else.

And some of them are -- a lot of them are still kind of in the process. As I was mentioning, we've been doing this through 2010. We have a two-year program. We only have two or three that have actually closed out their contracts.

ADVISORY COMMITTEE MEMBER SHARPLESS: Uh-hum.

ADVISORY COMMITTEE MEMBER COOPER: So, a lot of them are coming up for finishing their programs the end of this year, the beginning of next year.

So, yes, I would say that 6,630 have received some training from dollars from this program.

ADVISORY COMMITTEE MEMBER SHARPLESS: Since 2010?

ADVISORY COMMITTEE MEMBER COOPER: Yes.

ADVISORY COMMITTEE MEMBER SHARPLESS: Since 2010. Okay, thank you.

COMMISSIONER PETERMAN: Ralph?

ADVISORY COMMITTEE MEMBER KNIGHT: Peter, I just want to commend you on your talk about the training for first responders. A lot of you may know that I'm out parading my green bus around to try to get the green

rails and green bumpers on that bus.

So far I'm running head on with CHP, that I don't think feels the importance of first responder to those kids on that bus, or themselves, either one. And that's what we're trying to explain to them, that I think the first responder training is a real necessity, whether it be natural gas, whether it be propane, electric, hybrid electric, any of those fuels, that those first responders need to know what they're walking up to.

Because within a matter of seconds saws are starting to chop into the side of a bus and that 300-volt wire running through that flame, or the natural gas that's got a slow leak on a tank that's damaged, or whatever, could be a catastrophic picture out there that we don't want to see in a school bus by any means at all.

I know that the State Fire Marshall here does a lot of training as far as vehicles are concerned; they have an excellent program going on.

But when I talked to their training officer that puts the trainings on, when I mention school bus it's like, wow, we never thought about that.

Come on, this is California, where's most of the alternative fueled school buses at? In the State of

California.

And so it's -- we're just trying to -- I'm going to go through a little bit of material before we're done today. We're just trying to educate CHP that I think that it is an important situation for the safety of our kids to be transported to and from school, that it's handled right.

ADVISORY COMMITTEE MEMBER COOPER: Yeah, thank you. I certainly agree with that and I think it's an area that we can and should be expanding in.

As I mentioned, it's an area that some of the community colleges are interested in. And just from a program point of view, going through community colleges and mostly an employer contract model it makes a lot more sense for getting the dollars out where they need to be and not sitting, you know, unused.

COMMISSIONER PETERMAN: Thank you. I think we have time for one final question, Anne?

ADVISORY COMMITTEE MEMBER MC MONIGLE: Hi, Anne McMonigle, California Labor Federation.

Just a question, I don't know if it's directed directly at Cooper, I don't want to make him have to field this on his own, but I pose it to the Committee.

My question is in general about the workforce needs that AB118 funds could address, and I was

wondering if any career mapping or industry mapping has already been done that shows projections of potential careers that could be gained and what -- not necessarily what sectors, but what those jobs would look like, what the training requirements for those jobs would be?

And I'm interested if any of that work has been done and, if not, I'm curious if the Committee has looked at maybe partnering with EDD's LMID Department to go ahead and look at this kind of career mapping?

For those of us who work in job training, this kind information is really key for us. And so that's my question, so it's a heavy one so I'm not sure if --

MR. MC KINNEY: Yeah, it's a good question, Jim McKinney here.

We've talked primarily about ETP this morning on training. There are two other components of our workforce training funding and program at the Commission, so one is EDD.

The other is the Community College's Chancellor's Office. And some of the research you alluded to is part of the deliverables from that organization.

ADVISORY COMMITTEE MEMBER MC MONIGLE: From the community college?

MR. MC KINNEY: Yeah.

ADVISORY COMMITTEE MEMBER MC MONIGLE: Is that the CCEOC, is that their --

MR. MC KINNEY: Before CC -- CCOC, I believe we call it.

Yeah, and then I don't know if Dave Nichols is here, if he would have anything to add. No, he's monitoring upstairs, I think, so does that answer your question?

ADVISORY COMMITTEE MEMBER MC MONIGLE: Yes, thank you.

ADVISORY COMMITTEE MEMBER COOPER: And I wanted to add, too, that I think that might be an area with relationship to the possible needs of high speed rail that might be explored. You know, what are the needs, so we have a better understanding of that and if it makes sense at all for this funding, I don't know.

But additionally to that, I think that the Energy Commission and the 118 program should continue to stay involved with the California Workforce Investment Board as they kind of reconstitute their board and their Green Collar Jobs Council. You know, what role does 118 funding have in those discussions?

COMMISSIONER PETERMAN: Thank you. And Jim, your comment reminded me of the fact that it's -- you have to make sure everyone's aware that we're talking

about the various technologies and fuels today, and we've asked folks to come speak. They're going to provide a perspective. They won't be able to cover everything that the Commission's doing in these areas or even necessarily represent all the diverse stakeholders in those subfields.

So, we're not holding you to the task, for example, of speaking for everyone on biofuels or natural gas, but those questions are good.

And, really, if there's a request for additional information, then we can connect folks with the appropriate staff who are working on the broader set of contracts. Thank you.

ADVISORY COMMITTEE MEMBER COOPER: And here's my contact information, as well as our marketing specialist. I'd be happy to speak with or meet with anybody about these issues. Thank you.

COMMISSIONER PETERMAN: Thank you.

Next we have Larry Rillera, from the Energy Commission staff, who's going to talk about manufacturing.

MR. RILLERA: Good morning everyone, Larry Rillera with the Division of Fuels and Transportation.

I will address in a little finer granularity the manufacturing, the two manufacturing solicitations we

have issued through the program and then provide a couple of thoughts with respect to impacts on manufacturing, vehicle manufacturing outside of the Commission.

The first solicitation we had about 23 applications. You see the spread on the technology dominated mostly by electric vehicles, the vehicle sector, and this is across the various stages, pre-development work, early commercial and some commercial ventures.

I would note that we also had applications for natural gas and for hydrogen, as well.

Eleven of the projects were funded for almost $25 million. We've spent down or expended about a third of that in funding.

I would also note that there was about a one-to-one match funding at this time for this solicitation, meaning $25 million was approved and about $25 million was also leveraged in match funding.

This solicitation in terms of its hallmark had a lot of pre-development focus to it, which differs from the second solicitation.

The second solicitation was issued earlier this year and we had more of a focus on pre-commercial/commercial, a focus on the assets, the

equipment that would be used to establish or expand the manufacturing line; we received about 15 applications.

Of importance, I would note that we had a significant increase, even though the numbers are small, in the non-EV applications, almost 30 percent.

This is still a live application and we've -- excuse me, a live solicitation and we've awarded four projects so far for about $20 million.

The other significant item I would note would be the match funding on the magnitude of one-two-three. In the first solicitation it was about one-to-one. And those projects will be coming forward for formal approval as the agreements are being completed.

A couple of observation staff has outside of the solicitations that impact vehicle manufacturing and California, nationally, is that some of the applicants have applied for the SB71 sales tax exemption program through the State Treasurer's Office.

This is a sales and tax exemption on your fixed asset acquisitions for your manufacturing line. It has a magnitude of a return between 9 and 10 percent so companies that have a portion of their assets can see a return on the back end of about that much.

Three of the companies are impacted or have applied and received approval. Expect more as the

second -- as the results from the second solicitation, manufacturing solicitation go forward.

The other is the Department of Energy's Alternative Vehicle and Technology Manufacturing Loan Guarantee Program.

There were over 100 applications that were submitted under this federal loan guarantee program. Five of those were awarded; one of those was a California-based company, to the tune of about $465 million.

The underwriting at the federal level is very, very strong, it's consistent with commercial lending standards.

I would also articulate that $25 billion, with a "b", was appropriated for this program. This is the Vehicle Manufacturing Program and not the 1703 program or the 1705 program.

Of the five projects I mentioned, about $6 billion was awarded and closed, leaving a balance of about $19, so there's a strong capacity for some of these companies as we see go through the 118 program should they scale and hit it on the demand side, that might be in the market for additional capital.

And that concludes my comments.

COMMISSIONER PETERMAN: Thank you, Larry. Does

anyone have any questions for Larry? Jan?

ADVISORY COMMITTEE MEMBER SHARPLESS: Could I just ask you what the timing on the $19 billion is; do you know, for the feds?

MR. RILLERA: I don't. It still has quite a few more years in appropriation authority.

ADVISORY COMMITTEE MEMBER SHARPLESS: So, it could be five?

MR. RILLERA: Up to five, I believe, yes.

ADVISORY COMMITTEE MEMBER SHARPLESS: Up to five years.

COMMISSIONER PETERMAN: I know we have some Advisory Committee members on the line. So, does anyone have a question for Larry on the phone? And then we'll turn to Steve, in the room.

Hearing none, Steve, why don't you ask your question and if anyone else on the line has a question we can --

ADVISORY COMMITTEE MEMBER KAFFKA: Yeah, this is Steve Kaffka. Larry, you mentioned a California company that's been funded through the DOE program. Can you say which one that is?

MR. RILLERA: Yes, that is Tesla.

COMMISSIONER PETERMAN: Anyone else? Great. Well, we've got the audience here, as well. Anyone from

the public or the audience want to ask a question about the manufacturing solicitations?

Or just does anyone else want to add a comment or appreciate Larry stepping up and giving a presentation? I think all our manufacturers are out there making stuff and so they couldn't show up today, but we appreciate his summary.

Anyone in the audience?

Okay, hearing from no one, let's move on to our next speaker. Thank you, Larry.

MR. PEREZ: Okay, biofuels production and distribution, I'd like to welcome Joe Gershen, California Biodiesel Alliance.

And then he will be followed by Tim Olson.

ADVISORY COMMITTEE MEMBER GERSHEN: Thanks for having me, my name is Joe Gershen. I am the newest member, I think, of the Advisory Committee. I represent the California Biodiesel Alliance, which is a not-for-profit trade association promoting high quality renewable biodiesel use and production in California.

CBA represents California producers, feedstock providers, marketers and other stakeholders in the industry.

The purpose of this document is to reintroduce the Energy Commission and the Advisory Committee to the

biodiesel industry and its potential to expand volumes, and to help California meet its 2020 goals and 2050 vision.

Based on the Commission's own calculation from the 2011 IEPR Benefits Section, biodiesel use in California provides 34.7 percent of the results, more than all other modalities and, yet, has only received 4.8 percent of the funding.

In comparison, the cost benefit analysis of the numbers from that same section of the 2011 IEPR shows that other programs were 9 to 20 times more expensive in achieving the same goals.

Biodiesel is the lowest cost commercially available, low carbon fuel on the line today. It's produced from diverse low-impact feed stocks that are grown in California and create in-state jobs.

All engine manufacturers support the use of at least B5, which is five percent, and there's no NOx increase in new diesels.

CBA has conducted in-depth industry-wide surveys and reviewed Energy Commission date on biodiesel versus other technologies that have received funding through this program.

We've found that the California biodiesel and diesel substitutes industry has been grossly under-

funded to date by the program, especially relative to biodiesel's further potential to meet stated program goals of displacing petroleum, reducing in-house gases, reducing exhaust emissions, and creating and maintaining jobs in California.

Based on the IEPR benefits metric, biodiesel provides the greatest return on taxpayer dollars invested, yet receives the least funding support.

As required under AB109, we urge the Commission to reexamine and update its analyses. We recommend that an objective, metric-based approach be developed that is transparent to all, especially the AB118 Advisory Committee.

By now the Commission must have enough information on each technology's projected performance to present objective and analytical measures to enlighten the decision making used in the funding allocation process.

There are currently eight functioning biodiesel production facilities in California with a combined capacity of 46 million gallons per year.

These green businesses directly provide approximately 150 family-supporting jobs in the State. As of June of this year, these plants expect to produce 26 million gallons during calendar year 2012.

In our survey members were asked what the industry needs in order to expand biodiesel production and utilization. In order of importance CBA member priorities are, first, grants and loan guarantees to expand the increase of in-state ultralow carbon production.

Second, development of plentiful and inexpensive low-impact feedstocks.

And third, grants and loan guarantees for new blending and storage of petroleum distributers and terminal racks.

The term ultralow carbon intensity is used here to signify a CI value, carbon intensity value of 20 or less. Ultralow carbon intensity includes a basket of existing, approved biofuel pathways under the LCFS ranging from 5.9 to 18.44, and provides room for the inclusion of new technology in feedstock pathways.

It's not a defined legislative or regulatory standard, it's an objective use for comparison of approaches that will facilitate compliance with the LCFS.

In 2012, 66 percent of California production was ULCI biodiesel. These gallons represent between 83 and 94 percent greenhouse gas production compared to petroleum diesel.

Approximately 200 gallons per year, which represents about five percent blend, can be absorbed at fuel blends compatible with existing vehicles and retail infrastructure.

This week the Obama Administration announced that the 2013 renewable fuel standard biodiesel compliance volume was set at 1.28 billion gallons.

The ARB has stated that obligated parties are incentivized to blend in California where they can essentially comply with two obligations at once, the Federal Renewable Fuel Standard and the California Low Carbon Fuel Standard.

This will help significantly grow biodiesel volumes in the State, but we must support this with increased program funding for in-state, ultralow carbon intensity production.

A recent review of low-impact feedstock availability concludes that there is a potential to substantially increase these feedstocks to meet higher demand, creating more ultralow carbon intensity biodiesel and green collar California jobs.

But current supplies are insufficient and more funding is necessary. Considering, one, the availability of current ULCI feedstock types; two, ongoing development of new ULCI feedstock types, such as

algae and; three, the tremendous greenhouse gas CI value reduction and petroleum displacement benefits, California production of ULCI biodiesel should be increased to meet both the mid-term and longer-term goals of LCFS and the AB118.

As we compare biodiesel to other fuels and technologies we wonder what metrics were used to justify investment levels in other modalities. We understand that cost effectiveness is not the only decision factor.

However, evidence to date and a review of past meeting transcripts indicate that cost effectiveness has not been used or applied to this program.

Should this not be used in some way to guide, not dictate, but guide the funding allocation process? We think so.

Fuel cell vehicles and electric vehicles are estimated to displace 425 gallons of petroleum fuel per vehicle, per year.

In this direct comparison, a 200-million gallon B5 deployment in California is equivalent to putting 470,588 fuel cell vehicles or EVs on the road, in the State.

Although hybridcars.com reported that only 7,146 EVs were sold in the first seven months of 2012 nationwide, if we optimistically assume 10,000 EVs and

fuel cell vehicles will enter the California each year over the next several years, which is very optimistic, it would take more than 47 years to accomplish the equivalent petroleum displacement and carbon reduction that ultralow carbon intensity biodiesel blended to B5 in California can achieve near term.

A similar comparison with heavy-duty natural gas vehicles shows that a B5 implementation in California would be equivalent to putting 28,571 heavy-duty natural gas vehicles on the road, which would take more than 22 years to accomplish, otherwise.

And from a greenhouse gas reduction perspective, that's equivalent to placing 127,819 heavy-duty natural gas vehicles on the road.

To put this into very real-world perspective, this year the California biodiesel industry's estimated production of 26 million gallons is equivalent to putting over 61,000 EVs or fuel cell vehicles, or over 3,700 heavy-duty natural gas vehicles on the road in California.

The CBA recommends that in-state biodiesel production, feedstock and infrastructure development projects receive $24 million in each of the next two funding cycles to be allocated as shown here.

In order to achieve this funding increase, we

recommend that a 20 percent incremental amount of funding be reallocated to biodiesel from the other fuels and technologies funding above the parity line.

With this adjustment biodiesel is still ten percent under-funded compared to its performance metrics and meeting stated ARFVTP goals, but at this funding level the CEC still retains the ability to fund innovative programs that are not yet justified by the metrics.

We also would like to work with CEC to devise and implement a policy for all program opportunity notices to require all proposals to contain a dollar-per-metric unit improvement analysis.

In conclusion, biodiesel can displace 200 million gallons a year of petroleum diesel, at B5, in the near term. This would satisfy diesel LCFS greenhouse gas reduction targets through 2016. It's equivalent to putting almost 500,000 EVs or fuel cell vehicles on California roads, or its equivalent to putting over 28,000 heavy-duty natural gas vehicles on California roads, and this would take decades for the other modalities to accomplish.

Our energy and climate issues need multiple solutions, we absolutely recognize that. Most effective solution for long-haul trucking is biodiesel in the

near, mid, and long term. This is an enormous segment and I don't know if it's been adequately addressed.

And also, all of this is going out when you review the CEC's own data.

What we need going forward is an objective, metric-guided approach for funding.

And I'd like to leave you with the fact that, you know, biodiesel creates jobs. Jobs is a big deal right now and I think it always is.

This proposal we've put forward would create approximately 500 new production jobs, not including all the ancillary employment that goes with those jobs, and up to 10,000 new agricultural jobs in feedstock cultivation, harvesting and processing. And these jobs are generated in the highest State unemployment areas.

These are new jobs, growing new crops on under-utilized land. Thanks.

COMMISSIONER PETERMAN: Thank you. Joe, I have a question or two. Joe's recently joined our Advisory Board partly because the perspective of biodiesel, we have not heard as much from that industry, and so I appreciate the background, as well as the information.

And I'll assume you'll also give the presentation to staff because you made a lot of suggestions in there.

You put forth a number of numbers in terms of what the industry's going to need going forward. What are those numbers based on, did you do a survey, an analysis?

ADVISORY COMMITTEE MEMBER GERSHEN: Yes, we did an in-depth survey with our industry and, you know, as I said almost -- I think all but one of the producers is ultralow carbon intensity biodiesel producers. And we surveyed them pretty directly to see what we needed to do, de-bottlenecking to expand production in the State. And this was an extensive series of surveys, I think we did two or three of them, and parsed that data and came back, and got comments to make sure that we were essentially reflecting almost exactly what everyone wanted to do. So, it's a pretty good cross section of responses from our industry in the State.

COMMISSIONER PETERMAN: And is that the information that builds up to those funding needs is that available publicly somewhere?

ADVISORY COMMITTEE MEMBER GERSHEN: Yeah.

COMMISSIONER PETERMAN: Will you be able to submit that to the 118 docket for other Advisory --

ADVISORY COMMITTEE MEMBER GERSHEN: I did submit this, I submitted a 9-page white paper that this presentation basically reflects. I tried to get it all

in, in ten minutes. I asked for more, but I understand there's not enough time.

COMMISSIONER PETERMAN: Well, we appreciate you submitting the white paper. And that's what we want to do is just make sure folks are aware of where they can get more information.

ADVISORY COMMITTEE MEMBER GERSHEN: Yes, it's all in there and it's much more detailed.

COMMISSIONER PETERMAN: Other questions? Jan? You're quick to the draw.

ADVISORY COMMITTEE MEMBER SHARPLESS: I, too, appreciate this, I think it's a lot of food for thought. It raises questions as well, some of which our Chair just raised.

But I think your focus in terms of meeting California goals will focus mainly on energy and meeting energy demand in the transportation sector, and also global climate change goals.

ADVISORY COMMITTEE MEMBER GERSHEN: Yes.

ADVISORY COMMITTEE MEMBER SHARPLESS: Does it assume that in supplying this fuel it's also meeting the low carbon fuel goal and some of the lower out-year air quality goals?

For instance, the South Coast Air District is looking at basically taking all of their transportation

vehicles down to zero emissions.

So, where do you fit on that scale?

ADVISORY COMMITTEE MEMBER GERSHEN: I think we fit, and I'd like to also take these questions back to our board, but a short answer that I can certainly expand on later would be that, you know, in the near and midterm, you know, we're still going through -- I think by 2016 or 2017 we're anticipated to be at 4 billion gallons of diesel throughput in the State, so we address that pretty directly with ultralow carbon intensity, and I think I tried to cover that. It's in even more detail in the white paper.

But certainly in near and midterm and, frankly, in the long term, too, I think this addresses those goals pretty well. Because I don't think anytime real soon we're going to go to zero emissions in these diesel vehicles.

I mean you have this long-haul trucking sector that really needs to be addressed and they're using diesel fuel. And this is a great way -- I mean I know there's been some talk about on a per-vehicle basis how does this work?

And in my opinion that might be a little -- I don't know if misguided is the right word, but if you look at the overall sum that we can get to at just a

five percent blend, and I'm not suggesting we necessarily stop there, but at a -- but if you use that as just a snapshot metric, to five percent, it reduces carbon and petroleum. It displaces petroleum, it reduces carbon, it reduces tailpipe emissions, and it creates job in a way, really, that nothing else does.

So, I think certainly it's easily in the near and the midterm to see how beneficial this can be in all those areas. And, frankly, I think in the long term it will be there.

It provides pretty tremendous benefits there, as well, and I know there's work in the sort of diesel substitute area with renewable diesel and other types of diesel substitutes that, you know, will address some of the longer term things as well.

But this is something that can be done immediately. And, you know, I got into this industry 10 or 11 years ago and it was really, the whole driver for me was climate change and it's a really important thing.

And it's great to look at long-term things. I think this is not a one-technology solution, it takes all of the technologies that are represented here today and I'm happy to be part of it, now.

But in the short term we really have to do something that helps immediately and I think we really

address that very well in ways I think, I hope I demonstrated can be done very effectively.

ADVISORY COMMITTEE MEMBER SHARPLESS: Well, I agree that I think that there does need to be a matrix and all of these technologies are on different time frames depending on where they are on this scale.

So, your emphasis is this is great for energy security. Right. This is good for global climate change. Yes, it's in the mix of that.

Does it deal with some of the air quality, pollution drivers that we have in some of our really severe districts? I don't know.

Is it mainly focused toward medium and heavy? I think that's where your emphasis is, rather than in the passenger vehicle.

ADVISORY COMMITTEE MEMBER GERSHEN: Yes and they're --

ADVISORY COMMITTEE MEMBER SHARPLESS: I think this is a great dialogue, thank you for letting me ask the question.

COMMISSIONER PETERMAN: Oh, and I think it's a good question, Jananne, and I think your question relates to all the different technologies and fuels that the program supports. Because, indeed, there are a number of different metrics and goals we're trying to

achieve and you've highlighted many of them, in addition to economic development, which has increasingly become an important, co-benefit, potentially, of this funding.

And I've asked staff, you know, what you've proposed. You know, I was thinking about the same thing in my head, you know, if there is a matrix you can look at everything. And that can be challenging because it doesn't -- it's hard to encompass everything and compare everything.

But I've asked staff, as we're looking with our work, on the contracts we have to do benefits analysis and sustainability analysis to see what's out there in terms of are there models we can follow to do this comparison of cost technologies and fuels.

And I think, frankly, it's a valuable exercise for us to collective engage in, as well, as we look towards reauthorization of this program because, again, the goals are specific and broad within the statute, and we've gone about trying to support kind of all of the above. But it will be a good opportunity for us to refine and think about what's needed in the short term versus the long term.

ADVISORY COMMITTEE MEMBER SHARPLESS: I would just absolutely agree that it's complicated and I think it depends on what the questions you're asking, you

know, the matrix will take different forms depending on the questions you're asking.

