MEETING

STATE OF CALIFORNIA

ENERGY COMMISSION

In the Matter of:)
)
Advisory Committee Meeting)
and Public Workshop)

UNIVERSITY OF CALIFORNIA, IRVINE

ADVANCED POWER AND ENERGY PROGRAM

ENGINEERING LABORATORY FACILITY

ROOM 131

IRVINE, CALIFORNIA

MONDAY, FEBRUARY 10, 2014

10:00 A.M.

Reported by:

Martha L. Nelson

APPEARANCES

COMMISSIONERS

Janea Scott, Commissioner

STAFF

Jim McKinney, Program Manager

Charles Smith, Project Manager

ADVISORY COMMITTEE MEMBERS

Will Coleman, Onramp Capital

Robert Bienenfeld, CAFCP/Honda

Tim Carmichael, California Natural Gas Vehicle Coalition

Alberto Ayala, California Air Resources Board

Joe Gershen, California Biodiesel Alliance

John Butler, Alternative & Renewable Fuel Vehicle Technology

Randy Rosser, Fuel and Transportation Division

Carter Brown, Boulder Electric Vehicle

Simon Mui, National Resources Defense Council

ALSO PRESENT

Abas Goodarzi, US Hybrid

Brian Bliss, Boulder Electric Vehicle

Lloyd Dixon, RAND Corporation

Russell Sydney, Sustainable Transport Club

John Clements

Alex Keros, General Motors

APPEARANCES (CONT.)

ALSO PRESENT (CONT.)

Alex Keros, General Motors

Matt Forrest, Mercedes-Benz

Matt Miyasato, SCAQMG

Bill Van Amburg, CALSTART

Peter Christensen, Air Resources Board

Marc Melajna, NREL

PRESENT ON WEBEX

Steve Kafka

Bonnie Holmes-Gen

Clark Williams

Frank Ziegler

Roger Hussen

Catherine Dunwoody

P R O C E E D I N G S

9:08 a.m.

PROCEEDINGS BEGIN AT 9:08 A.M.

(The meeting was called to order at 9:08 A.M.)

ARCADIA, CALIFORNIA, FRIDAY, FEBRUARY 21, 2014

MEETING BEGINS AT 9:08 A.M.

COMMISSIONER SCOTT: So we'll go ahead and get started. I just wanted to say welcome to everybody. Thank you so much for coming to Southern California if you weren't already here. Into the microphone? All right. I'll sit down. I have to hold it? Maybe we'll have to get instructions.

So I was just saying good morning and welcome to everyone. Thank you for coming to Southern California if you weren't already here. We look forward to doing this advisory board meeting. So what we need to do, I guess you have to hold the "Talk" when you speak on the microphone in front of you. We'll go around and we'll do some introductions. And then we'll let Jim McKinley kick us off.

So I am Commissioner Janea Scott at the California Energy Commission.

MR. MCKINNEY: So I'm Jim McKinney, Program Manager for the Alternative and Renewable Fuel Vehicle Technology Program.

MR. ROSSER: I'm Randy Rosser, Deputy Director of the Fuels and Transportation Division.

MR. BROWN: Carter Brown, CEO of Boulder Electric Vehicle. Can you hear me?

MR. MUI: Make sure the light is on.

MR. BROWN: Carter Brown, CEO of Boulder Electric Vehicle.

MR. MUI: Good morning. Simon Mui, Natural Resource Defense Council.

MR. COLEMAN: Will Coleman from Onramp Capital.

MR. BIENENFELD: Good morning. Robert Bienenfeld with Honda, representing California Fuel Cell Partnerships.

MR. CARMICHAEL: Good morning. Tim Carmichael with the California Natural Gas Vehicle Coalition.

MR. BUTLER: John Butler, Manager of the Alternative and Renewable Fuel and Vehicle Technology Program.

DR. AYALA: Good morning. Alberto Ayala with the California Air Resources Board.

MR. SMITH: Charles Smith, California Energy Commissioner, Project Manager for the Investment Plan Update.

COMMISSIONER SCOTT: Okay. I'm trying to think about how to introduce the folks in the audience with -- can we -- do you mind coming up to the corner and speaking into the mike just so folks can know who’s around in the audience, as well? So let’s -- we can start --

MR. BROWN: Let me get out of the way here.

MR. GOODARZI: I’m Abas Goodarzi, President and CEO of US Hybrid.