COMMISSIONER PETERMAN: And these are the questions we might as well get when we're going through our Advisory Committees on the Investment Plan. But that schedule was so packed because folks are really looking at the dollars that it's -- these are the times to bring these points up, now, and to allow the industry and folks to think about them.

Thank you.

ADVISORY COMMITTEE MEMBER GERSHEN: Thank you. Thanks very much.

COMMISSIONER PETERMAN: We're going to turn to Tim, now, to give his presentation.

Oh, we have one more question from Bonnie. And I will say after -- well, why don't you ask your question so that Joe can respond, and then after Tim goes we can get question for him as well, as well as for Joe again, but I just want to make sure we keep on time.

Bonnie?

ADVISORY COMMITTEE MEMBER HOLMES-GEN: Thanks. Yeah, this is Bonnie Holmes-Gen with the American Lung Association.

And I just wanted to comment that we've also had concerns about the air quality impacts of the biodiesel

blends and just are looking forward to getting more information from the Air Board. I know there's been some ongoing research on those air quality impacts and maybe we can get a brief synopsis of that as we go into the next -- look to the next Advisory Committee meeting.

But I guess my bigger comment, and I think there are mitigation strategies, but we need to get better understanding of if we have -- if those strategies are ready to go or if there's some additional needed work to implement those strategies.

And I guess my bigger question or comment is that I think what this raises, and kind of building on Jan's very good comments that, you know, the ARB and the South Coast, and San Joaquin Valley Air Districts have embarked in this visioning process.

And I think this is something we raised -- I raised at a previous meeting. And I believe the Air Board's going to be hearing this discussion of division document in October, and I think that that document provides a good framework for our discussion going into the next Investment Plan in terms of what is the emphasis -- what emphasis should we have on different types of strategies and how are we going to best and most effectively spend this money to make sure that in the 2020 time frame that we're on track with the

progress that we need to best achieve our air quality and greenhouse gas goals.

So, I guess I'm asking for us to again think about how we can inject the work that's been done at ARB on the visioning process into the work that we're doing here on this Investment Plan process.

And I know that there's -- as you said, Commissioner Peterman, when we get into the actual Investment Plan it gets to be a very quick, very complex -- or very quick and very intense process that you're under to crank through the numbers and figure out how to distribute the funds.

And so I would hope that maybe we could in addition, this time, have some kind of framework where we look at the scenarios that have been proposed by the ARB which, again, I think are showing that we need to move to zero emission as quickly as possible.

Obviously, in different sectors there's different challenges and in the medium- and heavy-duty sector that is a very, very big challenge. And we have to look, of course, at some mid-term strategies.

But the bottom line is we have a really, really difficult challenge ahead to reach our ozone, and PM, and our greenhouse gas goals together. And this program that we're involved is, I think, really key to making

sure that we get the focus on the technologies, especially the zero emission technologies that we need to take us through the long term.

So, thank you for letting me comment on that.

COMMISSIONER PETERMAN: Yeah, thank you, Bonnie, for your comments. And, obviously, our staff has been in communication with ARB on the vision document that ARB and South Coast has provided, I think it is a good conversation starter.

I would say, though, I think we want to think about to incorporate that vision document and how it ties to 118. And just to remember, too, that the 118 program, though, addresses the entire State, which has different air districts, different targets, and that focus right now is talking about the challenges in South Coast, but we need to put it in context as well with all the other considerations, including cost, availability, et cetera.

And so I think it's a worthwhile conversation to have, but I think it's also a robust conversation even beyond that document and there might be other perspectives and information that folks will want to bring in.

Final comment to Joe.

ADVISORY COMMITTEE MEMBER GERSHEN: I agree with

all of what's been said except that, you know, it's important to understand in the marketplace where I live and I work in this industry every day, you know, it's understood that the gasoline market is flat, but the diesel market is increasing 16 percent a year.

So, while I understand certainly for consumer vehicles zero emission -- I mean my next car is going to be an electric-diesel hybrid and --

COMMISSIONER PETERMAN: Correct.

(Laughter)

ADVISORY COMMITTEE MEMBER GERSHEN: -- and I think that's great. But for all those trucks out there that are basically driving the diesel market up 16 percent a year, you need to address it, we need to address it, it's really important.

You know, I understand the visioning of zero emissions but I think that's not necessarily productive in addressing long-haul trucks and diesel vehicles which, like I said, are increasing. We have to address it, it's important.

I mean this last year of storms that we've seen, unprecedented, is really important. This is a great way to address that. Thanks.

COMMISSIONER PETERMAN: Thank you. I am enjoying this conversation very much so continue with

such good comments and questions.

Tim?

MR. OLSON: Thank you very much. My name is Tim Olson, Manager of our Transportation Energy Office, and I'm going to try, in ten minutes or less, to discuss a little bit of the landscape on the other part of the biofuels. I'm not going to repeat some of Joe Gershen's information on biodiesel, I'm going to try to cover some of the other areas.

Also going to describe some of the findings from our August 1st, 2012 workshop and pose some questions, kind of food for thought looking forward for the Committee.

So, just a little bit of landscaping, I hadn't planned to discuss this but I wanted to give you a little background of where we are in kind of current biofuel compared to gasoline diesel.

As many of you may know, or maybe you don't know, about 16 billion gallons a year of gasoline consumption in the State, E10 is the main. Ten percent ethanol blended into that gasoline is the main biofuel channel into the market. That accounts for about 1.5 billion gallons per year.

Most of that's imported from outside the State and a little bit produced in the State, mainly from corn

ethanol plants, around maybe a little over 150 million gallons per year.

And in the diesel area we consume about 4 billion gallons a year. And as Joe pointed out, 46 million gallons biodiesel tends to be B5 blend. So, you can see the kind of scale of where we are.

And there is some contribution in ethanol E85, that tends to be pretty small. I'll give you a frame of reference, about 10,000 gasoline stations and pumps in the State, about 7,000 diesel co-located with those stations. And E85, I think we're around 40 E85 stations.

So, general rule of thumb, most industry people say you've got to get about a 10 percent, 20 percent market penetration to make a difference. That looks like around -- if E85 makes any sense, it looks like around 1,800 to 2,000 stations or islands have to be installed.

And the Energy Commission is funding some of that seed money to get some of that started.

Just wanted to kind of recap some of the kind of direction, the point here that the Commission's policy objective is to accelerate commercial development of advanced biofuels and we have lots of ways we can do that.

But for the most part it's driven by some -- well, definitely seeking lower carbon fuels. Jim McKinney pointed out most -- I think all of our projects in biofuels are 20 grams per CO2 equivalent per mega joule compared to the gasoline, 95.7, I think.

But there others that are kind of transitioned, maybe, in the 40 to 50 grams per CO2 per mega joule that also may make sense in the near term.

And so, you know, part of what we're looking at is we want to -- not only do we want to go in this direction of stimulating commercial scale advanced biofuels in the State, low-carbon, petroleum-displacing biofuels, but also that we want to build as much as possible in-state, and for a lot of reasons.

Mainly, economic development reasons, but closer to the market and, in essence, looking at how we can use our projects to meet our policy goals, which also include low carbon fuel standard.

And so, as you may know, of these 19 or so scenarios produced by the ARB, biofuels are a big contributor, almost every single one of those projected into the 2020 time frame.

In addition, there is some -- besides that liquid fuel pathway we have a gaseous fuel pathway, a biofuel source, and that's the biomethane, directed

mainly into natural gas stream, natural gas pipelines, CNG/LNG vehicles, natural gas fueling stations.

So, it's the so-called green natural gas and we're funding projects out of that area, too, but it's really minimal numbers of projects at this point.

Most of our projects are in pre-development stages. And as we pointed out in previous Advisory Committees, that these biofuel projects tend to have feasibility, pre-development, pilot project, kind of near-term, early commercial, and then commercial scale. Sometimes that time frame is two, three, five, seven years to do that.

And so the results, the progress needs to be tracked very carefully and I'm going to go into a little bit more detail about how that can occur.

What we're seeing is the main -- to date, the main way that biofuels are getting into the marketplace, the commercial market is through a venture capital-driven business model.

And that is basically kind of lots of capital infusion, hoping that something happens, either technology breakthrough, cost reduction.

And venture capital investors don't necessarily have a long-term horizon to stay into that two- to seven-year time frame.

And so we're seeing some dropping out, some staying in, but that's been the primary direction of what we've seen to date.

A couple other -- so that's kind of a little bit of the landscape.

Also, what's not on here is the RFS2, the federal requirement to, for the most part, include corn ethanol as an additive into gasoline. This is a nationwide policy to diversify petroleum, diversify our dependence on petroleum.

And there's a requirement under the Renewable Fuels Standard that every year there's a certain target for advanced biofuel, cellulosic, renewable diesel, and there's another category.

That those targets have never been met, the U.S. EPA and DOE have waived those virtually every year, so that's another factor in this.

COMMISSIONER PETERMAN: Tim, before you move on from that slide I wanted to kind of ask the question, and it might be to you or to Peter, about the contribution to the LCFS because I think this gets at the timing question about the short-term needs.

And my recollection is that right now corn ethanol is the only fuel that's being produced at scale to satisfy the LCFS; is that correct, or something --

can you comment on that type of comment?

I think that's what we've heard from parties, that the need for biofuels in the near term from the LCFS.

MR. OLSON: That's correct. And it's three plants in California that produce biofuels, but there are imports from the Midwest.

So, the CI levels vary on what the feedstock, what energy's used in the production plants. Here we tend to use more natural gas.

One of the byproducts, what the -- the grains here, in the Midwest that's dried, it takes more energy to do that.

Some of the sources in the Midwest are primarily coal, even though some plants are switching to natural gas, so there's a differential.

So, a corn ethanol plant in California has a lower CI than an equivalent plant in the Midwest that uses coal for the most part, even counting the transport of corn to California.

There are other sources from Brazil, Brazilian sugar cane ethanol, coming into California that are also low CI, carbon intensity values, and those are likely to be contributors in the future.

But for the most part we're dependent on Midwest

corn to meet our E10 blend for gasoline.

COMMISSIONER PETERMAN: And I'll just add on that before you have a question or comment, Tim, that for those who weren't aware, in August we had a workshop on the transition from corn ethanol to advanced and cellulosic biofuels, and heard from members of the industry.

And the CEPIP program that the Commission funded for corn ethanol facilities had a requirement that these facilities improve their carbon intensity and their efficiency.

And I think that, combined with the Valadao bill, recently we've seen, I would say in the last couple of months, an expedited move by some of these facilities to lower carbon feedstocks, besides corn.

You know, I want to -- I don't know how public their numbers are, yet, so I won't want to quote them, but looking towards the end of next year to having a significant share of their production coming from alternative sources such as milo, for example. And that's something, we've been observing that trend and we can report back to the Advisory Committee on in future meetings.

And we can see a transcript, as well, from that meeting online.

MR. OLSON: And I'm going to go into that, the description here in a second.

COMMISSIONER PETERMAN: Okay. Tim, did you have a quick question or comment?

ADVISORY COMMITTEE MEMBER CARMICHAEL: I just wanted to qualify your comment. When you said "at scale", you know, the fuel at scale supplying the LCFS when, in fact, people may not be aware but natural gas, for example, had member companies that are selling credits in the LCFS market right now.

It may not be on the same scale as ethanol but it's an active part of the program already.

COMMISSIONER PETERMAN: And that's great and I kind of asked it with a lilt in my voice, more as a question because, you know, you're trying to process the general point that as we balance where we're going to make our investments that you do have fuel sources, biofuels, natural gas that have carbon and, therefore, may not fare as well in the greenhouse gas assessment.

But there's also been requests for those types of fuels in the near term, in terms of LCFS, and so I think your comment adds to the understanding of what we're seeing right now in terms of meeting compliance.

MR. OLSON: So, when we look at the -- kind of the policies, the how do we -- how do biofuels help

comply, help the State comply with the Low Carbon Fuel Standard and so we started looking at, you know, adding these projects up what do we really need?

And we're looking at like 1.5 billion gallons of ethanol used as an E10 blend and you want to displace that with a biofuel source.

We're in the range of, we think, 12 to 16 projects that are equivalent to a 50-million, 100-million-gallon-per-year facility.

Now, we know that we're seeing lots of smaller ones that might be 5 or 10 million, but then there are more of them that you need.

But just for comparison's sake, this is the kind of range that we will need if biofuels are a good contributor to this market.

For a low carbon fuel standard stand point, Bioenergy Action Plan stand point, just put petroleum displacement.

And we think that that capital investment is in the range of $4 to $5 billion.

Now, you know, I mentioned the venture capital is -- some of the early projects we thought were going to be online, like Amyris, the Solazyme projects, they're kind of slowing their development, moving -- because their venture capital investment is requiring

returns, they're shifting their production to green chemicals and cosmetics.

And so we're now looking at these other projects which we, the Energy Commission has funded now over 30 of these kind of biofuel projects, and spent nearly $200 million of Energy Commission money, plus private capital.

And we're seeking kind of a trend in a couple of things. One, in our look at the corn ethanol plants we're seeing a kind of a merger of advanced biofuel technology and the corn ethanol, co-locating these advanced biofuel projects at the corn ethanol facilities.

I'll kind of mention that was one of the findings of the August 1st workshop. That's the so-called bolt-on business model. We think that's probably a good trend, that that's how we see advanced biofuels coming to the market.

We also, when you step back and look at what feedstocks, what technologies are making sense, we're doing parallel investments in over 30 projects, I think it's 38, now. Primarily for agriculture, forestry, urban waste residue, probably, I think it's at least 15 different feedstocks in these areas, plus purpose-grown crops, and at least ten technologies all kind of running

parallel.

It's part of our -- we're not trying to pick winners, we want to seed some of these areas and facilitate getting these projects on the ground.

We also kind of looked at -- when you look at this $4 billion to $5 billion need between now and, say, 2020, 2022 time frame that the Energy Commission AB118 investment is averaging around $20 to $30 million per year in any single cycle and that's definitely not enough to provide the full $4 billion, $5 billion.

So, we're looking at other partners here, how do we use this to attract private investment.

COMMISSIONER PETERMAN: Tim, can you say again for at least my benefit where the $4 to $5 billion comes from? So, that's based on --

MR. OLSON: Total capital costs to build these projects to commercial scale. In some cases, where the bolt-on idea looks like it's an incremental development over time, you don't have to have $250 million up front, but you might be able to do it with $5 million, $10 million per year, gradually increasing commercial scale.

But these plants tend to cost, for a 50-million, 100-million-gallon-per-year plant around $200 million capital costs.

And that -- we think that has to come from the

private sector, most of that.

COMMISSIONER PETERMAN: And you said that would be the equivalent to displacing --

MR. OLSON: About the equivalent of about 40 percent of the amount of fuel used in the E10 blend.

COMMISSIONER PETERMAN: Okay, that's fine. Okay.

MR. OLSON: So, 1.5 billion gallons is what we put into E10, that's what that amounts to per year, now.

When we looked at this, how do you make any substantial difference? Got to be in about 40 percent displacement of that for the Low Carbon Fuel Standard, Bioenergy Action Plan, the Alternative Fuels Plan targets. And if you want to meet that, that's kind of the early, between now and 2020 kind of target that you have to reach.

COMMISSIONER PETERMAN: Thank you. I want to make sure we leave time for a couple of questions and so I'll let you get back to it.

MR. OLSON: Okay. So, August 1st workshop highlights this. As the Commissioner had described, we have conducted this CEPIP workshop. Without going into a lot of detail, it's a production incentive based on production of ethanol produced from corn in this State. Three projects are receiving -- have received money from

that.

We were worried about volatile market conditions because the money was drawing down real fast, and we're subject to commodity pricing in corn, and a national and international market that is very volatile and has been for, now, three or four years.

So, we suspended any new investment, any new money into that, have not eliminated the program because we want the reporting on those plants, but we're in this process.

This August 1st workshop was to look at where are -- what's the status of these projects, what's the future and when are the advanced biofuel projects going to come in either separately or, as we found, as part of this bolt-on idea.

The amount of money spent was $6 million to date. We have not put anything else into it. We're reevaluating that, now.

What we found in this workshop is that these corn ethanol plants are listening to what we're saying, we want to go to advanced biofuels and they're beginning to make that shift in their plants, that they're using other feedstocks. Milo is one example. They're using biogas to produce electricity for on-site use, that there's a shift happening.

And one part of the kind of market dynamic is a national trend to E15, so more ethanol allowed as a blend in gasoline, and which would have an effect on the national market dynamics.

We also --

COMMISSIONER PETERMAN: Tim, I want to make sure we have time for questions and we're pushing the lunch hour, can you start to wrap up, please?

MR. OLSON: Yeah. So, our kind of final look at this is we wanted to kind of -- well, what's happened in this area and Jim McKinney and his staff put together a report, AB109 report. Now, it's a little over a year old, now, a year and a half.

But they pointed out in biofuels that with the projects that had been funded at that point in time that looking forward to the 2020 time frame that we had -- we had this possibility of producing 90 million to maybe close to 600 million gallons of biofuel, low carbon biofuel from projects in California.

But there are lots of conditions and circumstances to reach that. These are kind of projecting where early development stages of projects will reach commercial scale.

But that was their assessment based on kind of low end 90 million, high end 600 million.

E2, Environmental Entrepreneurs just produced a report stating that by 2015 they see, nationwide, about a 1.6 billion to 2.4 billion-gallon-per-year development in this area.

Implied that California would be in the range of 400 million gallons by 2015, the same thing, lots of circumstances, lots of caveats for that.

The Boston Consulting Report, recently done on behalf of oil companies, basically concluded that not much biofuels at all would be produced in this State by 2020. So, there's lots of assessments out there.

What we're looking at here is we have minimal amounts of money compared to what this need is and we're posing this question; what's the best way to use that money?

Should we continue doing our grant funding with matching fund type of building the stable of pre-development projects?

Should we look at how to -- now, we're at close to 38 projects, now, with these new awards, should we be looking at ways to stimulate private investment into those projects, maybe co-funded with some of our money, maybe in partnership with the USDEA or USDOE loan guarantees.

Basically, we think we need to look at those.

How much, what's the amount that we can really get in terms of fuel into the marketplace, low carbon fuel, and what are the mechanisms we can use in our programs here to -- maybe in conjunction with others to achieve that, and that's kind of where we want to leave that.

COMMISSIONER PETERMAN: Thanks Tim. I know it's a big topic and it's hard to summarize an entire day of another workshop in about a minute. But it's just to tease up the topic for all and everyone to hear, basically, some of the issues and comments that are coming back to us and there has been a lot of movement in this space over the last year.

Very quick set of questions, Eileen.

ADVISORY COMMITTEE MEMBER TUTT: Thank you, Commissioner.

I guess I just wanted to know -- I mean I don't even like that slide, it's hurting my eyes, because I think some of these biofuel reports they're all -- kind of all over the map.

So, I think the relevant question is the one you asked; how can this funding be used to make sure that enough biofuel is available to meet the Low Carbon Fuel Standard, which is a huge priority in this State?

I want to point out that, as Tim said, there's natural gas that's already available for Low Carbon Fuel

Standard credits, there's also electricity credits.

And I think that will get us a large, you know, a large component of the 15 or so million metric tons that the oil companies need.

But it's very clear that biofuels is going to be important. And my sense is that if you combine the natural gas and electricity, you can probably get a pretty significant chunk of credits available to the oil companies and then we can figure out how much biofuels is needed, and I think that would really help inform the Investment Plan.

So, I know you're working probably with CARB. We're actually working with CARB to see exactly how many credits might be available for the electricity sector. I assume Tim is doing the same thing for natural gas.

I'd like to just offer our services in coordinating with you because I think that will give you a good idea of at least some range of biofuel that we're going to need in this State.

And I will say that the Boston Consulting Group study says this today, but just a few years ago they were saying something very, very different.

So, that market is in flux, to say the least.

COMMISSIONER PETERMAN: Jan, you had a comment?

ADVISORY COMMITTEE MEMBER SHARPLESS: This is a

really broad area, so I appreciate that. But one of the things I got, Tim, from your presentation was, and I just want to check to see if I'm understanding you correctly; when we talk about the biofuel area versus the biodiesel area are we talking about primarily using that fuel as a blending or is it going to act as a separate fuel to meet the Low Carbon Standard?

Is it blending you keep talking about backing out, you know, a portion of what currently is in the fuel composition and substituting this for that? At least that's what I thought you were saying; is that the case?

MR. OLSON: I think what I refer to is really time frame-wise it is a blending, a blending market, what we -- that's the flow of where biofuels we think will go.

Now, there's also a lot of insight about drop-in fuels which could be blended or it could be a separate type of approach. But we don't have a lot of information on drop-in fuels.

COMMISSIONER PETERMAN: And Jan, just following up on your question, I think the observation is that within the biofuel space there's a continuum of carbon intensity. And with the requirement, now, for E10, that ethanol component is being made up primarily from

imported ethanol, which will have a higher carbon intensity.

So, there's a need to both lower -- make a lower carbon intensity on the E10 we're using and then there's the question, the general issue about how much you want to expand biofuels beyond that, as well. So, it's got two parts.

ADVISORY COMMITTEE MEMBER SHARPLESS: Yeah, it's almost like it's not two separate pieces, though, it's a continuum, right?

I mean if you're market is being driven right now to meet the requirement for low carbon fuel and you're building a manufacturing base to do that, and you're building that base to increase its capacity to meet increased demand, there's a -- at some point there's a drop off of where government plays a role in startup and research.

But when it comes to actually investors investing because there's a return on that investment and profit, I think you need to do your analysis to see where that is going to occur and where your stuff is on that, on that line.

But there's a whole lot more people in this room that know a whole lot more about it.

But just judging from what I've been involved,

that's what I'd kind of be looking at, to answer your question.

COMMISSIONER PETERMAN: And thank you. And I'll say if we could predict when the markets would be profitable and not need government intervention, I think we all could invest in all these technologies successfully elsewhere.

You know, but I think your --

ADVISORY COMMITTEE MEMBER SHARPLESS: Investors know.

COMMISSIONER PETERMAN: I wish they'd tell us.

You know, I think your points are well taken.

We really do need to break for lunch so, Joe, if you wanted to say something very quickly, but then I'm going to ask that we break.

ADVISORY COMMITTEE MEMBER GERSHEN: Just briefly, you know, biodiesel is a biofuel. It's the only advanced biofuel actually available today. And focusing on, you know, developing -- at the risk of sounding repetitive here, since I just gave my presentation, I think expanded investment in biodiesel and ultralow carbon intensity biodiesel in the State really will change the dynamic and it really creates the best bang for the buck.

COMMISSIONER PETERMAN: All right. Well, on

that note --

ADVISORY COMMITTEE MEMBER MUI: This is actually Simon Mui on the phone.

COMMISSIONER PETERMAN: Okay.

ADVISORY COMMITTEE MEMBER MUI: I thought you would turn to the --

COMMISSIONER PETERMAN: Yes, sorry, Simon. We're just running behind time, but please go ahead.

ADVISORY COMMITTEE MEMBER MUI: Yeah, I have a quick comment for Tim, and this very helpful. But to the extent, you know, there's about 20, 24 or so biofuel companies in California. But there's also actually a large, an increasing number, I guess, I would say a handful of commercial plants being built right now within the U.S, Abengoa, you know, DuPont Cellulosic, Fiberight, there's a POET Plant.