MS. DEMESA: Rennie DeMesa (phonetic). I’m with Commissioner Scott’s office at the Energy Commission.

MR. BLISS: Bryan Bliss With Boulder Electric Vehicles.

MR. DIXON: Lloyd Dixon with RAND Corporation

MR. SYDNEY: Russell Sydney with the Sustainable Transport Club.

MR. CLEMENTS: John Clements, retired Director of Transportation from San Joaquin Valley and an electric school bus advocate.

MR. KEROS: Alex Keros with General Motors.

MR. FORREST: Matt Forrest, Mercedes-Benz.

DR. MIYASATO: Matt Miyasato, South Coast Air Quality Management District.

MR. VAN AMBURG: Bill Van Amburg from CALSTART.

COMMISSIONER SCOTT: Good morning, everyone. Thank you again for joining us. And I’m going to turn it over to Jim McKinney.

MR. MCKINNEY: Is this remote mike working? Can you hear me? All right. I finally made it to the big leagues. All right. Again, welcome, everybody. So I will, I guess, walk you through the first part of the program this morning.

So first I want to say thank you very much to the representatives of University of California, Irvine, so Dr. Samuelson, and then Will -- Will Decker who is manager of the program development here for planning us in this facility and helping us host our first meeting of the Advisory Committee down here in Southern California. I just want to tip my hat to Commissioner Scott for encouraging us to remember that the state is bigger than the Sacramento area. So it’s -- it’s really good to get out here and meet the Southern California stakeholders on their turf.

Slide please. Let’s see, do we have an agenda slide? There we go. Thank you. Okay.

So briefly, for the agenda today, so I will do -- kind of the first part will be called program overview. Charles Smith will then walk us through the funding categories for this year’s draft investment plan. Thank you. That’s good. Okay. We’ll go through that. Then at about 11 o’clock we hope to get to the public discussion and Advisory Committee discussion of the Investment Plan itself. Before that we’ll go through it category by category, and we will have both -- we’ll start it out with Committee discussion, WebEx-Committee discussion, and then public member discussion here. And I think we'll have some -- some input on some of these parts from different parts of our Advisory Committee and the Air Resources Board. So we'll continue that up to the lunch break at 12:30.

Just before 12:30 we've got Carter Brown and his team from Boulder Electric. We have an electric truck out in the parking lot. So there will be kind of a walk-around with that. And maybe the commissioner will get to drive it. She's -- she loves hot-footing it on these electric trucks. So --

COMMISSIONER SCOTT: I do, actually.

MR. MCKINNEY: -- we'll see how -- how Carter feels about that. But we want to get a photo opp on that. And then lunch. And I've got a list of lunch spots around here. We'll reconvene about 1:30, and then continue the discussion.

Yes, sir?

MR. SMITH: They're saying that you're not coming through on the WebEx. So you're probably going to have to pull this --

MR. MCKINNEY: I have to go back to that one too? Okay.

MR. SMITH: I'm afraid. I guess.

MR. MCKINNEY: Well, I've got three microphones here. You know, I used to be in a band and we had three mikes, but then I knew what they were all doing. Okay.

MR. SMITH: So let's turn this off.

MR. MCKINNEY: Do I still need this one? Okay. All right. Okay. Is that good volume?

COMMISSIONER SCOTT: Uh-huh.

MR. MCKINNEY: Can you hear me? Okay.

Slide please. So the first part of this, I think those of you who are veterans of our -- our advisory committee meetings, we'll kind of walk you through the highlights from what we've done since our last meeting in November.

Slide please. I think most of you know, the Alternative and Renewable Fuel and Vehicle Technology Program was just reauthorized this past year. So we are very thankful to the legislature for the trust that they have put in our agency, in the Resources Board. As you know, it's -- it's a shared program between our two agencies. So our part of the program, we cycle about $100 million a year, projecting that out until the end of 2023 when AB 8 will sunset. That will be if we get sufficient revenue streams. That will total about 1.5 billion for ARFVTP as run by the Energy Commission. Via Resources Board, I think it will total about half a billion, and that's not including the cap and trade funding and other funding sources that may -- may work its way into their programs.

So again, we're always very pleased to acknowledge Dr. Ayala and his team with the Air Quality Improvement Program. And then CVRP for the Light Duty Vehicle Vouchers, and HVIP for the ZEV trucks and buses.