It would be good, probably, to go to these companies to basically find out how they bridge that gap from demo to commercial scale.

And also, I think to the extent that you're focusing your efforts on trying to figure out where the right place to put government funds is, I would tend to agree that this market right now is going through, you know, a kind of a shakeup in terms of going from the venture to the private equity, kind of private financing

market.

So, to the extent that you focus on some of the maybe getting it to a point where the private equity can take it over I think is a good area to focus on.

And I would comment that what is really needed here, you know, in terms of the volumes is really an understanding of how things like the LCFS and AB118 funds, you know, how much additional volume can we expect from these policies and what's kind of the magnitude necessary. Thanks.

COMMISSIONER PETERMAN: Thank you for that. And I'll just end with one comment because you touched upon, you know, private equity.

So, when parties come in to talk to us about different technologies and fuels, and we ask about, well, where's the private investment? Because, ultimately, we know all these funds are over-subscribed and we want to put in as limited amount as possible.

And what we hear and, you know, we can vet it and discuss it more, is that there's probably funding available, but no one wants to trigger the private funding if the government hasn't put a dollar in. And sometimes the amount being asked for isn't a tremendous amount. You know, if the project's $100 million and they'll say, you know, a signal from a million dollars

from the government, and we've heard this as investors as well.

So, that's the challenge for all of us about, you know, how do you assess that? You know, the sign, the signal of what the government investment is oftentimes worth more in leverage than the actual dollar amount.

At the same time we are investing taxpayer money, our own money, and we want to do it smartly, and so you don't always want to be the first one out the door.

And that is the challenge that we're facing here as a State, as we're trying to stimulate these markets.

So, let's break for lunch. We'll get going again at 1:10. Thanks a lot.

(Off the record at 12:11 p.m.)

(Reconvene at 1:15 p.m.)

COMMISSIONER PETERMAN: All right, everyone, we are going to get started. Welcome back, hope you had a very good lunch. I am sure we'll see some folks come in over the next few minutes but we want to keep as closely as we can to the agenda.

I want to take a moment to introduce Randy Roesser. Randy is now Deputy Director. Director Deputy? Deputy Director, I never quite get the term

right.

He is Deputy Director and replacing Pat Perez as Deputy Director.

Randy, would you just take a moment and introduce yourself and tell folks what you've been working on prior to taking on this role?

MR. ROESSER: Okay, good afternoon. Yes, my name is Randy Roesser, I've been at the Commission for about 22 years. For over a decade I was the budget officer so I know a lot about the finance side of it, the money side, which I think is a good -- you know, which is very important, obviously, with this program, for this money coming every year.

I have giant shoes to fill here, Pat's. I know because he -- actually, I'm serious, size 16? What size shoe do you wear, Pat?

(Laughter)

MR. ROESSER: They're very large. But you all know Pat and Pat's just a great guy. He's been in the Commission I think back when I was in high school, so he has a lot of --

(Laughter)

MR. ROESSER: How am I doing? How am I doing? But I'm looking forward to working with everybody and getting up to speed on the technical side. We have some

great staff, with a lot of great technical knowledge, Jim McKinney, John Butler's new in the program, he has a lot of great process background, and a lot of the staff here and, of course, all of you. So, I'm looking forward to getting up to speed and, hopefully, showing Pat up before too long.

(Laughter)

MR. ROESSER: Thank you.

COMMISSIONER PETERMAN: Well, welcome.

And before we start with the first presentation from Tim Carmichael, Peter Christensen with the ARB has volunteered to give a couple of remarks and reflect on some of the comments that were -- some of the discussion earlier, as some of the discussion pertained to some of the policies and programs at ARB.

And so, Peter, appreciate your update.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE CHRISTENSEN: Certainly. And I guess my first observation is that I have even more appreciate for Tom Cackette and his background over the past 30 years at ARB.

But, no, I do appreciate the time. I just wanted to make a couple of observations and then throw out a couple of dazzling facts and figures that you might find interesting.

I did have the chance to run into a couple of the LCFS staff on my lunch break and I asked them about some of the things that we talked about earlier today in terms of LCFS, the fuels that are available to meet the LCFS standard, those kinds of things.

Right now they are reporting to me that about -- and don't quote me on this -- but about 85 percent of the fuels currently available are ethanol, of various different feedstocks.

And we do see that that is going to be changing as we move into the future, certainly with natural gas, the economics of natural gas and electric. We do see those increasing as time moves on.

We talked a little bit about the vision. And just for the folks that haven't heard too much about the vision before, the need for emission reductions is quite dramatic.

The vision, it was pointed out, is focused primarily on South Coast and the San Joaquin Valley because those are where the -- we'll face the toughest challenges in meeting the federal standards.

We're going to need approximately an 80 percent NOx reduction by 2023, from the 2010 inventory. An 80 percent NOx reduction is substantial and it's going to require not just one strategy, but a variety of

different strategies.

And that's -- what I think, really, the vision lays out is it's important to recognize that it's not a solution, it's not the map, but it lays out where we need to get to and some of the scenarios and pathways to get there.

You'll see that there are reductions from fuels, from vehicle technology, and also reductions from VMTs. Not something that we talk about in this setting very often, but there are a variety of solutions that we really do need in order to get to that NOx reduction by 2023.

Let's see, so with that as a little bit of background on LCFS and the vision, I did want to just, if I could, take about 30 seconds to give you some facts and figures from the program that I manage, which is ARB's part of the AB118 program or the Air Quality Improvement Program.

COMMISSIONER PETERMAN: You can take more time than that.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE CHRISTENSEN: Oh, good.

COMMISSIONER PETERMAN: We all appreciate the update.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE

CHRISTENSEN: Good. Well, I have charts and graphs. No.

(Laughter)

COMMISSIONER PETERMAN: As he picks up a big volume of paper, for those on the phone who can't see it.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE CHRISTENSEN: So, we really do appreciate in the last Investment Plan the Energy Commission allocated $5 million towards the Clean Vehicle Rebate Project, which is our light duty incentive program.

And now that we're into the program, into the fiscal year a bit more, we see that that really is going to be essential. It may not be $5 million, it may be a haircut although I'm not sure I'm happy with that term. But, okay, we'll call it a haircut.

(Laughter)

ADVISORY COMMITTEE MEMBER REPRESENTATIVE CHRISTENSEN: We have seen a pretty market increase in participation in CVRP, just since about the -- since about March of 2012, March of this year.

That's, coincidentally, when the Chevy Volt and the Toyota Plug-In Prius were added as eligible vehicles for CVRP.

We are now looking -- we are now receiving about

a thousand applications a month in that program, which is really, really substantial. That's approximately $2 million a month in funding for the clean vehicles for California consumers.

And what that means is that with the $18 million that ARB has allocated for the program, along with the Energy Commission's allocation as well, we will probably be only about $1 million short at the end of the fiscal year if everything stays about the way it is right now.

Which is, honestly, it's tough to be in a position where we don't have enough funding, but that's not bad. We probably won't have to make dramatic changes to the program during this fiscal year. So, that's good news, we're close to meeting demand.

The other thing that we talked about in the last Advisory Committee meeting, I believe, is the slowdown in demand for medium- and heavy-duty truck funding through our hybrid and zero emission truck and bus voucher incentive project, or HVIP for short.

And we have seen a slowdown over the past couple of years in that program.

The good news that I'll give you, breaking news today, is that over the past three weeks or so we've seen a pretty significant increase in applications in that program, as well.

The reason for that is that the board adopted changes to the funding levels and some of the other criteria for that program, and it looks like it's having the desired result.

So, we're looking at increased demand in the HVIP program as well, which is good news for deployment of those advanced technologies over the coming fiscal year.

So, with that I would just remind folks that at the same time that CEC is developing their Investment Plan, ARB will be developing our funding plan for the next fiscal year and we'll be kicking that off in the near future, and we encourage your participation in that, as well.

We are currently anticipating board adoption of our next funding plan in June.

So, with that I'll turn it back.

MR. MC KINNEY: Peter, if I can ask you a follow-up question on HVIP. So, we'd love to see the data from that, on these new applications coming in.

And I was very pleased to learn, last week I was in Bakersfield and learned about HVIP Plus-UP or a Plus program with the San Joaquin Air District.

Could you talk about that a little bit, it was very exciting?

ADVISORY COMMITTEE MEMBER REPRESENTATIVE CHRISTENSEN: Yeah, this is something that's very exciting. We've had a number of air districts that have voluntarily stepped up and committed some of their own local funding, both on the CVRP side, as well as HVIP.

In the San Joaquin Valley, the San Joaquin Valley Air Pollution Control District has allocated, I believe it's $2 million. I'll turn back.

Yeah, $2 million for additional incentives for trucks that are manufactured in the valley. And so that helps to bring down the incremental cost by another margin, which is very helpful in reaching some of the medium-sized and small fleets.

As you may know, a lot of the participants so far, it shouldn't be a surprise, have been the large truck fleets. They've got the capital and they have the staff to be able to accommodate these advanced technologies.

What the challenge is, now, is getting to the medium-sized fleets and the smaller fleets, which make up a big part of the truck population in California. And that kind of local participation is really what helps to get us to that point.

COMMISSIONER PETERMAN: Great, thank you very much, Peter, for that update.

Tim, the floor is all yours.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Thank you. Before I go --

COMMISSIONER PETERMAN: However you'd like to make it.

ADVISORY COMMITTEE MEMBER CARMICHAEL: I'll go up there for the presentation, but I am worried I'm going to forget this. I want to mention, thanks to the generosity of Honda, I have a long-term loaner, a natural gas Civic. And the quid pro quo for that long-term loaner is to expose it, share it with people. CEC staff, Commissioners, Advisory Group members, anyone that's curious, please let me know and I'm happy to literally make an appointment to let you drive the vehicle and ask questions. That's why I have it here in Sacramento and it's a cool car.

COMMISSIONER PETERMAN: Great, thank you.

ADVISORY COMMITTEE MEMBER CARMICHAEL: So, CEC staff asked me to make a couple of brief presentations today and I'm going to talk about infrastructure, local infrastructure needs and my members' perspective on this issue.

And then a little bit later I'll be talking about vehicle incentives.

COMMISSIONER PETERMAN: Tim, can you put the mic

up just a little bit and make sure everyone on the WebEx can hear you?

ADVISORY COMMITTEE MEMBER CARMICHAEL: Is that better? Better?

COMMISSIONER PETERMAN: Moderately.

(Laughter)

COMMISSIONER PETERMAN: Or shrink a couple of inches, whatever you want to do.

(Laughter)

ADVISORY COMMITTEE MEMBER CARMICHAEL: I'll hunch a little.

COMMISSIONER PETERMAN: Okay.

ADVISORY COMMITTEE MEMBER CARMICHAEL: All right. So, just as a reminder, a lot of the people in the room know who my members are, but it's 27 companies that either sell natural gas as a transportation fuel, run fleets that run on natural gas, or build the vehicles, or some engineering component of one of those three scenarios.

So, a couple of big picture thoughts -- actually, before I do that a disclaimer that's important. What I'm showing today is a majority view. It is not necessarily a unanimous view of my membership.

And CEC staff and Commissioners shouldn't be surprised if a member of mine submits comments that

don't align with what I say today. That's the way we operate and we encourage that, frankly. But what I'm sharing is a majority view.

So, some big picture thoughts before I get to the specific questions that CEC staff asked me to address. We continue to believe that with your limited funds you will have the greatest impact on expanding NGV use in California by providing vehicle incentives.

That is where you're going to get the most bang for the buck, and I'm going to speak to that quite a bit in the next presentation, but that's important.

We also believe that you should continue to provide funding for infrastructure. But, and this is where some of my members may disagree, but the majority believe challenge the applicants to prove to you that they couldn't get the job done with private funding.

Because in addition to my members that build stations, there are at least half-a-dozen other players in the market today, and these aren't just small companies, there's some big players, as you guys, as many of you know.

And so continue to support infrastructure, but challenge the applicants to show you why they couldn't get it done with private funding. Because unlike a lot of the other sectors in the alternative fuel world,

there's a lot of private funding for infrastructure in the natural gas world today, and that's an advantage we have and it's something that CEC should be playing off of, if you will.

You know, Jim mentioned in his presentation this morning that the infrastructure pot was under-subscribed. Not a total shock to me. There may have been some of the issues that we heard about with communications, but I actually think a bigger issue here is, you know, the private sector's meeting the vast majority of the scenarios, the demand in the vast majority of the scenarios.

And we would encourage you to take a look at redirecting that money to vehicles because, again, I think you're going to get the biggest bang for the buck there.

And I'm not saying zero out infrastructure funding, I'm definitely not saying that, but you're going to get more bang for your buck with vehicles.

I'm going to talk about this a little bit later in the vehicle side, but there's a process issue here to take a look at.

A couple of my members will probably be submitting comments to CEC about the compare and contrast between the MSRC program, which is the Mobile

Source Reduction Committee program down in Southern California, and the CEC's program relative to application and what's involved with that.

And there's a lot more involved with the CEC program and there's a question mark; is there a lot more benefit to the extra work in the CEC process.

So, I'm just flagging that as something, as part of our ongoing improvement of this program. Some of my members will be submitting more detailed comments on that.

So, the first specific question that we were asked to speak to was what entities really need the infrastructure funding?

And the short answer is we continue to believe the funding should be available to all, you know, public and private. But let's make our use of the public funding, you know, prioritize -- let's use it to prioritize our State policy objectives, and let's do a better job of using metrics.

Such as, how much fuel are those stations actually pumping?

What's the associated emissions benefit with that, whether it's smog or greenhouse gas?

And how many vehicles are they serving?

It's important, again, to be vigilant in our use

of the funding in this infrastructure sector.

Schools was a specific scenario that staff asked about. Obviously, I want to support schools. My first work in the natural gas transportation sector was with schools.

But a fair question these days is you're going to have school districts coming to you asking for infrastructure funding. Ask them; have you checked with the private sector?

But also ask them; can you afford to buy buses? And I don't mean that in a harsh way, but I don't want to see a scenario where CEC puts money into a station at a school district and the reality is, because of the budget constraints they're facing, they can't actually get the buses to operate at their stations, and that's a reality in the marketplace today for some school districts.

Transit is another sector that staff asked about. We don't think that CEC should be supporting transit infrastructure. Not because we don't like transit, we love transit. But that is one of the most mature portions of the marketplace. In California it's almost a hundred percent. It's, you know, 90 percent of the fleet is running on natural gas. There's already a lot of maturity there.

The same is true for refuse. Now, there may be scenarios where it makes sense because the private sector wouldn't meet the need, or some scenario where you see multiple benefits.

But as much as possible, we think vehicles are going to be a better -- or, you know, a more fruitful investment.

Should infrastructure funds be used only for deployment of fueling or should there be investment in R&D, and demonstration?

So, the short answer is use the infrastructure funds for deployment to the extent that you do it, and then R&D funds for demonstration.

I'm going to talk a bit more about R&D and what our thoughts are on that in the next slide.

I should mention because there was, you know, in the brackets here about home fueling. We don't think right now that CEC should be putting money into demonstrating home refueling.

There were announcements last month by General Electric and Eaton, it might have been July, but this summer, two big companies, big money, they're going after a $500 price point for home refueling. Compared to $4,000 today for home refueling and they're going after a $500 home refueling unit in the 2014-2015 time

frame. And that's going to be a game changer if they're able to deliver on that.

I'm mentioning that as something that CEC should be aware of, but not advocating for you to be funding demonstration, you know, at this time.

On the -- yeah, first I'll talk about the stations prices and questions as to whether or not this is what we're seeing in the marketplace.

In general, we think these numbers look good. One of the things that didn't really come out of the CEC's question to us was how much are you looking at through-put because some of these look like very expensive stations.

But if you're paying a million and a half for a station and you're pumping 10,000 gallons or gallons equivalent a day, most people would say, wow, that's a pretty good investment.

So, the use of the station is a significant second question to what's it going to cost, and that applies to all levels here.

The one scenario that's not highlighted in the CEC question or framing of this is a smaller station, which we're starting to see emerge, one or two pumps, not the stations that we grew up with, anything like a gas station, necessarily. But one or two pumps in the

parking lot of a shopping mall, for example.

There are a couple of companies that that's their business model, or at least part of their business model and you're going to see more of those, I believe.

The price range, roughly in the half-a-million-dollar range, maybe a little bit less. And sharing that information just in response to, you know, do the three examples that CEC gave cover the gamut? Not quite.

The following question from CEC staff was; are these prices likely to come down any time soon? And the bottom line is we don't think so.

And the reason we don't think so is most of these stations are using equipment that's been around for a long time. Compressors have been around for decades. They're using, you know, state-of-the-art compressors.

But let's say there's a thousand natural gas stations in the country today. If CEC was somehow involved in getting that number up by 30 percent, 300 more compressors, you're not going to have a significant impact on the price point on compressors.

The same goes for storage tanks, it's just not -- we're not working with the volumes where you're going to see a significant price point change.

That said, we do think it's an interesting idea

for CEC to look at letting an RFP that will be in the research and development sector, soliciting proposals for lower cost, increased efficiency, improved performance related to refueling infrastructure.

That hasn't been done any time recently and there might be a little bit of stuck-in-my-comfort-zone with the manufacturers of these stations saying, well, I know where I can get my compressors, I know what equipment to use, I want to go with the easiest set up, the familiar set up for this station.

But, you know, there's some potential there for research and development making an impact for the next generation of station. And CEC, I think -- we think could play a role there.

We would also encourage that you work with a group that's a bit more expert in this area. The Gas Technology Institute is the first name that comes to mind, but they're not the only players out there.

But partnering with a group like that you're going to benefit from their expertise and their knowledge of the existing marketplace and technology, more than anyone on CEC staff should be expected to know about a specific technology, really.

And that's it for infrastructure, I think, unless there's questions?

COMMISSIONER PETERMAN: Questions? Jim McKinney?

MR. MC KINNEY: Excuse me, I didn't mean to grab the mic there.

Thanks Jim, this is great information. I did have two follow-up questions. One, when you're talking about the new fueling systems that, say, go in parking lots, is that the Nanobox technology? I mean these stand-alone, modular, compressor tank systems.

ADVISORY COMMITTEE MEMBER CARMICHAEL: So, what's great about your question is that's not who I was thinking of.

MR. MC KINNEY: Oh.

ADVISORY COMMITTEE MEMBER CARMICHAEL: But yes is the answer.

(Laughter)

ADVISORY COMMITTEE MEMBER CARMICHAEL: Because they are another company that's got a small modular technology that can either go in at an existing gas station, petroleum station, or could be used on a -- you know, in between parking spaces in a shopping mall or grocery store parking lot.

But there are other companies that have different technology that are doing the same thing, putting infrastructure into the same types of locations.

MR. MC KINNEY: And then my second question is, you know, what's your Coalition's view on where we are with deployment of LNG stations and the ability of, say, you know, the long-haul, Class 7, 8 trucks to really start to switch over to that technology and that fuel type?

ADVISORY COMMITTEE MEMBER CARMICHAEL: So, I have members that are all in on LNG and I have members that think, you know, it's still unpredictable whether some of the heavy-duty applications are going to go liquefied natural gas or compressed natural gas.

In either case, if we're talking about CEC's limited pot of money, funding an LNG station, in our opinion, is not the top priority.

Put money into helping get more LNG vehicles on the road and you're going to have a greater impact on the long-haul trucking sector. That's our current perspective.

And again, I'm going to qualify it one more time, there will be scenarios that will come to you that they'll say we couldn't get private funding, and we encourage you to look at that seriously, but we don't think that's anywhere near the majority of situations anymore.

COMMISSIONER PETERMAN: Thanks Tim. I have a

follow-up question. So, regarding private investment in infrastructure, are the private companies that are doing the investments are they following a particular roadmap? You know, are -- is there coordination about where these stations are going to be located?

And how does your group see that aligning where we're seeing the vehicles being deployed?

ADVISORY COMMITTEE MEMBER CARMICHAEL: It's better than the wild west but it's not fully mature or worked out, yet.

So, you have at least two companies that have national plans laid out. We're going to hit these corridors, freeway corridors, and we're going to do it roughly every 250 miles, and we're going to do it rapidly, in the next two to three years.

And then you have other companies that are responding to the market and individual fleet requests on a regional basis or on a company -- you know, some of these companies are big trucking companies that have operations across the 50 states and they need support or infrastructure in every state.

So, there are a couple of different models there. I can't tell you that all the companies are working together, you know, in checking, well, is he going to put a station there, or is she going to put a

station there? There's quite a bit of competition, actually, at this point and I think that's a good thing. You know, there will be a few examples where people -- you know, I don't know if they'll be on the same intersection, but they'll be really close and you'll wonder why did they put them so close?

That's the way this -- there are going to be some glitches as the market develops, but it's good to have as many players getting into this market right now if we want to see a rapid transition.

Because as I'll talk about this a bit with the vehicles, one of the issues that's raised with why a company is not going to a natural gas vehicle is concern that there won't be enough infrastructure for them.

COMMISSIONER PETERMAN: Jan, you have a question for Tim?

ADVISORY COMMITTEE MEMBER SHARPLESS: Tim, when you talk about the vehicle purchases are you principally talking about that money would probably most likely go to fleet, kind of a fleet application rather than, you know, just light-duty application out in the general public?

ADVISORY COMMITTEE MEMBER CARMICHAEL: I'm worried that if I answer that question, you won't listen to my next presentation.

(Laughter)

ADVISORY COMMITTEE MEMBER CARMICHAEL: That was a joke, Jan.

COMMISSIONER PETERMAN: He's going to present on vehicles separately, in the next section.

ADVISORY COMMITTEE MEMBER SHARPLESS: Oh, oh, oh, I see, I didn't realize that.

ADVISORY COMMITTEE MEMBER CARMICHAEL: But Jan, that was a joke.

ADVISORY COMMITTEE MEMBER SHARPLESS: Okay.

ADVISORY COMMITTEE MEMBER CARMICHAEL: I'll elaborate on this but, yes, I think we lean towards fleets being, again, the best bang for the buck for CEC's small pot of money.

ADVISORY COMMITTEE MEMBER SHARPLESS: Okay, I'll hold my questions.

COMMISSIONER PETERMAN: Ralph?

ADVISORY COMMITTEE MEMBER KNIGHT: I think, Tim that you're right on target as far as the school bus fleets are concerned. But I think the other picture to that is that we're seeing the possibility of regular ed. transportation be eliminated or reduced in big shots.

But the special needs transportation is what we're going to really survive on. And now that we're seeing some CNGs and other fuels out there for the

special needs is going to open the door for us to be able to replace those old diesel buses that we're currently using in that format with an alternative fuel, too.

So, I think there's a minus, but there's a plus also, too, that we've got to keep in mind with that.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Very good point.

COMMISSIONER PETERMAN: Do any of our Advisory Committee members on the phone have any questions for Tim?

ADVISORY COMMITTEE MEMBER HOLMES-GEN: I have a quick question.

COMMISSIONER PETERMAN: Bonnie, why don't you go ahead and if someone on the line wants to go right after, please do.