Slide please. Again, kind of a familiar slide for -- for most of you. These are the policy drivers for our program. So carbon reduction is really a primary one, so about 30 percent reduction by 2020, 80 percent reduction by 2050, Petroleum reduction, in-state biofuels production. The Local Carbon Fuel Standard, so ten percent reduction by 2020. RFS2, I think that number is still good, 36 billion gallons by 2022.

If you want to note that the Energy Commission and the Air Resources Board executive directors signed a joint letter recently to USEPA expressing concern with the proposed lower volumetric requirements for biodiesel and advanced biofuels. So we were pleased to get the State of California on the record encouraging the state, of course. We've got some great companies in California putting out good product, and the federal revenue stream is critical.

Air quality, this is a big one for -- especially down here in Southern California. To me this -- this pending 80 percent reduction in NOx emissions from the transportation sector is going to kind of continue driving these conversions between low-carbon, zero-carbon, and then zero-emission vehicles as we move ahead.

And then Governor Brown’s mandate, so 1 million vehicles by 2020, 1.5 million by 2025. Those of you who have worked with the governor’s staff on this knows that they are all in -- on this part of the program, so the ZEV mandate, and we’re very pleased to have their -- their support.

Next slide please. So here’s the current summary of our slide. So we are now at $413 million locked into contract, so we’ve got 264 grant agreements. You can see we had, sadly, we had some withdrawals in the biofuel sector. So we were forced to cancel our single -- one of our single bigger grants ever with $11 million for the High Mountain Fuels project. That would have been a 3.6 million DGE landfill biogas project. So we were -- we were sad to lose that financing. It just did not come together. In my view there’s still a very strong need for biogas here in the state, both to blend with natural gas trucks, and for renewable hydrogen.

So the numbers are a little bit lower now in biofuels. So it used to be about a third. Now it’s about 28 percent of the program funding. Electric Drive is increasing a little bit to 35 percent. Natural Gas is about where it’s been, but I’ll talk more about that. Those numbers are going to go up very quickly over the next few years. Workforce development, we're now at 39. Awards, $25 million, and this is just a critical part of our program, although it doesn't always get the same visibility as the technical projects. Market and program development, we actually have two representatives here, though our guest from NREL hasn't arrived yet. His flight was delayed. But I'll introduce Dr. Lloyd Dixon a little bit later from the RAND Corporation.

Slide please. So I won't go through this -- this slide in a lot of detail because you're all good with numbers and can read this. But this gives you more information on how the program funding is allocated. So you can see, for fuels production about half of that goes to biomethane. Biodiesel, I think, is about a third. And the ethanol projects are similar or less. Fueling infrastructure, that's hydrogen and EVSE are the major components of that, although natural gases continue to increase.

The manufacturing label is a bit of a misnomer. That's really all -- a lot of our investments in electric drive components. So that can be batteries, controllers. It can be entire drive trains. It can also be entire assembly plants. So again, Carter Brown and his company, Boulder Electric, are very good examples of that.

We've got seats in the front of the bus there, Joe if you want to.

And then the others, so again, our workforce development and the technical support contracts.

Slide please. As I'm going through here, please feel free to ask any clarifying questions. But we want to hold discussion for that part of the program.

To give you more information on a couple of key subject areas for EVSE funding, this is Level 1, 2 and 3 chargers. We're coming up on $27 million in contract, about 7,800 charge points. So you can see the split there. Residential is about 3,800. Commercial, 3,000. Workplace, 743. The Fast Charger is about 77. The installation on these is very good, in contrast to some of the other parts of our program where people are still -- still working to get steel on the ground. But I think we've got better than a two-thirds installation rate on this. Fast Chargers are more complicated to site. The construction installation issues are a little more challenging, so we're just getting started on those. But we do have 77 of those funded. And then the Regional Readiness Planning Grants, which I think are really adding value at the local and regional level, to help coordinate how these should go in, what parts of a local environment are best suited for the different types of chargers' customers.

Slide please. Hydrogen Station Funding, so we have $27 million in awards, total awards thus far for 17 stations. With our recent $6.7 million grant to South Coast AQMD we think we'll get about five stations out of that. And I think we're going to be able to announce that NOFA pretty soon. We've got a lot of good proposals in on that one. And again, I think those of you tracking the hydrogen phase, another $30 million is out on the street now. That proposal deadline is Valentine's Day. Jean Verna (phonetic) said that would be cute to do it on Valentine's Day. So we're -- we're looking at 11 to 12 new stations for there. So that's really -- that's going to push us out, you know, towards $75 million for hydrogen funding, which is -- that's a lot of money. It's a really important investment by the state to help get this sector going.