ADVISORY COMMITTEE MEMBER HOLMES-GEN: Hey Tim, I'm just wondering if you could give a little more context about your thinking about the medium, heavy duty versus light duty in terms of the recommendations that you're making for infrastructure in vehicles. Where are you seeing the emphasis from that --

COMMISSIONER PETERMAN: Well, if that's a vehicle question, I'm going to put it off to Tim's next presentation.

ADVISORY COMMITTEE MEMBER HOLMES-GEN: We can do that. That's what I was wondering, maybe it's premature. Okay.

COMMISSIONER PETERMAN: Because I want to keep with the infrastructure since we'll have an opportunity, but I think that pertains to that. So, mark that down, Tim and we can move forward.

ADVISORY COMMITTEE MEMBER HOLMES-GEN: Okay.

COMMISSIONER PETERMAN: All right, let's move on to hydrogen and Catherine Dunwoody.

Thank you, Tim.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Thank you.

ADVISORY COMMITTEE MEMBER MUI: Sorry, I was late on the draw here, this is Simon Mui. I did have a question for Tim --

COMMISSIONER PETERMAN: Please go ahead.

ADVISORY COMMITTEE MEMBER MUI: -- regarding the -- thank you -- regarding the LNG infrastructure.

We recently met with a major oil company who's been basically funding a lot of the LNG infrastructure so is that part -- does that play into, I guess, the recommendation to focus on vehicles more so than infrastructure, essentially that there may be some major players entering into this market?

ADVISORY COMMITTEE MEMBER CARMICHAEL: Absolutely, it does. And, you know, we started to develop this perspective 18 months ago, I would say. And, you know, 12 months ago you saw some cash infusions into some of the companies that were doing this and then since then you've seen at least three other companies, with lots of resources, talk about how they're going to get into the retail market for natural gas transportation.

So, yes, one of those is, you know, an international oil company and it definitely feeds into -- you know, it kind of bolsters our perspective on this.

ADVISORY COMMITTEE MEMBER MUI: Okay, thank you.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE DUNWOODY: Okay, thank you, Commissioner and members of the Advisory Panel for the opportunity to present the California road map from our California Fuel Cell Partnership.

I hope that you have a printout of this at your place. If you didn't get one, there may be a few more out front or we'll be glad to get you a copy. It's also available online.

The road map, this is a great opportunity to present this document because I think it helps answer

questions that have actually come up in a number of these meetings over the years.

The California Fuel Cell Partnership has spent well over a year in collaborative discussions amongst our members, as well as other stakeholders, including fuel marketers and retailers who helped us with the financial analysis, looking at what does it cost to achieve this road map.

And it really was intended to respond to the questions that we received about what does it take to bring hydrogen fuel cell vehicles to the point where they can be commercialized in California, and that's what this document works to answer.

Before I get started on that, I do want to mention, as Tim mentioned, his opportunity to test the natural gas vehicle through, I guess, an informal loan program, we also are now launching a vehicle loan program through the California Fuel Cell Partnership. We have a vehicle available here in Sacramento. We will have one available in Southern California.

So, if anyone is interested in taking that opportunity, please get in touch with me or with my staff and we'd be glad to get you into the Toyota EPSI HC Advanced right now, and we're hoping to add more vehicles to that portfolio as well.

And the idea is to actually give the car to people for an extended period of time so that they can take it home and live with it, and come to appreciate its many fine attributes.

Okay, so before I get started here I do want to just remind everyone fuel cell vehicles are electric vehicles. And so the difference is, of course, that you refill it with hydrogen as opposed to plug it and recharge it with electricity.

But many of the other components in the vehicle are the same and so it's a very complementary technology to the vehicles that are being commercialized today, the battery electric and plug-in hybrid vehicles.

Some of the key differences are the range, 300 to 400 miles range, quick refueling. And in most cases what this technology does is it enables the automakers to extend electric drive into a broader segment of their vehicle portfolio, to larger cars and more cargo capacity.

And again, just as a reminder, these are zero emission vehicles. One of the great benefits is they do significantly reduce greenhouse gas emissions.

Today most hydrogen is made from natural gas, although we do have a number of renewable production options here in California, they're in place today and

delivering hydrogen today.

But when you use natural gas to make hydrogen, using a fuel cell vehicle, you're immediately reducing greenhouse gases by at least 50 percent compared to gasoline vehicles.

It is a sustainable, domestically produced fuel and we've gotten really great response from people who have had the opportunity to drive the cars, they really love them.

Some progress to date; we have over 200 fuel cell vehicles and fuel cell buses on the road in California, operating today, over 4 million miles.

Many of those cars are in the hands of every-day customers through lease program by the OEMs. They fuel at eight public hydrogen stations. We've got 14 more in various stages of commissioning, construction, planning. That includes the first round of funding that the Energy Commission provided for stations being developed now.

And so, we're really on track to have about 20 by the end of next year.

What have we learned? We've learned that stations must come before vehicles and that's really the basic premise behind this road map document is that in order for customers to feel confident that they can buy a fuel cell vehicle and get hydrogen fuel when and where

they need it, there has to be a station, a basic station network coverage.

People want fuel near their home, near work, near destinations. We need to have a few connectors in the State.

And stations must be customer friendly. They've got to be well lit, open, long hours, convenient and safe.

One of the key learnings through our process of developing the road map is working with UC Irvine and their street modeling. We've identified that people that buy a fuel cell vehicle in the early market community want to have access to a station within about six minutes of travel time.

And so this was a key aspect of the analysis that enabled us to identify how many stations would be required. That's really one of the fundamental, I think, benefits of the modeling that UC Irvine was able to do for this road map.

This is the concept, a graph that kind of shows the concept of this tipping point, what does 68 stations represent?

By enabling consumers in those early markets to access a station within six minutes, what we're really doing is enabling the automakers to launch a commercial

market and get to volume production. And that then, in turn, will enable the infrastructure to become self-sustaining and people to actually see a business case for selling hydrogen.

And so as you can see, as we reach that tipping point the number of stations will grow but it becomes more self-sustaining at that point.

So, how many stations? I've mentioned the number is 68. They are primarily in the cluster communities that have been identified by the automakers as to where they'll find their first customers. Then the number is built out based on the UC Irvine street model.

The number of stations does balance coverage with capacity utilization. And, fundamentally, the capacity in this 68-station network will support 20,000 fuel cell electric vehicles.

That number is important because that really represents the point at which the automakers can have confidence they can deploy that number of vehicles and that then, in turn, can trigger another process called the Clean Fuels Outlet Regulation that the ARB has on the books in order to ensure that the infrastructure development keeps pace with vehicle deployment.

So, you've probably heard about the CFO

regulation. That's really the trigger point is 20,000 fuel cell vehicles. We have to get to the point where the automakers can actually put that amount of cars into the market in order to trigger the regulation.

There's also connector and destination stations and these, in turn, also seed new clusters for the market to develop.

And all of this is based on our knowledge and our members' knowledge about customer travel patterns, as well as very -- as you can imagine very confidential OEM marketing information.

So, this is what the network looks like. The details are identified in the document but just to, you know, show it on the screen here, on a map, we've got clusters in both Southern and Northern California.

You can see in the Bay Area it's largely focused in the South Bay and East Bay, as well as downtown San Francisco.

And then in Southern California the major markets are in Orange County, Torrance, and the Beaches community, and West L.A., and Santa Monica.

If you've been following our work over the years, you'll recognize these locations, they're the same ones we identified in our action plan a couple of years ago.

So, what we've done with this document is really extend this out to a full commercial launch of fuel cell vehicles.

So, 68 stations does provide the coverage that is needed for customers to have enough fueling opportunities to feel confident to buy the car.

The number of stations is not based on capacity or how much volume of fuel is needed, and this is a little bit different way of looking at it than we have looked at station deployment in the past.

It's essential, first, to get the coverage of the network established and then we can build the volume.

That being said, those initial stations in those early markets have to have the capacity to serve that early market without having to go through significant upgrades.

It gives automakers the confidence to go forward and initiate volume production. It gives customers the confidence to go forward and purchase the fuel cell vehicles. And it gives the market confidence overall to build capacity because they know that the business will be coming, and they'll get the throughput and make a return on their investment.

Funding goals to achieve this; we are very

fortunate and appreciate very much the funding that has come to date through the State of California, both the Air Resources Board and through the Energy Commission.

And we anticipate that with the funding that's already been identified, and that includes the funding that is associated with the draft PON that's out now, that we can achieve 37 stations in California by sometime in the 2014-15 time frame, assuming all goes according to plan.

That's going to leave a gap of 31 stations that we need to achieve that 68-station goal by January of 2016.

We also need to make sure that all the stations in the network can operate as vehicle volume grows. So, the stations have operating costs, these are identified in our operating analysis. When you add those operating costs to the cost of building the station, it shows we need an additional $65 million in incentives in order to achieve this goal. That's in addition to what's already been allocated to date.

This financial analysis was actually conducted by one of the Advisory Board members, Energy Independence Now, and I know Tyson's on the phone.

And I don't go into any detail in my presentation about this analysis, but it's available on

their website and, you know, he may want to add some comments about it later.

What we tried to do is really look at it from a business owner's perspective and we did have quite a bit of input and advice from an expert in the fuel marketing business.

So with that, I'll look forward to the discussion and answer any questions you may have.

COMMISSIONER PETERMAN: Thank you, Catherine.

Tyson, did you want to make any comments?

ADVISORY COMMITTEE MEMBER ECKERLE: I think Catherine did a great job. And if anybody has questions about the financial analysis, I'd be happy to answer that.

COMMISSIONER PETERMAN: Thank you. All right, so we already have one question in the room, Eileen.

ADVISORY COMMITTEE MEMBER TUTT: That's Catherine. I guess my question for you is I understand the funding needs, the financial needs and I'm wondering, the Commissioner earlier said that there's been significant private funds that have complemented these incentive dollars from AB118, and so in your assessment is there assumption of some match funding or -- I mean I know Carla was -- Commissioner Peterman was talking about even, you know, $1 million can

sometimes leverage up to $100 million.

So, I'm just wondering, I'm assuming that because I think that's really important. I don't think that the incentive dollars should be used to fully fund any of our technologies. So, I'm just sensitive to that and I'm wondering is there an effort to try to get at least match funding for the incentive dollars that hydrogen stations would get?

ADVISORY COMMITTEE MEMBER REPRESENTATIVE DUNWOODY: Yeah, the analysis that Tyson and his team conducted looked at it from a stand point of what we call a cash flow incentive.

And the assumption is that the business owner takes on the risk of going out and getting a loan to put in a station, and assumes the operating costs and maintenance costs of that station.

And the idea of the incentive calculation was to be able to offset their losses in the early years based on, you know, making sure they're not getting discouraged and, you know, closing down stations that they've started because it's going to take a while for that vehicle volume and the throughput to grow.

So, yes, it does make an assumption that there's business owners that are willing to go out and, you know, put their capital on the line to get a loan, to

make that station happen.

We also backtracked through another -- coming at it from a different way, the more traditional cost share approach, and that approach assumes that, just as we've seen in the past, that proponents are coming in with something on the order of a, you know, 30 to 50 percent cost share.

COMMISSIONER PETERMAN: Yeah, I'll just follow up on that and say that with the two solicitations so far, at least the one that's been done in a draft, there was a cost share that was required, I believe 30 to 50 percent.

And also, Catherine, you touched upon something which -- something that I think the Energy Commission needs to consider in terms of how do we provide funding? Primarily, we do it through direct grants.

But the proposal that the -- that's been presented by the Fuel Cell Partnership, when they were looking at the CFO and other types of funding, was something where you're helping pay back loans.

And so we're also open to hearing from you all about if there are better ways to provide funding. Of course, we have to work within our structures for providing funding, but we're open to if our process isn't always the best way.

Other questions? There's a gentleman in the audience of the room, so I'm going to let him ask a question. And, Joe, were you going to -- were you reaching, as well? Okay.

MR. DAVIS: Bob Davis from --

COMMISSIONER PETERMAN: Oh, sir, you'll have to press the button.

MR. DAVIS: Right there.

MR. BENNETT: Hello, I have a question.

COMMISSIONER PETERMAN: Oh, well, we've got someone who's offering one up in the room and then we'll take whoever's on the line. Thanks.

MR. BENNETT: Okay.

MR. DAVIS: How's that? Okay, my name is Bob Davis, HomeH2.

I think that it would -- well, I've seen several hydrogen stations in the vicinity closed down for lack of business.

Now, Tim, your vehicle will run on hydrogen. I think we have millions of cars in the United States that will run as well on hythane as they will run on compressed natural gas.

I have a hydrogen station and I run on hythane. I use a state car that was retired years ago. Your car will probably -- you'll use a mixture of 40 percent

hydrogen with compressed natural gas.

But nobody is getting the word to the millions of compressed natural gas vehicle owners and that's the reason that our hythane stations are closing down for lack of business.

I'll be happy to go in detail with anybody or any group, at any time. And Tim, in the meantime, if you want to test your car with hydrogen, I'll produce the hydrogen for you.

COMMISSIONER PETERMAN: Well, thank you, sir. Appreciate folks proposing marriages between our different funding categories, as well, and that's the first time I've heard of that term, "hythane", so that's very interesting.

I don't know if anyone had a comment, otherwise I'll turn to the question on the line.

MR. BENNETT: Hello?

COMMISSIONER PETERMAN: Yes.

MR. BENNETT: Hi. Okay, I have a question on --

COMMISSIONER PETERMAN: Who is this, by the way, can you identify yourself?

MR. BENNETT: Michael Bennett.

COMMISSIONER PETERMAN: Okay.

MR. BENNETT: Michael Bennett. Yeah, I'm listed online there.

So, I have a question of gas versus liquid. It seems to me, in the presentation that I just saw that, you know, you're going to have a lot of consumers that are going to be a little bit afraid of, you know, some gas leaking out versus some liquid spilling on the ground, sort of those issues.

So, I wonder does anyone have any data to support either you build a new infrastructure, as they're trying to do here with 68 stations, or do you use an existing structure, which means gasoline stations that take liquid, what's the safety concerns between putting a gaseous substance out there and the existing -- all the stations we have already that take on liquid?

MR. STAPLES: I'll be glad to answer that.

ADVISORY COMMITTEE MEMBER REPRESENTATIVE DUNWOODY: I was just going to comment, this is Kathryn. I'll be glad to provide an entire presentation on hydrogen safety, if that's the interest of the Advisory Panel, at some point in the future.

COMMISSIONER PETERMAN: Sure, I think that would be useful.

And who said they could answer that on the line?

MR. STAPLES: Well, I can because my name's Paul Staples, I'm with HyGen Industries.

COMMISSIONER PETERMAN: Hi, Paul, how are you today?

MR. STAPLES: Very good and thank you for the opportunity.

First of all, just to answer him before I get to my question, hydrogen is 14 times lighter than air. If you have a leak in it, it dissipates immediately. You almost have to have an ignition source over the leak in order to get it to light.

And if you take care in placement of your systems, you won't have that problem. So, it's actually safer than gasoline, or any other liquid fuel, or any fuel for that matter because it basically is that way.

Liquid falls on the ground, lights up, that's a fire hazard. Okay. Hydrogen leaking into the air, you have to go out of your way to try and make it a danger, okay. So, that's the quick and short answer.

All right, now, I had a question in reference to funding, and the private investors and everything. You know, there's a reason why government does these things. The government funded the rural electrification. Up until about 50, 60 years ago most people, other than big cities, had no electricity, okay. The government came in and put that.

The Hoover Dam would have never been built by

anybody with private money. Nobody would ever have invested in that because infrastructure requires amortization over a period of time for it to be realistic and to be able to be usable.

Private investment wants their money right away, okay. Now, once it's going and up and running, then private investment will come in because they can make money off of it immediately, which is the appropriate role of business.

But government needs to fund these things and they need to fund them to the point to where, you know, the risk that the private sector will put in, in partnership with it, will not be so significant that they can't get their money back if it doesn't succeed.

So, it's very important that government provide a significant portion of the funding, and the cost shares should be high. And the cost shares should go to the cleanest option, okay.

The cleanest option it should be. If you want to do something that's, you know, fossil fuel, or hydrogen, and all that, and with the carbon footprint and all that, fine, you pay for it, okay.

But if the government's going to be funding it with tax dollars, we have to choose the cleanest and most sustainable option, and that's renewable hydrogen.

And if that's the approach that needs a -- that's the approach that needs to be done. It can't be done any other way.

And you have to give incentives for small business because small business is being shut out of this process. It's being shut out with DuPont, it's being shut out with everything else that --

COMMISSIONER PETERMAN: Mr. Staples, we appreciate your comments. I'm going to have to ask you to wrap up, though. And we've also appreciated your presentation on our three workshops on the topic.

MR. STAPLES: Okay, that's basically my comment on the issue of funding, and the amount of cost share, and government's participation in it. Government must take a leading role in this because it is in the best interest of the public. So, thank you very much.

COMMISSIONER PETERMAN: Well, thank you.

MR. DAVIS: Can I have a chance to respond, quickly?

COMMISSIONER PETERMAN: Well, I'm just going to make a comment and I don't know, really, if there was anything there to warrant a response. But I think it was a good comment to have on the record.

And I just wanted to make a comment, an observation about we were talking a bit about safety.

And many of you may be aware a few months ago there was an incident at the Emeryville hydrogen station and it provided an opportunity for those of us who have been involved in funding, and in this space, to really comment on safety.

And one observation I've had is that we are working with relatively new fuels and technologies. And no technology is perfect and 100 percent safe. We've all seen a car on the road, a gasoline car that's caught on fire.

And I think what's important is if we're working in the infrastructure area, is to make sure that we have first responders who are trained to deal with these types of fuels, and vehicles, and we heard a presentation about that earlier.

As well as, you know, we start to get consumers comfortable with the idea that everything has risk, but there are ways to minimize that risk.

And we realize we need to be doing more outreach and discussion about that. And I would encourage you all, as well, because we're all the converted, who are more familiar with these technologies.

But, you know, oftentimes we talk to the general public about hydrogen, they'll think of the Hindenburg or something like that, which is not the right reference

point for what we're talking about, now.

And so I think those questions of safety will continue to remain and will probably escalate as we see a wider scale deployment.

MR. DAVIS: Okay, but Commissioner, my take home point is this, if you're going to spend whomever's dollars on a hydrogen infrastructure, in building this infrastructure you need to show a cost benefit relationship that I have not yet seen. In other words, show us that it's going to be improving the air, at the same time equivalent safety. That's the thing that I have not seen, yet.

COMMISSIONER PETERMAN: Well, thank you for your comments. And as we talked about earlier in the day, we do do a benefits report, which reports back on different projects, as well as a lot of metrics, including greenhouse gas reductions, air pollution, and such.

And I think we had, as was mentioned by I think Jim, in preparation of the PON that's out in draft right now, three workshops and we got a lot of valuable feedback on how to improve that solicitation. And also, it's out there in draft, now, for folks to comment.

And so I'm sure, appreciate you giving these additional comments on the record, in that process as well.

We're now going to move on to electric charging. Thank you, Catherine.

And Eileen Tutt, the floor is yours.

ADVISORY COMMITTEE MEMBER TUTT: Thanks. I have my phone with me because I have some cheating notes on it. Here we go, okay.

So, I'm going to talk about electricity, obviously. CalETC is an organization that has both utility and automaker members. We focus exclusively on battery electric transportation, very broadly though. We're not just talking about light duty vehicles, we're also talking about electrification of the broader transportation sector.

And I want to make a few points before I start because I think sometimes people question why like an electric utility really is so committed to vehicle electrification.

And it's understandable the automakers are very committed and you can see that every major automaker, now, has a car they're bringing to market.

But utilities, it really makes sense for a utility from a business case perspective. It's not just that they're members of the community that care about air quality, and care about greenhouse gas emissions, and all of that.

But electric -- transportation electrification provides a real tangible grid asset that benefits everyone who uses electricity. We more efficiently utilize the grid when you have electric vehicles in the marketplace.

And so that is why you'll see the utility industry, and not just the car industry, but working with the car industry, and the charger infrastructure folks, the whole gamut of those of us out there that are trying to promote this technology and make sure that we have market success.

But you'll see that they're very committed to having -- to giving customers a very positive experience when they purchase their plug-in electrics or when they're thinking about it.

I want to point out that electricity is ubiquitous. Everywhere you go you're going to have access to it.

It doesn't have some of the same challenges that some of the centralized fuels may have because the truth is you can go out and buy a car today, an electric car, and drive it home and plug in. You don't need a special charger, you don't need, really anything, except a plug and pretty much everybody has that.

And so the value of these vehicles is that --

and the infrastructure needs is that you can leverage an already existing infrastructure that is -- that has been invested in by everyone in this room, and everyone that uses electricity.

So, the technology, the infrastructure needs and the technology needs, the beauty of electricity is that you get to leverage an existing system and actually increase the efficiency, and make it more beneficial for all of us.

So, I'm going to focus on three things today in terms of the AB118 funding and that is outreach education, workplace charging, and dealer engagement in terms of what, I think, this funding -- where I think this funding could be helpful.

And after some conversations with you all, I have two other additions for the staff, hopefully taking notes.

I think that thinking about the youth and reaching out to youth is important, and I'll go into that in a minute. And also, I really think this issue of environmental justice and getting these vehicles into the communities, I think this funding could be utilized for that and it would be very beneficial.

And I'm not going to go into this. I wanted this slide on the record just saying, you know, there is

a tremendous amount of effort right now. And when you talk about leveraging private capital, you know, there are billions that the automakers are spending and there are significant investment by the fuel providers, including the utilities and the plug-in charging folks.

So, we'll start with workplace charging. And we all know this is really important because it's a huge market driver. If somebody's considering a vehicle, whether or not they have workplace charging is something that they think about it. It can essentially double their range if they have workplace charging.

Also, you can use just level one charging which doesn't necessarily -- and by level one I just mean like a wall plug. And it doesn't necessarily have to be the wall plug. There are charging systems that look like a higher voltage charging system that are level one, that are attached permanently. So, you don't have to haul around a cord, it's just there and you plug in your vehicle.

And for workplace charging, where people are parked for eight to ten hours, it can be a very attractive low-cost option.

It can also be leveraged in many cases for a multi-family dwelling, or multi-unit dwelling purposes. Getting these vehicles to people with apartments is

hard. A lot of apartments happen to be co-located near workplaces, so the degree to which you can leverage the two needs, there's a beautiful synergy in terms of workplace charging.

And then I just want to mention that the utilities are very invested in this workplace charging effort, they reach out to all their commercial customers.

The PEV Collaborative, which is a group, a very broad group of stakeholders, including the environmental community, is working on workplace charging.

And CALSTART, Jaime, is a really lovely program that supports workplace charging and I think will benefit all of our efforts.

I also think outreach and education is really important. And again, I don't -- I think it's important that the State dollars leverage the private funding. And so I'm going to highlight two programs that are being developed or exist today for outreach and education.

And this slide is a little wordy, but I just want to make sure everybody's aware that the Electric Drive Transportation Association, and I know the CEC staff and Commissioner is aware, that they are creating

a very large campaign that is intended to create a very trusted source for the American public in general, anybody who's thinking about an electric vehicle.

They want to make sure that the funding is transparent, that the process is transparent, and there are very, very influential business groups that have invested in this.

So, the degree to which this funding can be leveraged and support this will be very valuable. Because just like the Commissioner was saying, when you can go out and you're fundraising for education and outreach and you can say the State of California gave us X it makes, I will tell you, all the difference in the world. So, very much this is important for electrification. Especially in this early market as we try to get to a larger scale implementation.

And then there's also the EEI, Edison Electric Institute, has an education campaign that's more focused on energy security issues, environmental electricity as a fuel that's very attractive, that kind of thing.

So, those two campaigns I just want to raise with you and I know they're on your radar.

And then, finally, we're -- well, this isn't going to be finally because I have the two other ideas really quickly.

But dealer engagement, the utilities, the automakers have invested heavily in getting the dealers engaged, but it hasn't been easy. And this is where we could really use help. Like it's just hard to get dealers trained. You know, it just is.

And so anything that can help make that happen and more successful, we appreciate. And I actually think it could be broader. I think we could look at natural gas, at hydrogen, other vehicles in terms of this funding for a dealer education campaign because everybody who brings these vehicles to market and tries to get them into the mass market is going to have to deal with the dealer education issue.

And it's been challenging. Not that they aren't willing, it's just a challenging issue.

So, finally, our -- well, let me just mention two other things because I do think -- I notice as I drive, I've driven an electric vehicle for the last 11 years, and we just got a new one.

And I will tell you the number of young people that come up to me, college age, and in their twenties, and for me thirties is young --

(Laughter)

ADVISORY COMMITTEE MEMBER TUTT: -- come up to me and talk to me about the vehicle. I'm just so

impressed. And I think if we could think about engaging the youth, things like Zip Car cars out there because that's where the -- kids aren't going to own cars. My son doesn't want a car, he doesn't want that kind of a -- but he'll go out and get a Zip Car or he'll borrow our car.

But this is very important that we think about the youth component here.

And the same with environmental justice, we need these vehicles to be in communities, in minority communities and low-income communities.

And I think things like the Zip Car can do that, but I also just want to highlight the fact that the non-road sector could really benefit because a lot of these low-income communities are in manufacturing areas. And if we can electrify those manufacturing, the plants, then that will benefit directly those communities and they'll really directly recognize the benefit of electrification.

So, I think those two things are important and I'm going to send your staff a note because I know I didn't have time to include it in my comments.

But just a couple early market observations and we are finding that many, many people are buying these cars, coming home and plugging them in, and not buying

any additional infrastructure. They're just plugging in a regular wall plug.

We're also seeing that workplace charging is a key market driver. People ask, you know, am I going to have charging at work? It doubles their range. It makes the vehicle more attractive. A lot of workplaces are thinking, hey, this is a good way to keep and retain employees. It's an amazingly powerful asset and we need -- there's definitely work that needs to be done there.

There are still significant challenges with multi-unit dwellings. I think the workplace charging can be leveraged.

We've also noticed that small pricing differences between the electricity, like just say if you charge between midnight and 7:00 your electricity is going to cost half as much. You'll get a huge move to that time.

We've even looked at like off-peak versus super off-peak. It's just that word super, people will gravitate towards that charging time.

So that is a big motivator. The cost of electricity is huge. The empowerment that people feel when they are not -- you know, when they aren't limited by the fact that they can only pay what the gas station

wants them to pay, they have all this opportunity and option. They can charge when they want, where they want, they can pick their time to reduce their costs. The people love it. It's a huge market draw and they're really excited by it, much more than we thought.

I mean this freedom from the pump is -- there's something in the Volt world or the plug-in hybrid world called gasoline anxiety. So, it's real, it's happening. We've got a lot of cars out there. It's a very exciting time but we still have a long way to go if we're going to get past early market.

Thank you.

COMMISSIONER PETERMAN: Thank you, Eileen. I just had one follow-up question about the dealer training. So, what are the manufacturers doing and what's the -- I would imagine they would be the right conduits for thinking about dealer training since they're familiar with the vehicles, but do you have any sense of what's going wrong in that relationship?

ADVISORY COMMITTEE MEMBER TUTT: Well, remember that the automakers -- well, I'm not going to make any parallels here. The automakers don't own the dealerships. So, they do, they really do work with the dealerships and they especially focus on places where they think these cars are going to be sold.

But it's just there's a lot of dealers, they just -- it's hard to change.

And so, yes, the automakers are very engaged with their dealers and all dealers. The utilities in their local service territories are very engaged. It's just been more challenging than we would have thought.

COMMISSIONER PETERMAN: And I imagine one of the challenges is even the manufacturers are less familiar with the California electricity market and so knowing exactly how to deal with your local utility is not something that manufacturer, nor that dealer, would be able to answer.

ADVISORY COMMITTEE MEMBER TUTT: Right, even the state incentives, they aren't used to people getting money for buying cars from the state. That's an unusual concept.

So, a lot of this stuff is sort of new and different and it just makes it more challenging. So, I think we are going to need further engagement there and I think it would benefit -- I think we should expand it to other fuels as well. Like if we're going to put money into it, it might be like a dealer campaign that really targets alt fuels and alt fuel programs in general, off the top of my head.

COMMISSIONER PETERMAN: Thank you. We'll now

turn to some questions from the Advisory Committee members. Jan?

ADVISORY COMMITTEE MEMBER SHARPLESS: Yes, you exude excitement, which is good. But the question I have is where the funding is now, as far as the 118 program, are you happy with that mix? I couldn't quite tell.

I mean it's never enough but have trends changed so that there are some areas that you feel there ought to be some adjustments and tweaks as to where the money is going?

COMMISSIONER PETERMAN: And Eileen, feel free to answer. I know we said we're not talking about investment funding but you were asked directly.

ADVISORY COMMITTEE MEMBER TUTT: Yes, I think that there are and I think we have reached out to staff. Staff's been very receptive. For the outreach and education, for example, we've found it's going to be more important than we thought.

I think the -- what I've found, at least in working with the Energy Commission staff is that it just keeps -- this process just keeps getting better.

And I know we need -- Bonnie is the most vociferous about this, but we do need to get a bullhorn out there because the program started a little bit

rocky. I don't have that anymore but, yes, I would say the issues that have arisen are different.

I think getting money into the hands of local government is really important, much more important than we thought because a lot of these issues are local issues dealing with dealers, dealing with their customers. There's just a different feel when your local reaches out to you than state government.

So, there are certain tweaks that I would like to see happen and we have been actively engaged with the staff.

ADVISORY COMMITTEE MEMBER SHARPLESS: I was just trying to marry the comments between what Peter told us about, you know, the $2 million a month in terms of buy down, and what Eileen was saying with where the 118 program is.

COMMISSIONER PETERMAN: Well, Eileen was out of the room when Peter made his comments. And so perhaps I will just make the broader comment that, as I've noted before, the program is over-subscribed by a matter of five in the first couple of years. And so I would think it's probably fair that most parties will say that more absolute money is needed within each category.

And Eileen has said before, in past meetings, about the need for incentives, continued and a larger

number of incentives available for vehicle buy downs.

So, we'd heard it from Peter that we're seeing about two million of interest in the CVRP program each month. And so just to bring those points together.

ADVISORY COMMITTEE MEMBER TUTT: Yeah, I should have mentioned that because I was worried about the haircut affecting the transfer to the CVRP. If we could just push that one out, just push it over to the CVRP before your haircut because the issue is not just that it's running out of money, the issue is that the uncertainty in the marketplace, not knowing if you're going to get an incentive or not, it does harm the market.

And so, we just need more certainty there and that's going to be an ongoing issue that we'll work with you on, and certainly with Peter and his group. But that does definitely need more money because it -- if you get your vehicle and your dealer does happen to inform you about your opportunities, which they are pretty good about that, and then you apply to the state and you don't get it that will be a press story; that will be negative.

So, we do need to do the best we can to make sure that's fully funded.

COMMISSIONER PETERMAN: And I appreciate your

observations, Eileen, about -- on how you initially answered Jan's questions about within the infrastructure space where you might prioritize or not.

And Tim, you also did something along those lines, talking about within that. And I appreciate that because oftentimes we hear about, well, move money away from a whole other category, but we also want to make sure we're allocating within a funding category the best way possible, as well.

Are there other questions in the room, anyone around the table? Please, Bonnie.

ADVISORY COMMITTEE MEMBER HOLMES-GEN: Thanks Eileen, I appreciate your presentation, it's very helpful. And I'm looking forward to the broader and more in-depth discussion of this at the EV summit later this month.

And I just -- I wanted to underscore, from our Lung Association perspective the -- you know, the importance of what you're talking about in trying to get these vehicles to a broader range of buyers, broader range of income levels and into EJ communities.

And I just wanted to flag that, I think that's really important and we would like to help to work on that, and brainstorm ideas, and think about ways that we can tailor some of our recommendations, as we move

forward, to try to help with that effort.

COMMISSIONER PETERMAN: Thank you.

Advisory Committee members on the line, any questions for Eileen?

ADVISORY COMMITTEE MEMBER MUI: Hi, Eileen, this is Simon Mui with NRDC. I was fascinated by your kind of suggestion about focusing on sort of the dealer side. And I'm just wondering, has anyone talked, or have you heard anything about incentives, you know, kind of incentive or reward type structures for -- I mean raise to the top, you know, dealers who sell the most vehicles in a month, or just recognition of those dealers as a kind of a way to maybe draw attention?

I mean one automaker I spoke with has mentioned, you know, even just like a free lunch dealers will work for, will push vehicles to try to get little prizes like that.

ADVISORY COMMITTEE MEMBER TUTT: Yeah, Simon, that's a really good point because it is -- that is how the automakers -- that's their -- you know, they don't own the dealer, so that is one of the big issues with the dealers is that the automakers do reach out and offer special programs for dealers that sell these cars, or sell the most and that kind of thing.

I know when I bought my most recent electric car

I got, I don't know, seven different e-mails about my dealer experience because they do -- they are trying to track what's happening at these dealers. And it's much more complicated than if you buy a gasoline car. You will get -- your automaker will reach out to you about your dealer experience.

And so there's a lot of work going on, I don't want to pretend that there's not. It's just more challenging. And any kind of -- I mean I think it just might be worth throwing in the mix to try to think about.

Because it's not just going to be our electric cars, this is going to translate to every alternative fuel and everything's going to help.

So, yes, there are definite programs the dealers are -- the automakers are really trying to collect data on what the experience was, how can it be improved, what do we need to do.

The amount of data that's being collected in this early market is absolutely astounding to me. I mean it is so clear to me that this industry is very committed to this technology and wants to see it succeed. And that's happening in the dealer world, it's just there's a lot of dealers.

COMMISSIONER PETERMAN: And just also one

observation about the dealers, as we think about how to get, ultimately, the consumer education and where the focus is, and dealers do have a disincentive, sometimes, for some of these vehicles because they don't get to do the maintenance on them, for example.

So, there are certain -- there's just certain facts that might not make them as willing to sell these more than others. And so thinking about what type of information we need to get into consumers' hands, and how do we get it through other means, as well as the dealers, I think would be important to consider.

ADVISORY COMMITTEE MEMBER TUTT: Okay, and then before I leave, I just want to say that I do want to get together with your staff, especially about just when you think about an infrastructure plan, we've kind of come up with some criteria about where the -- you know, where the infrastructure should go and how to make that plan. I just didn't feel like I had time to do it today, in this forum, but I do want some time to talk to you about -- I mean Catherine did an excellent job on the fuel cell and we've done a similar kind of look at where is the -- how do you look at where to place public stations, in particular.

And I know that we've had some of my members have had conversations with Leslie, but I'd like to

follow up on that.

COMMISSIONER PETERMAN: That's great, happy to do so.

And while you just mentioned Leslie; Leslie, I'm going to put you on the spot and ask you if you could speak for just a minute about the PEV Readiness Grants, because I think that's unique to what we're doing in the EV space. And folks should just be aware in case we want to think about similar models for other technologies.

MS. BAROODY: Sure. Yeah, so last year we made awards to ten planning regions for $200,000 per region. And that was primarily to address the streamlining of the permitting and inspection processes to help them establish regional infrastructure plans and to provide funding for consumer education and outreach.

So, I think most of those plans have been -- or most of those agreements have been approved at business meetings and they are in process right now. I think there's a two-year time frame.

And some of them have overlapping DOE funds. And the DOE grants are wrapping up here very soon, and so we'll start seeing some reports out of those regions.

COMMISSIONER PETERMAN: I'm cognizant, as we're doing the policy here in Sacramento, there are folks on

the ground who actually have to figure out what the right permit forum is and, you know, local governments are strapped for resources, like everyone else is. And the PEV Collaborative, I think has been very successful in putting together products for local planners and utility folks to use.

And we welcome comments about whether -- how we should be thinking about that topic more broadly, and how we should be thinking about it for other technologies.

If there's no other burning question for Eileen -- seeing none, I'm going to now turn to the advanced technology and vehicle demonstration category. Thank you, Eileen.

And I think we're going to have a little bit of --

MR. STAPLES: Is there any chance I could make a comment?

COMMISSIONER PETERMAN: Yes, may I ask who's speaking?

MR. STAPLES: Yeah, this is Paul Staples with HyGen Industries, again.

COMMISSIONER PETERMAN: Please.

MR. STAPLES: It's just a comment on what I recently heard. I'll try to be brief.

COMMISSIONER PETERMAN: Please, I request that you do.

MR. STAPLES: I know, I'll be as brief as I -- you know, I mean I remember (indiscernible) coming on the David Letterman Show and sitting there, pulling out this cord saying this is my infrastructure, a 20-foot cord.

You know, I almost had an Elvis moment there, okay, because it's not, okay. I mean you're going to have to upgrade the lines to everyone's home, okay, to every residential neighborhood, including transformers and lines, okay.

Now, you want to talk about infrastructure costs, that's billions, maybe hundreds of billions nationwide. Okay, so that's a misnomer.

Second of all -- okay, misinformation.

Second of all off-peak; we start having a significant amount of people charging their vehicles at night there will be no more off-peak, everything will be peak 24/7. So, that's just -- that's another misinformation.

And, you know, so from the stand point of -- and also, the charger, you got to pay for a charger unless you want to have a trickle charge that will take you two days to charge your all-electric vehicle. And that's --

you know, so there is costs associated with it; upgrade of lines, $5,000 for every home to do a charger and the lines, and the infrastructure, and off-peak is not going to be off-peak for very long.

And you have to look at this from a macro point of view rather than an individual, okay, I can plug my car into it and charge it. It's not that simple.

And also, fast chargers, these quick charge machines that do it in 15 minutes get 85 percent of it, that's a real danger factor, number one.

Number two, it cuts down on the efficiency so, therefore, your efficiency quotient is eliminated over fuel cell electric vehicles.

So, from the stand point of battery electric vehicles, it's the battery, it's not the electric drive. The electric drive is an excellent technology and I thank that so much work was done on it in the late eighties and the early nineties but --

COMMISSIONER PETERMAN: Mr. Staples, I'm going to interrupt you here but to say --

MR. STAPLES: It's just not going to make it.

COMMISSIONER PETERMAN: -- you know, just commenting on your comment, you know, I think you've touched about the fact that to think about deploying EVs you really do have to have an infrastructure that

includes the utilities as a part of that conversation to figure out where the demands on the system will be.

And, indeed, Eileen's organization includes utilities because they are really front and center at some of these discussions, and looking at what will be the impact on the distribution system.

And we heard, actually, in our IEPR process this year, the need for more comprehensive distribution system planning that incorporates the potential for EVs.

I'll also note that, as many of you are aware and Jim McKinney mentioned earlier, the Governor issued a zero emission vehicle executive order earlier this year and has a team that's working together to create that plan.

And as a part of that plan you have participation from the Public Utilities Commission, which is looking at rate structure and infrastructure. You also have utilities, you have the Energy Commission.

And, ultimately, on the points you raised that's really where the Commission is focused in terms of thinking about planning and making sure that we're not eliminating anything that needs to be considered.

But I think your overall point is that all fuels and vehicles are going to have costs associated with the infrastructure, and the vehicles and it's important for

us to appreciate that.

MR. STAPLES: Exactly.

COMMISSIONER PETERMAN: So, thank you for that comment.

We're going to move on, now.

MR. STAPLES: Thank you for the time.

COMMISSIONER PETERMAN: You're welcome.

We're going to move on, now, to the advanced technology vehicle demonstration. I think we're going to have a few speakers, speaking for five minutes each, so let's see how you can -- either you can all come up, individually, to the microphone or -- yeah, that's your option.

(Laughter)

MR. HALL: Okay, afternoon everyone. Thank you, Commissioner and members of the Advisory Committee for the change to speak a bit about cleaner truck technologies. I don't think I need to try that hard to convince you that these things are something that we really, desperately need.

So, I'm going to start by giving some thoughts and insights that have come out of the California Hybrid Efficient and Advanced Truck Research Center, also known as CalHEAT, which is a CEC-funded effort looking at advancing technologies for this sector.

CalHEAT's got a really impressive technical advisory group of 40 or so people from all different parts of the industry, so the insights I'm giving you today have been vetted with several real experts. So, it's a good time for the disclaimer that I am definitely one of these real experts.

All of the guys from our team, who would have made the most sense for this presentation, are currently at our High Efficiency Truck Users Forum Conference in North Carolina. So, I'm a bit of a stand in and if there are any technical questions, I may just direct you to them later on.

Fortunately, we will have a few other speakers up here that you can go into some technical details. That will be Kevin Wing and Mike Simon.

So, to start very, very high level this is -- you know, from the visioning process, one potential scenario for the truck future that we need to see, if we want to see anything that looks even close to this, we really have our work cut out for us.

That was a view sort of looking at the truck sector overall, but it's really a pretty diverse sector. And so one thing that CalHEAT did, at the outset, is say let's look at how these trucks are used and break them down into sort of categories based on use and duty

cycle, which is very helpful in thinking about what technologies make sense in different applications.

They arrived at these six different truck categories. Clearly, the Holy Grail here is to really clean up the big rig trucks that are up at the top, your 18 wheelers.

And we do need some demonstrations there in the near term on Class 8 platforms, such as regional heavy haul or specialized corridor applications, like you might see on the I-710.

And I know Matt Miyasato from South Coast is here and may speak to that later.

But Class 8 trucks are not the be all and end all; there are a lot of other sectors that we need to clean up.

And it's important to note that sometimes the best place to launch a new technology is not necessarily jumping straight to those Class 8 trucks, but putting it in some of these, what we call vocational trucks, such as urban delivery trucks where you can get some early successes, prove out the technology and then scale it up over time.

I didn't realize this was going to go so slowly. So, looking beyond what type of trucks there are, CalHEAT then sort of spent some time thinking about what

the differently technology strategies are that California should really focus on, and came up with these 19 strategies that fall into, really, three different groups.

And today I'm going to focus more on advanced electrification and engine and driveline efficiency, as the body and chassis stuff largely is already happening, and is sort of lower-hanging fruit where we don't need to put limited State dollars.

There are links and synergies here, you know, with the long list of technologies, but note that some of them sort of enable each other, and so this is not just 19 separate little buckets.

This slide just very quickly shows sort of the main takeaways from the longer CalHEAT road map, which I think many of you have seen. And, really, the key takeaway for this group is that CalHEAT group thinks that you need about $36 million a year going into advanced truck technologies in order to meet our long-term goals.

That's sort of half development and demonstration, and half help with deployment.

And then this slide, which is a little bit busy, shows for each of the 19 technologies kind of a rough timeline of the different stages of development, and

demonstration, and deployment.

And sort of the main takeaway here, since you're not going to memorize the timeline, is just that this is an iterative process. We really need sort of rolling waves and you cannot just sort of do one demo and then be done, and then move on to something else.

If you add up all of the studies, and projects, and incentives that are represented by each of these bars, that's how you get to the 36 million-dollar-a-year estimate on what we think is needed.

And note that a lot of these technologies, as I said, are linked and you can actually bundle more than one technology into a single demonstration.

So, one quick example, if we want to look at zero emission truck movement, CalHEAT thinks that there are several different options that are available for demonstration in the very near term. And I won't spend too much time here as Mike Simon, and I think Matt Miyasato may go into a bit more detail.

So, I'll just sum up and then Kevin and Mike can come up.

But the CEC program is very important, it complements other programs. This is one thing staff asked me to talk about and, yes, there is a super truck program at the federal level but it really focuses on

let's build a prototype and California can then come in and sort of take it the next step towards commercialization.

CARB's 118 dollars and some of the funding at the air districts help with deployment. CEC really fits in nicely with these other programs and so they all complement each other, there's not a lot of duplication. It's sort of a good setup we have.

As I noted, it's an iterative process. Staff also asked me to talk about sort of how could we focus our demos, are there areas that we could sort of say check the box, we've kind of completed that technology?

No, it's an iterative process, you have to keep going. We need multiple rounds of demonstrations and then deployment, and then technology keeps getting better and better, and finally can get market ready and move into heavier and heavier platforms.

So, I wish that there were really simple answers to give but, unfortunately, there are not.

And so now I think Kevin is going to come up and talk from the San Joaquin perspective about some of the nearer term needs and then Mike Simon will speak more to zero emission technologies.

COMMISSIONER PETERMAN: And I'll also add that I was going to invite Matt Miyasato to come up after this

section making comments, so you might as well go after the last speaker, as it will probably tie in. Thanks Matt.

MR. WING: So, I'd like to thank the Commission and the Advisory Committee for the opportunity to talk to you today about what our unique needs are in the valley, and that's really kind of the theme of what I want to spend my few minutes here discussing with you.

In the Valley we've got one of the two worst air quality regions in the State and it drives a lot of needs, and it has a lot of emission reductions that aren't even necessary for us to meet the standards that we're facing from the federal government.

Our existing ozone plan includes these long-term black box measures that identify need for technologies that are beyond what we currently know.

So, we're looking for opportunities to work with demonstration projects and in the Valley we want to be, you know, early adopters of technologies. We'd like to see some of the newer technologies that meet the unique needs of the Valley and will help us attain the standards that we have that, as was mentioned before, we'll have large reduction needs by 2023, even larger reductions when we adopt our new plan and have deadlines in 2030.

In the near zero emission technology category, we're really looking at these heavy duty trucks. We've got the two major north/south corridors in the Valley. Forty-five percent of truck traffic in major California trade corridors occurs in the Valley and that long range travel is the place where we would like to see technology demonstrations and focus on opportunities that meet those needs, specifically.

And we believe that a big portion of that need is going to be not just zero emission technologies, but this near zero emission option where we can find something that is better than what currently exists with the emissions technology that's available, and helps achieve those much greater emission reduction needs, and brings that to the Valley as early as we can, not just to meet that future 2023 and 2030 need, but to bring those health benefits as soon as possible to the population of the environmental justice communities that we have in the valley.

The long haul trucking is that standard category that we talk about, where a lot of the demonstration projects are these short battery electric ranges, where we really haven't been able to talk about what we can do.