And the other things there, so our co-funding of the bus station. The critical work by CDFA Division of Weights and Measures, I believe they either will file very shortly their regulatory package with OAL or they have already done say. But that one-year clock will start very soon. ARB staff are really working hard on that, as well. It's a really good piece of the program that's coming together very, very nicely. And then South Coast has a new Regional Readiness Plan just focused on hydrogen, as well.

Slide please. For the biofuels sector, just a little more information for you from those first couple of slides. Fuel production, about $93 million, 34 projects. You can see how that's delineated. And then for fueling infrastructure in this phase we've -- we've paused funding for both of those sectors. So biodiesel tank storage, and then 85 retail stations. So we'll have more -- more developments on that, I think over the next few months.

Slide please. So I put this slide together really to show people how important the truck sector is in California. So I think you guys all -- or everybody here knows the basic statistics. So, you know, 1 million trucks out of 27 million total vehicles. It's about, you know, 3-and-a-half percent of the vehicle population, about 16 percent of the fuel consumption, and then up to 25 percent of the emissions, just from the truck sector. So the air districts and the Air Resources Board, USEPA all have very important regulatory goals and requirements and initiatives in this sector. So we are putting our money to match that, as well.

So in summary, we've done about 2,000 natural gas or propane trucks. And I've got some good benefits information on that for you coming up here. Natural gas infrastructure, we're now up to 62 stations. And I don't know off the top of my head what the breakout is for biogas, I think it's six or seven.

John or Charles, if you guys could just waive your hands if you have more information as I go through here.

And then the commercial ZEV trucks, so that's the -- our co-funding of the EPI/UPS (phonetic) Electric Truck Demonstration, the 100-truck demonstration project that's getting very good reviews these days. And then we have some really nice representatives for people developing next-generation zero-emission vehicle trucks. So I'm really glad to see CALSTART, to see Boulder Electric, to see US Hybrids and others who I think are leading. It's really, really an important part of the puzzle here to advance this phase.

Slide please. I won't go through here line by line, but you all have this in your -- your handouts. So this is a detailed delineation, again, of the money by a major category and subcategory for our investments to date. So again, $413 million, 264 projects.

Slide please.

MR. BIENENFELD: Excuse me, Jim?

MR. MCKINNEY: Do you have any questions on this part of the presentation?

MR. BIENENFELD: Just a comment, if you could go back a slide. As you went through all of these it would be really helpful if you could also connect these activities to the goals. I think a simple slide that would show, for example, the goals as columns off the right, and which ones apply, and maybe, you know, their main focus, but ancillary benefits are here. But we have these goals, and then you jump right into the activities. And I think connecting the two would be helpful.

MR. MCKINNEY: That’s a nice idea. We’ll put that on our to-do list. Okay.

So these are kind of the next categories that I’ll cover here.

Slide please. So then first will be recent awards since the last advisory committee meeting. All Alternative Fuel Readiness Plans, so another six awards, and these have gone to the Redwood Coast Region, Monterey Bay, Santa Barbara, San Diego Association of Governments, Davis, my home town -- I didn’t have anything to do with that -- and the South Coast AQMD.

We also had two nice awards for Commercial Scale Biofuel Production totaling $99 million. Those awards to Crimson Biodiesel in Bakersfield -- and Joe Gershen is here today with them -- and that’s great. That’s an entirely waste-based biodiesel product. Extremely low carbon intensity value; I think it’s about 12 to 13 grams per megajuole. A very, very nice project. Community Fuels in Stockton, which is another one of our award to biodiesel industry producers. They’re going to mix waste-based feedstocks into that, and then they'll have a mix of 50 percent first-generation soy and the waste-based potion -- or quotient. So we're very happy to see them making the transition to waste-based feedstocks for that.

Slide please. So in terms of Active Solicitations, these are ones that are open right now. So you're free to try to talk to us, but we're going to put our hands over our ears and mouths and not be able to talk back to you on that. So I think as you all know, we have our blackout period of no- communication period for open -- open solicitations.