But we would like to see some demonstration

opportunities that really target that as a category. And maybe not necessarily look at a specific technology and say, oh, you know, waste heat recovery is going to be our way to achieve this, but this other type of thing, but to say what can you bring as a technology category for long haul trucking, and what can bring the near zero emissions future that we're going to need to see to meet our standards.

I had a brief -- a slide here that I want to just go briefly with. This is our people movement discussion and it doesn't really pertain to the heavy duty and medium duty category that we're talking about, other than we have unique challenges for transit in the Valley. We're a much lower density population. We've got a significant environmental justice community that could utilize transit, and having good ways to bring these near zero emission technologies, not just the long haul trucking, but to form factors that will work for our transit needs and meet the population's demands and desires in order to utilize those technologies are something that we'd also like to see some demonstration work with.

And then, lastly, I want to take a moment to talk about our technology advancement program. In addition to demonstration programs, we've worked with

some advanced deployment projects.

We mentioned, earlier, the HVIP Plus, where we have an add-on to work with the State's HVIP program.

I do want to mention that's not just for electric trucks that are produced in the Valley, we just offer an additional incentive to Valley produced trucks.

In addition to that the Drive Clean, which works with the CVRP in conjunction to allow a larger incentive for people who are looking for the light duty projects.

We're bringing about new projects soon for advanced transit and infrastructure funding.

And then a final note is that we do have available, it turns out we just opened last week, an opportunity for demonstration funding in the Valley, for $4 million, and we have proposals due in the middle of October, October 18th.

I have on this slide the website and e-mail address for where you can find information about that. You can meet with me later and I can give you any information that I can. I even brought a couple of the request for proposals with me, so if anybody would like one, I can give you a copy.

I'd like to see us find a way to work with CEC and their -- you know, the advanced programs.

We do treat greenhouse gases as a score-able

priority. It is something that we do look at that as an added priority and we would like to see, you know, a similar opportunity to work with demonstrations that are working with the CEC funding in order to ensure that we can bring the maximum possible benefit from the funding that we have, and the funding that's available.

And that's what I have. It was a pleasure to give you the opportunity to talk about our plan, thank you.

COMMISSIONER PETERMAN: Thank you. It's great to hear about the additional money that the air districts are putting in place. And when Matt comes up I'll tee up a question, probably for a longer discussion.

But as you were speaking, and I've heard presentations around the 2023 targets more and more recently, and you acknowledged that some of the technologies even to meet current NOx goals are unknown.

And so what I'm struggling with in my head is then what do we need to do? Is it investment in R&D? Is it the expectation that it's now about the demonstration and deployment?

Because 2023 seems just around the corner and so it's just one of those things that I hope that the federal government knows how challenging this is.

But I think it's something we'll all have to put our heads together.

MR. SIMON: Good afternoon everybody, I hope 2023 isn't just around the corner, I'll be 64.

(Laughter)

MR. SIMON: It's a pleasure. I'm Mike Simon from Transpower. I'm passing around, for the people around the table, just a single-page pictorial summary of some of the products that we're developing.

We're a recipient of funding from AB118, we're based in Poway, California, a suburb of San Diego.

Our approach, our focus is on building very large trucks that run on purely battery electric power. And our business proposition is very simple. We believe that these large trucks within a very few years will -- each truck will be able to not only eliminate 100 tons of carbon each year, but will save its operator $50,000 in fuel costs.

And you don't have to extrapolate very far out the way fuel costs are rising, and the way battery technologies are advancing, to see a tomorrow in which a truck, like the one shown on the top of this slide, can save its operator $50,000 a year. And I can show you how that can work.

That then drives you to the realization that

even if your system is fairly complex, as our systems are, and fairly expensive, you can still recover the cost of these systems in three or four years if you can save $50,000 a year.

So, that's our basic business proposition; to offer a very sophisticated, very advanced system that's fairly costly, but that makes business sense.

Our approach is vertically integrated. That means that we build our products at three different levels, as shown on this chart.

On the bottom level we start with the basic components that do the basic functions, and there are three or four basic functions on a big electric vehicle, as are on any electric vehicle.

There's a propulsion function and that's the electric motor that moves the vehicle.

There's the control function, which is how you control that motor.

There's the energy storage function, which is how you keep the electric energy on the vehicle.

And then there's the charging function of how you recharge that battery pack.

And so we develop components that do all those things, then we assemble them, moving up the vertically integrated chain here and we integrate them into

subsystems, and then we put the subsystems into the vehicles.

I just wanted to show, briefly, the impact of the Advanced Renewable Fuel Program, AB118, on Transpower.

On the left, the bar graph shows here that just 18, 19 months ago, when we got our first AB118 grant, and we recently received a second grant, but we received our first AB118 grant in February of 2011.

And at that time the company was really purely embryonic, that was we had zero revenue and, really, zero employees.

We just recently signed our second grant agreement, within the last few weeks, and you can see the jump up in the company revenues, shown by the green bar, and the number of employees shown by the blue bar, in just the 18 months and the catalyst that this grant has provided.

By the time -- we're not even complete with the second grant, by the time we're halfway through in the middle of 2014, less than two years from now, you can see the growth that we're projecting.

You know, we're projecting to have grown from, really, a single-person company to over 40 employees, and $14 million in revenue.

And this is a -- if you do the math on how much tax revenue this is going to generate for California, and this doesn't even include all the additional jobs from all our suppliers, most of which are based in California, and all the service providers that the income from our employees, you know, create workforce, so there's just a multiplier effect here.

You're probably talking about, within a couple of years, over 100 jobs created by this very single, $1 million grant we got less than two years ago.

So, I'm living proof and our company, Transpower, is living proof that this program has a tremendous impact on the economy, on jobs, and on innovation in our State.

Critical needs, just looking at the future, I mentioned the four basic functions that the -- you can break down different ways, but there really are four critical need areas that we feel should be focused on, technology-wise.

CALSTART, Jamie from CALSTART, showed 19 different technology areas. But just focusing on the battery electric there are four main subareas that we feel are very important.

And again, there's the battery energy storage. We feel there's a lot, there's much money being invested

nationwide and around the world in the battery cells, themselves, so we don't see a huge need -- I don't think the Energy Commission can make a big impact, with the kind of money it has, getting involved in battery cell technology.

But where there can be, I think, a lot of bang for the buck in this area is how you integrate these cells into larger packs that are needed for these very large vehicles.

How do you integrate them safely? Simple, seemingly simple things like contactors and fuses, and how you make the battery pack safe, how you prevent an arc from happening and an accident from happening if somebody pulls out the plug when it's still live?

These are problems that need to be solved and that won't take that much money to solve but that if they aren't solved could have tremendously negative impacts.

Also, battery cell monitoring and balancing of cells on battery packs, very important to maintaining the life of these battery packs.

I'm not going to go into the same level of detail in all these areas because that battery energy storage really is the Holy Grail of electric vehicles.

But there are additional advances that can also

be made in the areas of power electronics, reducing the cost and the size of the inverters that control the motors, and that also can be used -- in our case, we cleverly use our inverter to also charge our batteries, which is unique, so you don't need an external infrastructure for battery charging.

Propulsion, brushless DC motors is a technology that's come a long way and a few million dollars, or even a few hundred thousand dollars to that technology could potentially reduce the cost of electric motors by a factor of ten. That's a technology we recommend having some funding invested in over the next year or two.

And then, finally, just how you integrate all these components into vehicles. You can never spend too much effort learning how to do proper systems integration.

And then my last chart, taking a slightly broader view on the future and how this all fits together, we feel that, you know, what's already being done is great. Though it's benefitted Transpower and our customers, and our technology, you know, funding to develop vehicles and components, it's there, it should continue. Funding to build manufacturing facilities, it's there, it should continue, as well as the refueling

and recharging infrastructure.

And, incidentally, I'd like to mention that the electric propulsion can make -- is not only essential for fuel cell vehicles, but can also make natural gas vehicles run more efficiently. As battery technologies advance, I'm certain you're going to see a new generation of natural gas hybrids out there that can marry the benefits of natural gas and electric propulsion.

So, fueling and at least charging infrastructure are critically important.

But also, some of the things that don't really get talked about a lot, but I think are going to become more essential as we move forward, funding agencies tend to like developing the first of a kind of something because it's exciting and it can be demonstrated.

But there's a boring intermediate phase of development of any product that isn't as exciting, or glamorous, but where you have to put something that you've already developed on the road, and accumulate a million miles on it before you can really claim that it is ready for prime time and to sell in large numbers.

A lot of companies have gone out and made a big splash with a brand-new product, then when they deliver it to a user they find it really doesn't meet their

expectations.

That's almost always because those products were not fully vetted, they weren't put out, and monitored, and tested day in and day out in real-world service for a year or two.

When you go to a showroom and you see a General Motors, or a Ford, or a Toyota concept car it's usually three or four years away from being ready to be sold to the public, even though it's built, even though it works, because it hasn't gone through that long process of testing.

So, funding to help get companies from -- you know, bridge that gap from when the first vehicle's built and it's shown that it works, to where it really can be sold in quantities of a hundred or a thousand.

That unglamorous middle road is where funding is always needed and is hardest to come by for companies like us.

And then once those vehicles are developed and once they are commercial ready, even though they do have this potential to save, in our estimation, $50,000 a year for this big, heavy-duty vehicles that save huge amounts of fuel, there still will be a hurdle because the capital cost is going to be $150,000, $200,000 higher than a standard truck.

So, there will be some -- some mechanism will be needed to help truck -- you know, your average truck owner to buy that more expensive truck and then let that owner repay that, you know, loan or whatever it is over the course of four or five years as they accumulate these fuel savings.

So, one possible solution we'd like the Energy Commission and the funding agencies to consider is setting up something I call a battery bank, which is basically a revolving fund where a buyer of a vehicle like this can go and basically get money from the bank to cover that up-front cost of the battery pack, and then repay that cost out of their fuel savings while they operate the vehicle. And then that money goes back into the bank and may even make a profit. Could even charge interest and make a profit and the fund could even grow over time, and provide more and more funds to adopters of electric vehicles.

So, that's just one thought on how we can -- you know, looking forward a couple of years to some of the needs that are likely to emerge.

And then, finally, getting favorable rate structures from utilities for super off-peak charging, and maybe even installation of distributed energy systems, putting in solar systems or small wind systems

that can help users, along with energy storage, be their own utility, store up their own energy and use it to charge the vehicles.

It probably won't work for the average consumer, but for a large fleet operator that has several acres and giant buildings why not put solar cells on those buildings and have them be their own utility and their own fuel station at once, all in one.

And so that's kind of our vision of where we think transportation should be headed and how you can help, and I appreciate the time to share these thoughts with you.

COMMISSIONER PETERMAN: Mr. Simon, thank you. Can I ask you to stay and just take one more minute, and if you don't mind, share with the Advisory Committee members your story about how you came to the Commission in the first place to receive funding, because I think it touches upon the need a government funding can provide when the private market is not available.

MR. SIMON: Okay, thank you, I'll be happy to do that, Madam Commissioner.

When I wrote our proposal to the Energy Commission for our first grant, I had recently been laid off from a large company that had no interest in investing in these technologies.

I had actually proposed to my former employer, a very large couple that had billions of dollars, I proposed to them to spend $1 million to develop this electric truck, and they didn't see the value in it. They saw it as too long term of an investment, too risky.

I then went to a small company that I had a prior affiliation with, that also had at the time a fairly sizeable amount of money, but they also declined to invest in the electric truck idea.

So at that point, literally working out of my -- on my computer, out of my bedroom, I wrote a proposal to the Energy Commission. And the Energy Commission saw the value in it, and they didn't judge me for being a small company or being just an embryonic company and there are very few entities that will do that.

You know, there's a lot of talk about venture capital, how wonderful venture capitalists are and how they save the world, but for every proposal, a business plan that a venture capital firm funds, there's a thousand that aren't funded.

And so there's a huge need out there to fund great ideas that just don't have that pedigree, yet, that makes large companies or venture capitalists invest in them.

And the Energy Commission and the ARB, through the AB118 program, and programs like this really serve that need.

And as I think you're seeing from our company's success over the past year and a half, it can pay enormous dividends; just have exponential return on those investments if you're willing to take those risks.

And I think for the small amount of money, relatively small part of the State budget that goes into these programs, it's just a tremendous benefit economically and technologically.

COMMISSIONER PETERMAN: Thank you. I had the opportunity to meet some of my staff and I talked to the gentleman who does IT for him, and he was very excited, he'd graduated from college right before starting to work with Mike, and he kind of took a free internship and turned into a job. And it's not the type of job I normally think about this program supporting, someone who does IT, but small companies need folks to be able to do that as well.

Great to hear -- is Matt still here? Matt, and I would note South Coast was also a funder of Transpower and, again, those are great opportunities for us to work with local partners and we appreciate that partnership.

Matt, do you have a couple of words you'd like

to share with everyone?

MR. MIYASATO: Yeah, and I just wanted to put my -- so, first of all, thank you, Commissioner, for inviting the South Coast to briefly take a few words before the public comment is open.

I do have a couple of slides I wanted to show because it was touched on, former Commissioner Sharpless mentioned it, Bonnie mentioned it specifically, and then, of course, Peter talked about the vision document.

I wanted to highlight that. Well, and then also Jamie put the slide for heavy duty vehicles in his slide deck.

And what I had put in my two slides is briefly the light duty version of that.

But I wanted to stress, this is a joint exercise that the San Joaquin Valley AQMD, South Coast AQMD and the ARB did to show the challenge that we're facing if we're going to get to the 2050 goals for greenhouse gas emission reductions.

But we want to be on the glide path for criteria pollutant emission reductions as well to make sure that we capture all the benefit from these technologies.

And what that analysis showed, by looking at different scenarios and fleet penetration models, they said -- essentially showed that you could get to the

2050 emissions goals, you could see there, if you have a certain mix of different types of technologies.

But what they stressed, and in particular for this slide, in 2040 every vehicle sold, every light duty vehicle sold would have to be zero tailpipe emissions. So, this is reflecting what's on the road at the time.

But every vehicle sold would have to be, in 2040, zero tailpipe emissions.

Now, the sad fact of the matter is in the South Coast Basin we're going to need that 10 to 15 years earlier than the statewide fleet.

So, we feel a huge critical urgency to trying to get these vehicle technologies implemented as soon as possible, and we see AB118 as being one of the prime movers to help leverage the funding that we have at our district, at the regional level, to move those technologies forward.

So, in particular, if you look at the bad actors, as it were, the top source of the NOx pollution, you can see that heavy duty diesel trucks is the largest source of NOx emissions in our region.

But then you can see that it's off-road equipment, also, those are diesel engines.

And you can see passenger cars are actually up there above the inventory of where we need to be by

2023.

So, Commissioner, you asked where should the Energy Commission spend its funding in terms of getting emission reductions by the 2023 time frame.

COMMISSIONER PETERMAN: That's not exactly what I asked, but go ahead.

(Laughter)

MR. MIYASATO: Maybe that's how I interpreted it.

But I would suggest the largest bang for your buck are going to be in the heavy duty sector, but you also have to invest in light duty and medium duty because we're going to have to attack all of these sectors at the same time.

So, in terms of the AQMD comments, I want to make four brief comments. First of all, we agree with the San Joaquin Valley as you're really going to get the most bang for your buck if you're looking at medium and heavy duty.

But we want you to focus on the goods moving sector because that's where these vehicles are operating in environmental justice communities, disproportionately impacted communities, and the ports and those areas along those corridors are where they're most heavily impacted.

And so these heavy duty truck technologies that can be near zero or zero are really where we want to focus our efforts.

So, for example, we just applied for and won a Department of Energy grant for zero emission Class 8 trucks. These are technologies that we'd love to partner with the Energy Commission on.

But they're different flavors, as it were, so it's fuel cell battery, different types of battery architecture, but Class 8 container movement trucks.

There's also the implementation of wayside power, so this gets to the point that Joe was talking about, biodiesel for the long haul trucks, trucks that are going to go out of our basin in the San Joaquin Valley.

We think there's opportunities to look at different architectures that apply zero emission miles in specific areas, but also allows the flexibility to operate at a hybrid mode, and so you get a longer range.

And those types of flexibilities are offered by a catenary powered truck, for example, Volvo has a plug-in hybrid.

So, again, we're looking at zero emission miles where you need them and that would be in these disproportionately impacted communities.

The second comment is that we'd love to be working with the Energy Commission, as we have in the past, on the development of near zero emission technologies.

As you can see from this chart, we've got to attack near zero and it's got to be pretty darn close to zero, and we're suggesting about 90 percent reduction in these types of technologies can get us to where we need to be.

The third comment is please maintain your support for hydrogen infrastructure. The Energy Commission is the only government agency that is doing that at the state level.

And as Commissioner Peterman mentioned, is having the State put a firm flag in the ground saying we are supporting this because it's so important to the State, but also the country, is extremely important.

So, I think there's ways to monitor how your dollars are being spent on hydrogen infrastructure, but making sure that you maintain that support is critical.

Because as these slides are showing, we need these technologies if we're going to meet our goals.

And then, finally, we just again wanted to commend the Commission. This is a great idea to have all of the advisors come together, provide input on the

plan even before the public meetings are required.

And we would offer, as a local air district, our help, either it be through resources, technology resources, co-funding partners, which we are often doing on many different projects. Technical reviewers are even block grant recipients.

So, we just want to echo our support for the Commission and hope to be working very closely with you and your staff. Thank you.

COMMISSIONER PETERMAN: Thank you. And, again, thank you for hosting one of our workshops down at your facilities. And I think this discussion is so good, I'd like to take it on the road at some point. So, it would be nice to do one of these in Southern California, as well, and we can talk to you about that.

MR. MIYASATO: Yeah, we would love to have you down there.

COMMISSIONER PETERMAN: Okay, terrific.

We're going to open it up to Advisory Committee members for some questions about the medium and heavy duty demonstration category.

And before I do, I'll note that, obviously, we're running a little bit behind time which is why we scheduled this one to end at 3:00, so people were not here at 6:00 o'clock.

And I imagine we'll be able to move to the next section relatively quickly since it's more focused on deployment incentives.

But for the public who are on the line or in the room, I think we'll probably get to public comment around 3:30. But if you have a pressing need to make a public comment or you need to let early, please let us know.

So, we'll just take some brief questions, now. Eileen?

ADVISORY COMMITTEE MEMBER TUTT: Thank you, Commissioner. I want to echo what Dr. Miyasato said because I do thing that was my point earlier on, that investment in electrification in the non-road goods movement sector is really how we can benefit the environmental justice communities the most.

And I think it's just probably one of the most effective ways to get these alternative -- the benefits of these alternative fuels into those communities.

I also want to point out that there's a tie here with the low carbon fuel standard. The low carbon fuel standard is really a -- it's really an incentive program for low carbon fuels, and electricity happens to be one of those fuels.

Because every time an electron is sold the

utility gets the value of that credit and then the regulation requires them to give that dollar value back to the plug-in customer.

So, it is a direct incentive and it can be leveraged in this goods movement sector as well. So, I just want to make sure that this AB118 effort and, Dr. Miyasato, your effort, that you kind of stay tuned to the LCFS because it's another area where there could be significant financial benefits or incentives. It's an incentive program for all fuels that reduce carbon.

So, it's similar to this in that it's not -- it's fuel neutral, it's just if you're reducing carbon then you're generating credits.

COMMISSIONER PETERMAN: Thank you, Eileen.

Anyone else from the Advisory Committee at the table have a comment? Bonnie?

ADVISORY COMMITTEE MEMBER HOLMES-GEN: Yeah, I just have a comment. First of all, I think this discussion has been really helpful and, again, points to the critical value of this category to helping meet our State and regional air quality goals which is, of course, very critical to the Lung Association.

And the partnership between the Air Board, and the CEC and the Air Districts is really valuable. So, I'm really pleased to see the Air District speakers here

and hope that we can continue to have a strong collaboration and partnership with the Air Districts.

And just a quick point is that, you know, we do a lot of tracking of air quality trend data around the State and, of course, ozone and particle pollution are both still huge challenges.

But in the Valley, particularly, particle pollution has been a really stubborn and difficult challenge. And, in fact, we have some areas in the Valley where the particle pollution levels have been more of an increasing trend, which is very troubling.

So, that's another area where these investments and everything we can do to ratchet down on the particle pollution from medium and heavy duty is so really important to our public health goals in helping to reduce asthma attacks and other health outcomes.

COMMISSIONER PETERMAN: Thank you. And as you spoke -- and maybe this is where Tim is going to go, I don't know. But as you were speaking I was, you know, reflecting upon a speech I recently had to give about medium and heavy duty technology.

And in addition to the work we're doing on zero emission freight technology through the program, we do provide funding in the heavy/medium duty space for other alternative fuels as well.

And so I did want to acknowledge that and see if Jim McKinney wanted to comment at all on the fact that we're doing that. Because we focused really on these initiatives around zero emissions and freight goods movement, but we do do other goods movement work in the -- I believe natural gas, correct? Jim?

MR. MC KINNEY: Yeah. Although I'm sorry, Commissioner, I think I'm drawing a little blank here, can you --

COMMISSIONER PETERMAN: I may be wrong.

MR. MC KINNEY: -- talk it up a little bit more for me or --

COMMISSIONER PETERMAN: Well, no, we don't even have to pursue it. But I did want to acknowledge that we focused on goods movement, particularly around the 710 corridor because of 2023 goals -- not goals, requirements.

But I did want to acknowledge that in terms of this broader funding category medium/heavy duty demonstration, we have done demonstration projects for other fuels besides electricity, even though that has been the focus of today's panel.

MR. MC KINNEY: Okay, I'm with you now. Okay, sorry about that.

Yeah, as I had mentioned a little earlier in the

opening staff presentation, for the medium duty, heavy duty advanced technology demonstration category, in addition to the electric drive trucks, and thank you Mike Simon for your presentation there, but some really interesting demonstration projects.

So, Volvo -- no, Caterpillar is doing a large hybrid off-road excavator. So, we had some discussion about high-speed rail, so I think that's one of the early possible demonstrations of an advanced technology, off-road equipment that could be used in that space.

Volvo also has some good products going. And we're continuing to fund development of large scale, you know, CNG/LNG motors that can be used in the off-road sector, as well as in the Class 7/8 truck sector. So, I think those are some more examples of that.

COMMISSIONER PETERMAN: And I'll also note because I see we have representation in the audience, at our last Advisory Committee meeting we had a representative, the name of the company -- Oberon Fuels, that is focused on DME and I imagine they'll be making some comments during the public comment period. But that's another fuel that has come to the attention of the Advisory Committee with an interest in participating in more of the medium/heavy duty market.

Tim, did you want to make a comment?

ADVISORY COMMITTEE MEMBER CARMICHAEL: Yeah, just briefly. We actually think the vision document, and there have been several references to it and that's why I wanted to comment, briefly, on this, we actually think the vision document missed the mark.

Not in the 2050 goal, no debate about that, but in what's likely to happen in the next 10 or 20 years. It's the only report produced in this country, this year, that doesn't show growth in natural gas this decade, not even in biomethane.

And so we just think it's wrong on that piece. And, you know, again, not quibbling with the 2050, where we need to be, but how we get there, what's likely to happen this decade and next. And we're submitting comments on that.

I do want to note, though, there's a real tie in to today's discussion in that one of the things that ARB staff seem to be unaware of, and CEC staff maybe, also, is that natural gas engine technology is developing much more rapidly than the agencies realized.

And we expect in the next two or three years we will have a near zero natural gas heavy duty engine.

So, you know, ARB and others have mentioned this 2023 we need to be a near zero engine technology, which may well be very challenging for diesel. But what I'm

hearing from the technology folks in the natural gas industry is in the next two to four years you're going to see natural gas engines with conventional -- with fossil fuel natural gas meeting those targets.

And I think there's a real opportunity for this agency to support that as part of this program going forward.

We are, at Commissioner Peterman's suggestion and others, we are going to be doing technology briefings for ARB staff and CEC staff in early October, and getting to more of the details on this at that time.

COMMISSIONER PETERMAN: Very interesting development.

Ralph?

ADVISORY COMMITTEE MEMBER KNIGHT: I just want to take the opportunity to thank CEC and ARB, all the Air Districts that are involved, that have been involved in the yellow bus growth since 1997, when we put the first two electric buses on the road here in California.

My mechanics would have rather seen them as anchors out in the ocean somewhere, I think, as often as what they ran, but that was the start of it.

And I think today we're seeing a lot of good come out of it. You're going to be seeing an electric bus come out of our operation very shortly, with some

new technology.

There's a lot of new technology coming around. Battery technology has changed in leaps and bounds. You know, we're seeing more CNG across the country now, not just in California.

I think that we're seeing a lot of developments going on with all of the products in the yellow bus which, usually, we're the last one to see that kind of technology come around.

And I guess -- I had a fact sheet that I laid out today for everybody to kind of let you know where we're at. We're in kind of a battle land at this point in time right now.

The green technology, which I think today was spoken about as far as first responders is concerned, we've taken that as a wholehearted discussion because it has -- it has a place in the yellow bus. It's the safety of our kids that are on board that bus and the first responders to take care of it.

So, you know, in this package here you're going to find a letter from the commissioner denying my exemption for the painted rails on the bus out there. You're going to see some articles that came up in some of our fleet magazines and things like that.

Sierra Club is involved with a couple of

articles in here.

And the latest article that just came out hit the streets about 5:00 o'clock yesterday afternoon, from School Bus Fleet, as far as some of our hybrid buses that are parked because CHP isn't going to allow us to run them with the green rails.

We have taken the two special needs buses and covered them up with vinyl. They're coming in tomorrow to check the vinyl coverage. If there's any green showing anywhere on that bus, they're going to pull the buses out of service.

So, we have been over them with a fine-tune comb. Eyes, after eyes, after eyes looking for any speck of green because I mean any speck will pull it out of service.

And I guess, you know, like I said the battle lines are drawn and, you know, we're doing everything we can to support this because I think it's a safety issue is where we're really at. It's not that I like the green rails, or whatever the case may be, it's a safety issue for everybody involved with this bus.

And I think we're missing the point. We're making a political battle out of it and we're not thinking of the safety of our kids.

And so this kind of gives you a little bit of

facts of where we're at there. But I think the yellow bus industry is just very happy to be a part of this and is going to continue to go.

I understand that, you know, we're struggling with funding and things like that out there today, but I can tell you that there's other resources that we're still going to be involved with, that's still going to keep us in this technology.

I've got the only three hybrid engines and little buses that there are in the State of California right now, doing a fantastic job as far as wheelchair stuff is concerned.

So, the door is still open for us to continue and stay involved with alternative fuels, and I just want to say thank you for that.

COMMISSIONER PETERMAN: Well, thank you, Ralph. And I should note it is not this Commission that denied you anything, or this Commissioner.

ADVISORY COMMITTEE MEMBER KNIGHT: No, it's the wrong commissioner.

COMMISSIONER PETERMAN: But I would say you have been a tireless and passionate advocate for cleaner school buses and we all appreciate that.

Let's move on to the next category or the final set of presentations on vehicle deployment incentives,

and then after that we'll have probably a little bit more time for public comment, where Advisory Committee members can also feel free to comment.

Thank you, and we'll welcome Tim Carmichael back to the podium. And by, you know, hell or high water we're getting out of here at 4:00, so everyone be mindful of that.

ADVISORY COMMITTEE MEMBER CARMICHAEL: I'll be as brief as possible.

Just in case you forgot who our members were -- oh, it's Tim Carmichael with the Natural Gas Vehicle Coalition.

So, big picture thoughts again, because I think the Energy Commission asked some good questions but I want to set the context here from our perspective.

It is a really good idea for this agency and, frankly, all the agencies in the State government to regularly review these programs, the process, the form, and their effectiveness.

We appreciate that the questions that we got are questioning the incentive type and level. It's totally appropriate for this agency to be doing that on a regular basis with this program.

We're glad that you asked us, but you have other resources that you should also be tapping. At least at

one point, I don't know if you still have, but at one point you've had NREL, UC Davis, and TIAX in to contract. They're excellent resources, they know a lot.

And, you know, the travel in brackets is a serious point. At least earlier this year CEC staff wasn't able to travel without jumping through a whole bunch of hoops.

COMMISSIONER PETERMAN: That's still true.

ADVISORY COMMITTEE MEMBER CARMICHAEL: Still true.

These organizations are traveling all over the country, frankly all over the world, all of the time. They're touching information resources that my members aren't touching and they're another great resource as we look at are we targeting the right sectors, are incentive levels right.

And I just want to encourage continued use of them or maybe partial use of their abilities in this area.

And then a market assessment, we think this is an important piece. There should be a market assessment, not just looking at natural gas vehicles, but all the transportation technologies, where they're most likely to succeed based on what we know today. And we should be reviewing this annually.

So, are there better funding mechanisms? We actually think that this program is the best in the country right now. There are -- you know, it gets the money to the users or the purchasers relatively quickly and it's not a big hassle. There are hassles, it's not a big hassle like some of the rebate and, you know, tax deduction programs are.

So, all in all we think it's a good mechanism and we're open to ideas on how to improve it, but we think it's working pretty well.

How can we avoid increasing markups with these incentive funds? We actually don't think the manufacturers are trying to pad their prices because you guys are offering money, or this program's offering money to subsidize.

And it's my understanding that part of the CEC program is a requirement to show information to the end purchaser, you know, what grant was given or what incentive was given and, you know, how that money was used.

I actually thought it was actually to appear on the invoice. And if I'm wrong on that, it's something that I think you should consider doing as part of your process because, to me, it's good housekeeping and it keeps the sellers more honest, not that my members

aren't totally honest all the time.

Which types of entities, if any, need the funding most? This is one of those where I'm going to take the liberty to suggest maybe there's a better question, than this question, to get to the same big though.

And that is, you know, how can we have the greatest impact with the funding that you have on the NGV market?

It's important to remember that we're still talking about a very small fraction of vehicles. You know, the NGV numbers are 30,000 in this State, roughly, out of more than 25 million vehicles.

But this comment applies across the board for clean fuel vehicles, clean technology vehicles.

It's important to remember, we're still talking about a very small fraction. And because we are, you know, our lens is a bit different.

So, maximizing the CEC's impact on NGVs and this is, you know, to a couple of comments that were made earlier, maybe Jan's comment or question. We continue to believe that you're going to get the most bang for your buck if you target your money to some of the fleets that have the greatest potential to buy a whole bunch more vehicles than you're able to subsidize or

incentivize.

We will never get to the production numbers that provide economies of scale or a tipping point with the AB118 funds. If that's all we've got to work with, we're never going to get there. And everyone in the room, everyone in CEC should be clear on that, it's just not enough money. It's enough money to help but it's not enough money on its own.

And so that's why we think this approach of looking at who has the potential to buy a lot of vehicles and, if you will, somebody already used this term, but it's a great term for what we're trying to do here, we're trying to seed the market. Instead of trying to seed a field, we're trying to seed a fleet, if you will.

And if we can take some CEC funding or AB118 funding and get 5 or 25 vehicles into a fleet and help them overcome that initial inertia or doubt, prove it out for them in their operation and then they can go out and buy 100, or 200 or 500, that's a huge success story

And I want to note that I think the California Trucking Association could be a very interesting partner here in helping to identify those fleets.

I've had some very positive meetings with them over the course of the summer about their -- the

evolution of their membership and their membership's thinking around clean fuels.

Which entitles are least likely? I would submit to you that we can't afford to be thinking about it this way. We can't worry about the outliers because we could easily spend all of the money trying to get a few of the outliers into the fold, but that's not what we need right now.

We need to basically build the base. Go with the center, go where the sweet spot is and push that sweet spot and try and get it to a tipping point or to where the market really takes off.

So, we want people who have an inclination to or a real desire to go alternative fuels.

Do all types of vehicles need incentives? No, is the short answer.

And some of my members are going to gasp at me saying that, but that is the majority view. And let me explain a little bit.

Take refuse trucks for example, take transit buses for example, they're on the order of 80 percent to 90 percent of their purchases this year -- as an industry in California, 80 to 90 percent will be natural gas.

CEC AB118 money subsidizing those truck or bus

purchases is not going to have a significant impact.

And the next question is the fuel costs impact, you know, natural gas roughly $2 a gallon equivalent to anywhere from $1.90 to $2.50, let's say, compared to $4.00 diesel.

So, yes, the need is reduced, but it's not eliminated.

And an important point for this group to take in is you would think, with the price differential of half for the alternative fuel, that everybody would be lining up to buy these vehicles.

But the reality in the marketplace is you've still got some unknowns. You know, you've got a new technology, you've got resistance to change. And, you know, another reality check is fleet managers are not your typical early adopters, it's just not their nature.

I mean there are some sitting in the room, but Ralph will tell you he's an exception. And he's bringing others along but that's not -- you know, they're not normally out there saying, oh yeah, I want to be the first to try that technology. It's more rare than it is common.

Is it appropriate to reduce the incentive amounts? Maybe, and here it's important to look at specific scenarios, and I've only highlighted a couple.

But there are, as several people have talked about, these long haul trucks. There are long haul truck fleets that are running high mileage, lots of hours, and getting a low fuel price because of the volume of fuel they're buying.

They are going to be able to pencil out a return on their investment in two years or less. I'm not saying don't ever give one of those companies an incentive, but recognize how good the economics are for them already.

Here's an example where seeding a fleet that has 500 trucks, but hasn't yet taken the plunge to try an alternative fuel, you know, basically pushing them and saying, look, we're going to help you do your first couple dozen with the understanding that if it works, you're going to go big into this.

And so there's still opportunity there but there's much more need when you look at a medium -- you know, I think it was Jamie that showed a slide of, you know, the Class 3 to Class 6 truck, size truck, your local beverage distribution, your regional box truck delivering stuff within an air basin or metropolitan area.

They don't do as many miles, they don't have as good a fuel price, and there's probably greater impact

from a CEC incentive grant to get them to try an alternative fuel because their payback, on their own, is a much longer period of time, five, six years, maybe.

What's the right incentive level? It used to be the $64,000 question, now that just seems like not enough money.

But consider letting the marketplace decide. I mean my friends, who have been working with me a long time on this sort of stuff, would say how could Tim be saying let the market decide, because that line doesn't work in a lot of examples.

But in this case I think it does because how do we know at this table what the right incentive level is? How do even my members know, really, what the right incentive level is.

So, one way to tease this out, and I'm not suggesting that you shift your whole program to this, I'm suggesting you try -- you might try this as a way to tease this out.

Set an up-to incentive level for one class of vehicles or one segment of the vehicle pot and then solicit proposals and see who gives you the best proposal. And by best, there's multiple factors you have to consider, but one of the priorities should be who's going to put the most vehicles on the road?

And let's maximize, you know, let's leverage this to the maximum extent possible.

Here again, this is where market assessment could be really helpful in helping develop this.

That's it.

COMMISSIONER PETERMAN: Great Tim, thank you. Well, first of all, I didn't realize that staff gave you so many questions and thank you for being so diligent in responding. I mean these are the things that we'll sit around and talk about, and try and get some handle on, and really appreciate your attention to the specific requests.

I'm going to say let's turn to Lesley's presentation, now, and then we can have questions for both Tim and Lesley at the same time, just to make sure we get through all the presentations in a timely manner.

ADVISORY COMMITTEE MEMBER GARLAND: Following Tim Carmichael is like following Elvis.

(Laughter)

ADVISORY COMMITTEE MEMBER CARMICHAEL: I can't sing.

ADVISORY COMMITTEE MEMBER GARLAND: Yes, but you're a rock star, honey.

(Laughter)

ADVISORY COMMITTEE MEMBER GARLAND: All right,

I'm Lesley Garland, I'm with the Western Propane Gas Association. I'm actually representing two organizations today, the Western Propane Gas Association and the Western Propane Education and Research Council.

Both of them are operated out of our office but they're technically two separate organizations.

The Association represents about 125 propane companies that operate in California. Basically, these are the companies that you see their trucks every day on the road, selling gas for your barbecue, or your house, or for automobiles.

Our annual sales in California, about 576 million gallons statewide, we're number one in the nation in terms of how many gallons we're selling.

And then into what the -- American Petroleum Institute puts together statistics every year. The most recent statistic showed that 54 million gallons were going into what's considered internal combustion fuel, in their eyes.

But most of that is where we know is going into the forklift market, so probably 70 percent of that, quite frankly, is going into forklifts and the rest are going into the on-road vehicles.

The Western Propane Education and Research Council, this is a separate organization, not dues-

based, and basically we're able to fund propane safety and R&D activities. We get our funding from an organization back in Washington D.C. They give us about a half-million dollars a year to distribute to different programs and projects.

One of the things that I think you would be interested in, our industry has been incentivizing the purchase of propane vehicles since 2010. We've invested $295,000 into this so far, at $1,000 per vehicle.

It's a little bit different; it's not a straight rebate program. What you have to do is give us a little bit of information about the vehicle, again to try and center it around the R&D aspect. Since most of these vehicles are right off the assembly line, just certified by the ARB, what we're trying to do is get some feedback from people of what they like, what they don't like, how many gallons of gas it's using, what sort of maintenance issues that they're having, if any, hopefully none.

And then what we're able to do is give that back to the OEMs to give them a little bit of feedback straight from the horse's mouth and, hopefully, that helps them out when they're developing new vehicles.

I was also given a list of questions, much like Tim Carmichael. I sort of compressed some of these questions together so that it would be a little bit

easier and I sort of reworded. Sorry, Charles.

So, the first question was what's causing load demand for propane incentives?

I have a little bit of a problem. You guys gave me money and I can't figure out how to get it away from you.

(Laughter)

ADVISORY COMMITTEE MEMBER GARLAND: I can't tell you how grateful we are that you believed in us. You have -- for the past two years you've really stuck with us, you believed in us when nobody else did. And, frankly, you guys were the only people, the first people ever in the history of propane vehicles to give a program like this to our industry. And for that I am eternally grateful to the CEC staff for everything you've done.

But, unfortunately, it's been slow going and we've really -- I know between my headaches and your headaches it's been very frustrating. And so I'm here to sort of see what we can do to shake it loose.

So, what's causing the low demand? There's a couple of factors that we -- or four factors, five factors that I think is factoring in.

Number one are budgets. As Mr. Knight will tell you, with the school districts the first thing that's

easiest to cut is transportation funding and so this is sort of playing into how much we're able to deplete out of the program, especially for the school buses.

We also have hesitant fleet buyers due to the economy. I know I'm panicking every time I look at my bank account and I can only imagine what businesses are doing.

And so when they're making decisions about buying vehicles they're going to go for the cheapest and the easiest thing they possibly can, and alternative fuels is a little bit scary right now to some of them.

Vehicle availability is also a big issue. One of the big things that we were looking forward to when this incentive program first launched was a freightliner heavy-duty project.

This project is now almost two years late due to a number of factors. We're now -- they're now taking orders and they're going to be delivering in the second quarter of 2013.

I was hoping by now that we would have a couple of hundred of these on the road in California but, unfortunately, not.

Roush, the E and F Series availability, they've had some issues getting CARB certifications. This is a fairly consistent problem in the entire alternative fuel

universe is working through the Air Resources Board process.

And I think a few of you that are here, a few weeks ago were down in El Monte, where the Air Resources Board had a workshop to discuss some of these issues. And I think in 2013 they're going to also address it to sort of see what can be done to possibly streamline the process to make it a little bit easier, especially for some of the more niche certifications.

There's a difference between the propane buyer and the CNG/LNG buyer. From what I'm being told by some of the OEMs propane is more of a retail transaction while CNG/LNG is more project based.

The propane buyers seem to want a lot of the bells and whistles added into the vehicle. They want a lot more customization. But CNG/LNG, it's more standardized when they're making their purchases. And so that's also slowing us down.

The infrastructure for new fleets, this is what I like to call the chicken and the egg problem because we have the vehicles, and we have infrastructure, and now we're trying to figure out how to get them together and marry that. And I'll talk to you a little bit more about that in just a minute.

And again, the CEC reservation process; we've

now determined that there's a little bit of a hiccup in trying to get the reservation process for the incentives to sort of flow downhill. And I'll address this in just a few minutes, too.

Is the buy-down problem hindering vehicle cells? Oh, no, huh-uh, no, absolutely not. This program has incentivized some vehicle cells that ordinarily they would have stayed with gasoline and diesel because it's easy and it's cheap. And it's also spurred the cells of propane school buses again in areas where they desperately need any extra funding they possibly can for those school buses.

However, the buyers and the dealers have to be willing to work through the process. Like anything, you're going to have to put some elbow grease into this and there's a lot of people who just have thrown up their hands and said, oye, government, and then they walk away.

We also have determined, based on talking to some of the dealers that are working with us, reservations could be tied up with one dealer but another dealer has an opportunity to sell. But because of some of the limitations in the program, even though one dealer has an opportunity, if the other dealer has the reservations it's hard to get this transferred over

so that the other dealer can have the opportunity to make the sale right then and there.

So again, this is something I'll address in just a minute on some solutions, potentially.

Again, I was also given the question which entities are least likely to make the switch without the incentives?

Sorry Tim, I actually -- I picked a couple of winners and losers.

The three that we identified as being probably least likely without the incentives, the school districts again, shuttle services. We're definitely focused -- our vehicles, we don't have any real traditional consumer vehicles. Almost all of our attention is focused towards the fleet market.

And the airports are one of the biggest targets that we have, especially in the metropolitan areas where there's considerable air quality issues. These shuttle fleets, it's the Super Shuttle, it's the Hertz buses, it's anything that's taking you out to the off-site parking and things like that. Those are great especially for the F Series vans or E Series vans.

And the fleet operations, again the problem that we're seeing is that a lot of these fleets, in a difficult economy they're worried about moving to

something new just because of the financial risk. And so we've seen that, for instance, Direct TV is another big fleet that we're very excited that they're using the propane vans, now.

There's a lot of other fleets that are coming on and this money is one of the things that really is making it easy for them to make a decision, and do something right for the economy, especially in Southern California.

Why should it be considered in the future? Number one, eliminating the diesel school buses from the fleets. Mr. Knight was very eloquent in his description of why this matters.

The propane buses are the only alternative, alternative fuel in some of these bus types geared for the special needs students.

For those of you who know a little bit about the special needs, a lot of these kids have health issues. If you can get them as far away from diesel or as far away from, you know, anything fumes as possible, that's great.

And if you can put them in a propane bus, it's just one more way to keep them just a little bit healthier when you're taking them to and from school.

Again, improving the air quality at the

metropolitan airports and the fleets operating in the metropolitan areas.

I added in here Roush, who provides the Ford E and F series at this point, they're estimating that this incentive program in 2013 would help them deploy 500 vehicles, which would eliminate 3 million gallons of traditional petroleum.

Assuming, again that these vehicles have an estimated lifespan of seven years, that's 21 million gallons of traditional petroleum fuel that's eliminated.

This is again, as Tim said, we're -- it is a very small number but we're doing our part to try and help move the needle in the right direction.

And again, just to remind you, the propane reduces the carbon dioxide by 12 percent, the NOx by up to 20, carbon monoxide by up to 60 percent, and the greenhouse gases by up to 17 percent so, again, just trying to do our part to help out.

A very wise man once told me don't come to me with your whining and complaining, come to me with solutions. So, these last couple of slides we have a couple of ideas of how we might be able to do things a little bit better.

So, number one, allow the manufacturer of record for the fuel system to manage the reservation system,

instead of the OEM.

So, in one situation I could explain to you, Roush CleanTech actually builds the vehicles and sends them to Ford dealerships in California. And right now the Ford dealerships are the ones that make the reservations through the system, and not Roush.

Direct TV right now is delaying an order for 60 units because they can't find a Ford dealer that can actually sell them the vehicles all at once. They're having to try and figure out a way to do this piecemeal and it's just becoming almost impossible.

So, if this was actually shifted to Roush, instead of the Ford dealerships, Roush would be able to sort of fulfill this order all at once and direct it to the proper Ford dealership to be the delivery point.

I have -- during public comment a representative from Roush, by the name of Brad Beauchamp is here, and he would like to talk a little bit more about this, so I'll back off away from the subject and let Brad take this.

COMMISSIONER PETERMAN: And Lesley, in the interest of time, actually if you can just maybe focus on the bold and --

ADVISORY COMMITTEE MEMBER GARLAND: Yes.

COMMISSIONER PETERMAN: -- and then we'll make

sure, if you can make sure we have a copy of the presentation because all of this will be helpful for staff as they draft the next Investment Plan. Thank you.

ADVISORY COMMITTEE MEMBER GARLAND: Right. And the second suggestion is just to eliminate the GVWR thresholds. Again, trying to figure out the sweet spot of what's the right number and, basically, if maybe somewhere between the $6,000 and $10,000 and just have it one universal instead of breaking it up.

And what can we do? My job is to try and figure out solutions for the industry and make your lives easier, too.

So, one thing that we're trying to do between us and especially working with Roush right now, since they have a majority of the vehicles, we're trying to play matchmaker.

When someone is -- when a fleet is interested to make sure that they have the fuel provider there to give them the options of these are all the companies that are in your area that can provide the fuel. You know, and trying to get those companies to be more proactive and reach out to the fleets.

We're trying our own awareness propane for our propane providers to get down to the ground level, the

guys that are actually selling the gas, to make sure that they're -- when they're reaching out to potential fleets that people know that this money exists.

And also, our parent organization back in Washington D.C., they're continuing funding for the development of new vehicles. So, we're not stopping, more vehicles are coming down the pike and it's just a matter of time and getting the right certifications so that we can offer them.

This is me. I will just, again, thank you for your patience, thank you for everything that you've done to help us and beg you, please, don't give up on us. Let's see if there's some way that we can make this work in the future.

COMMISSIONER PETERMAN: Thank you, Lesley. Thank you for the presentation, it's good for all of us to get an update on what's been happening.

We have a fair bit of public comment so if anyone has an immediately quick question for Tim or Lesley on the incentives, from the Advisory Committee, let's ask that now. Otherwise, we're going to turn to public comment.

Ralph?