So EVSE, $6 million is -- is available. This one is closed. We got a lot of proposals in. And then John Butler and his team are managing the review and scoring of those proposals.

Federal Cost Share for Emerging Technologies, this is the first time that we've done this category with a solicitation. I think we got six to eight proposals that came in, about $2.2 million. So that is also in the -- in the scoring process.

Slide please. Solicitations that are open, so the Alternative Fuel Readiness Plans, another batch. That's the one that I read from previously, but there's still money remaining in that.

Hydrogen Fueling Infrastructure, so nearly $30 million. And a really important, I think, addition to our solicitation is the O and M funding. So that will be for -- it will be open to companies with operational stations. And that will help cover kind of the revenue shortfall until the vehicle traffic picks up and the sales of the fuel picks up, as well. So again, those are due this Friday.

Slide please. Another biofuel solicitation, $24 million. We just had the -- what we call the Bidders Workshop on that last week. A lot of good input from stakeholders, very good turnout. So we're looking forward to another good batch of projects for that solicitation. As you can see, $9 million for biodiesel or diesel substitutes, $9 million for ethanols or gasoline substitutes, $6 million for biogas production. So it will be a $5 million cap for commercial plans, $3 million cap for -- for demos. And we'll have a future solicitation for the feasibility study scale projects.

Slide please. Natural Gas Vehicle Incentives. Andre Freeman is our project manager for this. So we have $10.8 million out on the street right now. We've got reduced funding categories. Again, as this -- this sector matures -- and this is really, really one of the big success stories for alternative fuels and vehicles in California. So as that market picks up, as more fleets understand the fuel savings that are -- that are available to them, we thought it prudent to begin kind of ratcheting down the benefit levels of incentive levels on this.

Slide please.

COMMISSIONER SCOTT: So we have now put up on our web page the upcoming solicitations. This is something that I heard many of you mention at our last Advisory Board meeting or have flagged for me offline that it would be helpful to have this kind of thing. So this is right at the top of our -- our solicitations' page. So it used to just have the list of solicitations. Now we've included this chart at the top. And so whenever you go there and click you'll be able to see what's open right now, and also what's coming. And we're going out about a quarter, so we'll keep -- we'll continue to kind of update this so that folks have an opportunity to see what's coming and when.

So we just wanted to let you know that that's there. Thank you for that great feedback. We heard you and put that up on our web page for you.

And then if you'll go to the next slide please, this is our project map. We highlighted this at the last meeting, as well. But one of the things that we're working to do is -- is think about how can we communicate about the program better and in more compelling ways, because it's a terrific program. And so getting the word out there we think is really important.

This map, if you go to the Energy Commission web page, and then there's the tabs up at the top, and you click on Transportation, and then there's a Drive web page. And if you click on the Drive web page you'll be able to see this map. And we showed it to you with more -- it wasn't just a slide. We actually pulled it up last time. What it does is it's got all of the -- all of the projects that we've funded. It's got a little circle that tells you whether -- whether it's a biofuels, whether it's an electric vehicle, whether -- what type of project it is. And it gives you just a little bit of data about it. You can click on it and then go to a more detailed description.

We are working to add functionality to this map, which you will see coming soon. And so this right now has -- you can kind of see the cities. But what we'd like to do is overlay old legislative districts, new legislative districts, the Air Quality Management Districts, and a few other layers so that you'll be able to kind of see where the projects fall and different -- throughout different filters in the state. So we're working on that. I just wanted to make sure that you all knew that it was up there. The one thing it doesn't have is every single one of the 7,000 charging stations. This is not meant to be a charging station map, but just to give folks a sense -- also, it would kind of drown out the map. But other than that it's pretty much got every project that we have up there.

So if you have ideas about waste that we can continue to communicate about the program better, please let us know. That's something that we're looking at very seriously.

The other thing that I have, my executive fellow who is here is helping me put together stories about some of the projects. And so what we're really trying to do is make sure we've got a great photo, a great story, and we can put it up on the web page, too, in just a really visual way so that folks can kind of click through and see, actually see some of the neat projects that we're working on. And I'm sure every one of you around this table has a great project that you'd love to see us do. So please stay in contact with me and with Lauren Greenwood on that.

So that's that.

MR. MCKINNEY: Thank you, Commissioner.

Okay. Slide Please. Actually, before I speak to this, because I know Dr. Melajna, his flight was delayed out of -- out of Denver. So hopefully he'll be able to make it.

But I also -- we have three large technical support contracts, one with NREL, one with the RAND Corporation, one with UC Davis Institute for Transportation Studies. And I want to acknowledge Dr. Lloyd Dixon, if you'd stand and raise your hand, with the RAND Corporation.

And he’s doing -- his team is doing some really, really interesting program assessment work for us. And we’re just starting to get some initial deliverables on that. So we’ll -- we’ll share more of that information with you as we learn more. But he’s been tracking our Advisory Committee meetings more closely and has got some interesting insights that we’ll be able to share, hopefully over the next year.

So welcome, Lloyd.

Okay. Alberto?

DR. AYALA: I just wanted to add a comment to your slide number five, if I may. I think the timing is correct. Can you please go back to five?

I really appreciate -- this one -- I really appreciate you putting in context why we’re here today doing what -- what we’re doing. And thank you very much for the way you -- you frame our actions today.

I just wanted to add a point, because you mentioned that one of the key policy drivers is air quality. And you appropriately pointed out the need to reduce NOx in 2023 by 80 percent. At this point we know that if we consider the most recent Ambient Air Quality Standard for NOx, which is more stringent than the 2023 target, it basically means that this reduction is going to be a bit more stringent. We’re looking at about 90 percent reduction in NOx to be able to get to where we need to be in 2032. So

I think it’s important to recognize that everything that we’re doing today is very important, but things are going to be getting harder for us before they start to get easier. So I just wanted to add that point.

MR. MCKINNEY: Great. Thank you. That’s an important update to that -- that part of the policy drivers. Okay.

The next series of slides -- I’ve just got a couple of slides. So these are initial results from the NREL analysis of what we call benefits of the program. So these are projections out to the year 2025 for petroleum reduction, carbon emission reduction. And then we also have forthcoming data on criteria emissions and particulate emissions.

So this series of slides was published in the Integrated Energy Policy Report. This is the first time we’ve shared them with the committee, so I want to take a little time to walk you through it. But the commissioner has advised me to not get lost in the weeds, in the numbers. So I will try to keep it kind of more high level. It’s just -- it’s fascinating stuff. I mean, I hope you think it’s fascinating. I think it’s fascinating really to see how these investments play out, and are they ways we thought they would or did not think they would. So I’ll be able to share some of that with you today. And I’m sorry Dr.

Melajna isn't here yet.

So what you see here, there's two classes of benefits that are illustrated. The first is called Expected Benefits. So those are kind of direct calculations and projections of everything that we find, whether it's a CNG station, CVRP voucher, a natural gas truck an EV charger, kind of going down that list of items that we saw earlier in the slide deck. And these are a series of projections through 2025.

And again, there's two classes. The first is Expected Benefits. The second is called Market Transformation benefits. For expected benefits you can see on the left, again, the carbon reductions. So we're projecting 1.2 million metric tons reduction by 2025. And I think where it gets interesting is you look at the three bars there. So the green bar is vehicles. The middle blue bar is fueling infrastructure. And the lower one is fuel production. So again, this is for carbon. So vehicles are totaling about 30 percent of the total carbon reduction by 2025. And the big ones in there turned out to be natural gas trucks account for about 17 percent of that benefit.

And the one that's really intriguing to me, and I want to drill down on this more, is what we call manufacturing, over 80 percent of the vehicle benefit. So that's going to be, again, the new assembly plants that we're funding, again, like Boulder -- Boulder Electric, EVI, Motive Power up in the Bay Area, Right Speed (phonetic), and then Tesla with our award for the crossover vehicle. So -- and there's the battery investments, again, the drive trades. So I think this was really interesting.

And you can see that those -- those benefits are going to kick in later. It's going to take awhile to again build up the capacity and the sales of those vehicles. But I think it dovetails nicely with what Dr. Ayala just mentioned on the need for very low or zero-emission vehicles as we go through this decade.

Next category --

MR. COLEMAN: Jim, just one question.

MR. MCKINNEY: Oh, sorry.

MR. COLEMAN: Is this benefits from existing investments or is this the -- including the future?

MR. MCKINNEY: Thank you. Good. This is existing benefits. I'm sorry, I didn't go over that part. Yeah, these are investments through June 20th of 2013. That's the data set. We had to draw a line someplace. That's where we chose to draw it. And there's more information in the IPR. There's a table following this slide that kind of lays out the categories. And again, there will be -- talk a little bit more about -- about our process.