ADVISORY COMMITTEE MEMBER KNIGHT: Just one quick one. The threshold of that 14,000 pounds or under

that's a big one in the school bus industry because our older vans, the '87 and stuff that we still run today with special needs, our vehicles would fall into that category of not being heavy enough, so we have no way of getting rid of those with any initiatives.

COMMISSIONER PETERMAN: Thank you. Tim?

ADVISORY COMMITTEE MEMBER CARMICHAEL: Very briefly. Now that Bonnie's back in the room, I'll just speak to one other point I didn't make.

One of the challenges for the medium duty/light duty natural gas industry, the outfitters, has been the ARB certification OBD process.

And I just want to make the group aware that we're in active conversations. You know, Lesley alluded to this, but we're in active conversations with ARB staff about some near-term changes and some regulatory changes to that program that will address the timing issues that we've had with model years and being able to get CEC funding, and actually get vehicles sold, as well as the cost involved in getting a certification today.

And so I'm hopeful that a year from now we'll have a much more streamlined process there with ARB and you'll see a lot more of these vehicles coming.

COMMISSIONER PETERMAN: Thank you. I have a number of blue cards here for public comment, which

we'll move to, as well as, of course, if any of our Advisory Committee members have any comments.

I should say, though, I have a speaking engagement I'll need to leave for in a few minutes, on my other area topic, renewables, but the public comment should continue. And my advisor Leslie is here, and staff is here to hear everything, and they're really the ones who are going to be putting this together, so that's going to be important, and there will also be the transcript.

But let me just say now, if I'm not here when this finishes, thank you so much for your participation. I have found this very valuable. I hope you have as well.

If folks enjoyed having this meeting, please let us know and we'll try to do similar ones. But I think this gives us some insight before we go into the next investment planning process.

And also, I've appreciated over the day how much work the AB118 program actually does, how many successes it has had. And I just want to personally thank staff for all their efforts because they're in the process of managing all these contracts, working with stakeholders, and while developing the next plan.

And I think you can participate in some

processes of government that are not very transparent, where you get something and then that's it. And we've made a real effort here to have a public process to be responsive, so I ask that you acknowledge that and appreciate that.

And as our staff has always been available to answer questions, and they talk to many of you on a regular basis, but also be mindful of the amount of time that takes for them. Every time they answer a call, they're pulling themselves away from processing something else. But I know they find the interaction valuable.

And so appreciate the new leadership we have on board with the program and I look forward to seeing you all at our next meeting, and having more time to spend with you.

So, I'm going to turn the comment cards over to Pat to manage. But, first, we ask folks to keep their comments as short as possible, but within three minutes.

And our first comment will be from Colleen Quinn of Coulomb.

MR. PEREZ: Thank you, Commissioner. Let's begin with Colleen.

MS. QUINN: Hi, can you hear me, Jonah?

MR. PEREZ: Yes, we can.

MS. QUINN: Okay, thank you. Commissioner, thank you very much. I apologize I cannot be there in person but I wanted to say a few things because I wanted to update the Committee on, first of all, the investments you've already made.

Coulomb has been a partner with the Energy Commission in various AB118 funding opportunities, so I wanted to share with you and update on those investments, as well as briefly talk about the market, the PEV charging market as we see it, and a quick overview of some new initiatives we would suggest.

COMMISSIONER PETERMAN: Colleen, if you can do that in under three minutes God bless you, good luck.

MS. QUINN: I can do it, I can do it, trust me.

So, we're headquartered in California, we're a Silicon Valley company, I think that's important because my message today is to tell all of you that your investment in EV infrastructure has gotten the desired effects in the State.

With the $15 million that we received from the DOE, along with the $4 million in matching funding from the CEC, we've attracted over $70 million in private capital.

The investments have created hundreds of jobs and EV infrastructure going forward will continue to

stimulate local economies.

Charge point has grown over the life of the CEC grant a thousand percent. We've added facilities in California and increased our footprint three times.

We've completed the grant in 12 cities and in California we have deployed over 1,300 stations.

So, I wanted just to let you know that others have talked about their success, but I just wanted to put that on the record as well.

So, the California market, briefly, it remains the focal point for electric vehicles. Today Pike Research Report has come out and indicated that one in every four plug-in vehicles sold in the U.S. from 2012 to 2020 will be in California. This is great news.

The number one objective of AB118, as well as of I'm sure this Advisory Committee, is to support policies that will stimulate cars in the market.

So many have talked about AB118 and ongoing programs, I agree with Eileen's comments about workplace charging. We've had a great deal of experience in this and we think that's an area that still needs to have focus.

Another area is MDUs. We're working with the City of San Francisco on a program and I'll put more information specifically on that.

One thing I just want to talk about is a future area of focus. We see a big area of need to focus on is really the EV driver. Currently in California there is some confusion, many of them can't find a station when they want to. And then when they get there, they can't really use it. So, many of them have to have multiple charging service providers and carry lots of different credentials. They go to multiple sources to find stations.

And they don't have a pervasive way to determine if stations are in use prior to arriving. It's a little bit similar to the cell phone roaming across different networks.

So, I wanted to let you know that the EV industry is focusing on interoperability under the leadership of NEMA.

I've talked to Lesley, Richard Lowenthal, we've talked to her about some specific ideas that we have that the California Energy Commission can do to assist in the critical work and collaboration necessary to develop standards in between companies for communication interface to enable roaming, real-time mapping, and access for all drivers to stations.

Thank you, I'll stop there, I appreciate your time. And I will submit these, also, for the record.

COMMISSIONER PETERMAN: Thank you.

MR. PEREZ: Okay, thank you, Colleen.

The next speaker is Trina Martynowiez.

MS. MARTYNOWIEZ: Martynowiez.

MR. PEREZ: Okay, I'm sorry about the corruption of your last name.

MS. MARTYNOWIEZ: Hi, Trina Martynowiez with the U.S. Environmental Protection Agency, EPA Region 9.

Thank you for inviting us here today and we appreciate the opportunity to comment on this Investment Plan. I'll keep this brief.

We commend California for devoting attention to resources, to an admirable goal; transitioning to clean, secure and sustainable transportation and goods movement systems.

As the CEC considers how to allocate the program funding, we suggest that the Commissioner considers EPA's National Ambient Air Quality Standard attainment status of prospective projects, areas in its decision making process.

While California has made dramatic improvements to air quality over the past decade, still much more work is needed.

Most of the State's residents that live in ozone and particulate matter non-attainment areas are putting

them at risk of premature mortality, bronchitis, heart attacks, asthma, and lost work and school days.

While we estimate that the Clean Air Act requirement prevented over 160,000 deaths nationwide, just in 2010 alone, Californians still face severe health impacts from depredated air quality.

The California Air Resources Board estimates that 9,000 people die prematurely each year in the State as a result of this particulate pollution.

Thus, EPA and California share a very strong interest in reducing particulate matter emissions from the larger sources.

As you're all aware, transportation and goods movement activities are responsible for the majority of California's NOx emissions, a precursor to ozone formation, and they're also significant sources of particulate matter.

For California to come into compliance with existing air quality standards, as it was discussed today, it is very clear that emissions from on- and off-road vehicles must dramatically drop.

Many of the alternative fuel technologies that the Commission is considering and will continue to consider begin to reduce air emissions. However, many of the projects in past investment plans have simply

served as a bridge technology in the intermediate term, while vehicle emissions will eventually need to drop to near zero, or zero tailpipe emissions to protect the health of California residents.

This is particularly true in the South Coast and the San Joaquin Valley, also which we heard today, two of the most polluted air basins in the country.

With this in mind, EPA recommends that the Commission prioritize the program's resources for those technologies and fuels that will generate long-term improvements in air quality and employ them in the areas most impacted by poor air quality.

Technologies that yield zero and near zero tailpipe emissions provide significant greenhouse gas, criteria pollutant and toxic air contamination emission reductions, as well as the most impactful energy security benefits.

The South Coast and San Joaquin Valley Air Basins will not be able to meet their air quality standards unless these zero and near zero emission technologies are widely deployed.

Promoting the cleanest technologies in these regions is a focus of our Clean Air Technology Initiative, which is comprised of our two agencies, along with ARB, the South Coast and the San Joaquin

Valley Air Districts.

EPA appreciates the Commission's support in this Clean Air Technology Initiative and recommends that you consider deploying the cleanest technologies and fuels, primarily those that use little to no fossil fuel, in the poor air quality areas throughout the State.

As the Commission considers petroleum use in air quality impacts, you're also aware of other partners and funding sources with very common objectives. Such as EPA's other activities, Department of Energy and Transportation, the ARB, various California Air Districts, San Pedro Bay Ports, for example.

As the Commission is most interested in greenhouse gas and petroleum reductions, we encourage the Commission to support technologies that reduce not just greenhouse pollutants, but these criteria air toxic emissions.

In doing so, we'll strengthen opportunities to leverage funding from other government agencies and to better understand air quality benefits of the CEC-funded technologies on a statewide scale.

In addition to zero emission tailpipe technologies, EPA is very supportive of demonstrating and deploying low-emission biogas projects to produce transportation fuels, as well.

Waste-based biomethane feedstocks are some of the most lowest carbon intensive fuels, whether they're generated from a biogas facility at a waste water treatment plant, landfill, dairy or stand-alone digester.

Given the multiple environmental and economic co-benefits associated with reusing what would otherwise be a waste material, this is also a very worthy investment to transform into a transportation fuel.

Once again, EPA applauds the Commission's efforts and activities, and fully supports you as you're moving forward to a near zero and zero emission technology transfer in California. So, thank you.

COMMISSIONER PETERMAN: Thank you for being here.

MR. PEREZ: Okay, next speaker, Russell Teall.

MR. TEALL: Great, thank you. My name is Russ Teall; I'm the President of Biodico. We build on and operate renewable fuel and renewable energy facilities.

Our most recent project is at Naval Base Ventura County and we're supported by two CEC grants, one from the AB118 and one from the PIER program.

I think one of the conclusions in listening today is that the AB118 budget needs to be in the range of $500 to $600 million.

(Laughter)

MR. TEALL: It's like any business, you know, we have unlimited opportunities, but limited resources. And so there needs to be a very judicious balancing and weighing of a cost benefit analysis.

And I very much support Joe's approach to this. I think that a metric is a starting point for analysis, let's look at things objectively. Look at the different objectives of AB118 and see how each of the pathways serves to most cost effectively achieve those goals.

One of the advantages of attending the ethanol workshop at the beginning of August was understanding how a sister fuel to biodiesel is approaching this problem and I think their approach, basically of doing bolt-on technologies to existing infrastructure is a very cost-effective way of making the transition to a lower carbon intensity fuel.

And we've coined a term as part of the Low Carbon Fuel Standard Advisory Panel, of ultralow carbon intensity. There's no legislative or regulatory definition of it, but I was asked by the staff to prepare a spread sheet there, answering the question of how much fuel is it going to take under each of these pathways to meet the Low Carbon Fuel Standard requirements.

And we created a spread sheet, basically that looks at, from the IEPR projections, how much diesel is going to be consumed between now and 2020?

What are the ramping up requirements of the Low Carbon Fuel Standard from a quarter of a percent in the beginning to 20 percent at the end point?

How many carbon intensity points are we going to need for compliance by regulated parties and then look at each of the pathways?

All right, and some of the pathways for diesel fuel, for instance in California, from petroleum resources, have a carbon intensity of 94.

Soybean-based biodiesel is in the range of 64 to 70. Biodiesel made from used cooking oil is 11.76.

So, the volumes of fuel that are actually required are much less if we can achieve ultralow carbon intensity fuel, which we define as a carbon intensity of 20 or less, and that's what our industry is trying to accomplish.

The full compliance, under the Low Carbon Fuel Standard, for the diesel portion of it, if you just did it with biodiesel with ultralow carbon intensity, would require a 12 percent blend of biodiesel statewide.

So, you know, we're not even approaching the B20 standard. What we used in the white paper was B5

because that takes us through a 2016 compliance scenario for the Low Carbon Fuel Standard without having to address any sort of infrastructure compatibility, NOx issues, et cetera.

And that's accomplished through the three recommendations, which basically boil down to looking at low indirect land use change feedstocks, which is the single largest factor in the carbon intensity of biofuels.

Production technology, so that we're using energy efficiently and for renewable resources, and sales or distribution, which is looking at a distributed network of biodiesel facilities, so that the jobs created, the feedstocks, the production, and the distribution all occur within a very tight radius, so that we're minimizing transportation.

So, in conclusion, I would just like to say we very much support the Vice-Chairman of the California Biodiesel Alliance and there's a lot of work put into the survey that Joe references. And I urge you to very carefully consider any recommendations made here. Thank you.

MR. PEREZ: Thank you. The next speaker, Rebecca Boudreaux.

MS. BOUDREAUX: Good afternoon, I'm Rebecca

Boudreaux; I'm the President of Oberon Fuels.

And it's exciting today to hear the spectrum of fuels and the progress that's being made in different areas.

So, I just wanted to provide a brief update on an emerging fuel, dimethyl ether or DME, and the work that's being done there.

So, in its most fundamental format, DME is a small molecule, handles a lot like propane, and it's a carbon, oxygen and carbon.

And because there's no carbon-carbon bond when it combusts in an engine it produces no soot, so there's no black smoke coming out of a truck.

And so this, also, because there's no particulate matter it's easier to control the NOx.

And so it can be made from a variety of feedstocks, you need methane and carbon dioxide. So, it can be made from inexpensive natural gas from the pipeline, it can be made from biogas from animal waste, municipal waste, as well as for wastewater treatment plants.

And so what progress has been made? I spoke in previous meetings about what's going on with DME, but we are working at Oberon Fuels, we're a San Diego-based company, and launching DME as a transportation fuel

first here, in North America and, specifically, in California.

So, we are building a production unit right now in Imperial Valley. We'll be producing fuel in April of 2013. And by 2014, in the first quarter, we'll be producing that fuel from cow manure, so using biogas from cow manure to produce the fuel.

This fuel will be used in demonstrations in engines, so engine manufacturers have been working in this space for about 15 to 20 years, now. Volvo is the leader in this, far and away, and have a project in Europe right now where they're using bioDME to run ten commercial heavy duty trucks, and DHL's pulling several trucks, as well as the Swedish Postal Service and a lumber company.

And so, also beyond the work that we're doing on the fuel side, as well as other engine manufacturers, as well as Isuzu Hino, or some of the others.

The international organization, ASTM, has recognized that this is an emerging fuel and has initiated this summer a task force to write a specification for DME as a fuel.

And so we are working closely, it's actually under Subcommittee HNASTM, under the Propane Subcommittee because its safety profile is very similar

to that.

And so I just wanted to give you a brief update and thank the Commission for their continuing support in looking at all emerging fuels, and we look forward to competing in upcoming solicitations. Thank you.

MR. PEREZ: Thank you very much, Rebecca.

Matt Miyasato, are you still here or did you -- he's in the hall. Did he -- okay, we'll hold off on him.

We have Mr. Bennett -- Michael Bennett, excuse me, on WebEx. Michael, are you --

MR. BENNETT: Hello.

MR. PEREZ: Hello.

MR. BENNETT: Yes, can you hear me?

MR. PEREZ: Yes, we can. Please proceed.

MR. BENNETT: Okay, great, just want to make sure the communication is okay.

Okay, my name's Michael Bennett and I represent an aviation community composed of AOPA, Aircraft Owners and Pilots Association, the EAA, Experimental Aviation Association, and various other aviation groups.

I'm just going to summarize quickly my points, and I'll put them in an actual written comment so that everybody can see it.

But the main -- and thanks, Rebecca, for

mentioning ASTM, I'm a member of that on the DO2 Committee.

But what I wanted to say for public comment is that we're undergoing a major problem out in the aviation and boating community in that ethanol, you know, as it's being produced as a direct fuel additive is not the best that we can do, and the reasons are many for that.

Ethanol is just, to me, not the best fuel. It can be used to make better fuel, cleaner burning fuel, for example bioETBE. You can make bioacculate which is a good clean burning and is at a premium at this point.

But how it impacts aviation is the following; when you go to fill up an airplane at an airport that is a piston-powered airplane, you're faced with only one fuel. You can only buy one fuel and that fuel is a leaded fuel.

And in our attempts to get a cleaner burning fuel without the lead, and lead has a whole bunch of issues associated with it, that when we tried to get an unleaded fuel on airports we meet a lot of resistance, not only from the CARB people, not so much CEC, but others in the oil industry in trying to get a cleaner burning fuel on the airport.

We know it's available, it's been available in

Sweden for 20 plus years. So, we fail to understand how industry can help our group.

Now, the reason aviation, I think, is probably important, let's go to the slide and I've been, you know, looking at this all day. There's a slide that I forget who presented it, but the top sources of NOx show aircraft listed just below the locomotives and just above the passenger cars.

Now, I'm not sure of the accuracy of that data that surrounds that slide but if, in fact, aircraft emissions cause a lot of NOx problems, then I would think that aviation ought to have a role at this table. And I don't see any of the Advisory Board members who are qualified in the aviation sector to speak on aviation fuels, be it turbine fuels or be it piston-powered fuels.

Now, I realize that the aviation fuel sector is part of FAA and now EPA, because of the finding of risk, but now we have elements of the Proposition 65 lawsuits against lead, et cetera.

What the pilot community is saying is that we would love to have that fuel on the airport to reduce emissions of lead, but yet we can't get cooperation from either agencies to allow us to affect that to happen.

So, I would recommend, highly, that someone be

represented on this Committee because if, in fact, NOx is contributed by the aviation community, airplanes you call it, or aircraft, more than automobiles, then you would think you'd want to have representation from that group.

Thanks very much.

MR. PEREZ: Thank you.

Okay, next speaker, Sashu Constantine.

MR. CONSTANTINE: Thank you. Thank you for this opportunity. I'm Sashu Constantine, Director of Policy for California Center for Sustainable Energy, newly minted in that roll.

I will try to keep this under a minute given the time pressure, but I am very encouraged by all the presentations I heard today.

We are actually working on the ground in almost all of these areas. We worked with the San Diego Airport, for example, to implement some of their clean vehicle retrofits and upgrades, that was very successful.

And working across the spectrum here of technologies to improve our transportation fleet.

But I want to focus just quickly, in the last 30 seconds that I have, on the information, the data that we're getting from the Clean Vehicle Rebate Project,

which we're the statewide administrator for, to which we owe thanks to the CEC and ARB for funding through these funds.

We are getting up to 800 rebate applications processed a week. We are about to hit the 10,000 rebate that we processed through that program. This is a success story that's in under two years, again a result of this funding, the result of forward-thinking planning.

We think there are many avenues that are being indicated by the data coming out of this survey and we've had the chance to talk with staff about that. A lot of it was touched on earlier by different presentations about education, about access to rates and understanding rates, about access to charging infrastructure and what that means for vehicle deployment.

So, I encourage you to take a look at that and we will try to enter that into the record, although we've already introduced it to staff, so I feel confident that you'll hear more about it, as well as at the Governor's EEV conference you're going to hear about that.

By the way, Mr. Carmichael's presentation mentioned NREL and UC Davis. There's another partner

that was left off of that list, it's CCSE. We work with them and this survey data is available to them, as well.

So, thank you all.

MR. PEREZ: Thank you.

The next speaker is Brad Beauchamp.

MR. BEAUCHAMP: I'm Brad Beauchamp. I'm the Fleet Account Manager here in the west for Roush CleanTech. We do the propane vehicles.

And as Lesley and Tim had pointed out, we get the AB118 funding in the deployment stage. And a lot of you have had interaction with us, here in this room, in California. I CARB with many states, but I've spent a lot of time here.

And we thank the ARB and the CEC for the funding mechanism to be able to get these vehicles on the road.

We're right now at the second year of a five-year deployment strategy. We're starting to make inroads, but we really need that seed funding to continue on for propane vehicles. We do dedicated propane. We like all technologies, Roush has been involved in every single one of these fuels and technologies, we support them all in some way, shape or form, or half supported them all in some way, shape or form.

But for Class 2 to Class 6 vehicles this is the

easiest, least expensive way to reduce petroleum consumption and improve air quality. This is the cheap date. This is one where when you fund it and you get the vehicles out on the road, the actual end-users over time can actually save money and eventually will win off deployment money. But we do need it through this five-year deployment strategy.

We're launching the heavier side vehicles, the over 14,000 GVW vehicles coming up here in 2013. It's critical to have propane providers.

And also, small business, as well as medium and large business be able to take advantage of this.

We often, in our deployments of propane, also cohabitate with other electric technologies, as well as natural gas technologies, municipal school district arenas, and we need that to continue on, as well.

So, we've got a lot of really good things coming here in California. The difficulty is, as everybody knows in this room, balancing CARB, the funding mechanism and how it's put together.

And myself, even though I'm actually a fleet account manager, I spend more time dealing with the administrative side of putting these deals together. We like to put these vehicles on the road.

I'm actually, also looking at someone here, and

for those of you on the phone you can't see me, you're on the webinar, that's been in the deployment row, and all the technologies, and have been in the R&D row in all the technologies, and have also been in your shoes, similar to the CEC funding these opportunities.

So, I know all sides of it and we need this funding, critically, to continue for the next two to five years as we deploy in the marketplace and get stronger.

And as you can see, we're doing hundreds of vehicles and they're to all kinds of users, from retail buyers all the way out to large fleets, large Fortune 500s.

So, with that, our propane providers are also very supportive, there's hundreds of them here in California. Everything we do in California, here, generates additional revenue to other parts of the State and we'd love to continue having that progress.

So, thank you for your support and I kept mine brief.

MR. PEREZ: Thank you very much.

And once more, Matt Miyasato, did you want to add any additional comments? I don't -- he left, okay.

And let me ask one more time, I've run out of blue cards here, anybody else in the audience that has

not spoken today, that would like to comment and provide any input.

Okay, Charles, let me check with you online, anybody else that has not spoken?

Okay, with that I'd like to do a little quick wrap-up, remind everybody that we are still entertaining comments and would welcome your input by no later than September 28th. So, please provide any additional comments you have in writing to the docket, for the benefit of all parties to review and see.

And just to remind you, the instructions for providing that input are contained in the workshop notice for this forum.

Let me ask if the Advisory Committee members have any last-minute comments or reaction before we adjourn?

ADVISORY COMMITTEE MEMBER TUTT: I just want to thank you, Pat, for all of your hard work and commitment. We're going to miss you a whole lot and I hope you stay in this space in some way, shape or form.

MR. PEREZ: Thank you very much.

ADVISORY COMMITTEE MEMBER CARMICHAEL: The same over here, Pat, nice job.

MR. PEREZ: Okay. Well, let me just end by saying it has been a real pleasure working with this

Advisory Committee over the past three years and, certainly, my staff and the many stakeholders that are in the audience today I've learned a lot. It's been a wonderful journey.

I look forward to eventually returning to the energy field, hopefully in a year or two, and you'll see me somewhere else. In the last 32 years, I can't get energy out of my blood. So, I hope when things calm down I'll have an opportunity to interact with all of you once again. And keep up the fabulous work and continue delivering the public benefits that we're all after.

So, thanks again and with that we'll go ahead and adjourn.

(Thereupon, the Workshop was adjourned at 4:15 p.m.)

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