So the -- the current IPR has kind of the first cut in this analysis. And then Commissioner Scott will be leading the next IPR update and she will kind of do more public workshops and have more Staff reports available through that process. And she's still putting together the schedule with her team on what that will be. So that there will be a lot more information. It's all public information, obviously. But, yeah, we look forward to those discussions.

COMMISSIONER SCOTT: I would highlight, though, the importance of that point, Will, just because if you look at this kind of through the lends of AB 8, right, which just got passed and that we are going to be making through 2024, you would, of course, expect it to continue going up in 2025 and further. So it's an important point that it's projects from the beginning through June 30th of 2013.

MR. COLEMAN: And I assume there's a tone more detail in terms of each of these categories and where it all comes from; is that right?

MR. MCKINNEY: You bet. You bet.

Simon, do you have a question?

MR. MUI: Yeah, I was just going to ask a quick one. The fueling infrastructure, what kind of is captured in that fueling infrastructure investments in terms of GHG reductions?

MR. MCKINNEY: Yeah. Thanks for queuing that up.

That’s my next speaking point, though.

MR. MUI: Okay.

MR. MCKINNEY: So this accounts for about 38 percent of the carbon benefits. And again, the big -- the big piece of this, it turns out to be natural gas, so about two-thirds of the total benefit through infrastructure. So I think there was about 40, 45 CNG stations that we had contracted at that point and, again, 5 or 6 biogas stations. So that was one that surprised me. So clearly potentially high volume in there, as well. Electric chargers account for about 12 percent. I think hydrogen was one percent. And then the biodiesel infrastructure we have is about 16 percent. The biofuels category there, the red bar on the bottom, 50 -- that’s about 30 percent of the total reduction. Fifty percent of that is from the biodiesel class of projects. And then biogas and advanced ethanols are about 25 percent each. So again, good, good interesting stuff.

Alberto?

DR. AYALA: Actually, real quick, can you -- can you expand on why the trend line for infrastructure and production is flat versus the growth line in that you show for vehicles there?

MR. MCKINNEY: Yeah. Good -- good question. So the assumption here is that we will -- we will build these and they will hit kind of a peak capacity at some point. And for some of these that's earlier, so they kind of top out at around 2020, 2019. And then there's -- there's another set of kind of market growth that you'll see captured in what we call market transformation benefits. So the assumption here, say for a natural gas truck, that it actually peaks about 2015, 2016 for a new truck. As it goes through its drive life it becomes slightly less efficient and it kind of has more mileage. And so those benefits really do not expand much.

Charles, do you want to add to this?

CHAIR WINNER: Sure. So the other thing I would say is that the reason -- part of the reason that the infrastructure and production numbers level off and the vehicles continues to climb is that that's sort of the expectation of the manufacturing projects that we've funded, which represent a large share of those expected benefits. They -- they expect to ramp up over time, whereas the infrastructure that we funded reaches a throughput capacity.

MR. MCKINNEY: So turning to petroleum reduction, so 167 million gallons total projected by 2025. Vehicles account for 28 percent of that. Infrastructure goes up to 50 percent. And biofuels about 25 percent.

So one thing to note here is that in terms of petroleum reduction, again, natural gas, nearly 50 percent of this category benefit as a driver for that. So volumetrically we're displacing a lot of petroleum. But on a carbon basis, because it's a more modest, you know, 28, 30 percent reduction in carbon, less. And it's kind of the flip side for say biodiesel where we're kind of displacing less petroleum. But because of the very low carbon intensity for some of these new products we're getting a better carbon benefit. So I think that's also an important thing -- an important thing to keep in mind.

Also, on infrastructure, let's see, electric chargers were about nine percent. E85 is projected to be about 33 percent of that -- that blue part of the chart there. And that's assuming that all 200-plus stations are built out and fully used. Again, we had to go with the assumptions we had, the state of affairs in June. It's not clear that that market will evolve to reach that potential unless something new happens in terms of pricing or lower carbon fuels so it can pick up LCFS credits in there. Something needs to change in the E85 market in California to really -- to get the kind of volumes we need to see this potential.

Slide please. I'm not going to speak to this slide so much. I'll just let you use it as reference. But here's a little more detail. And again, go to our IPR, it's on our website, and you'll find these charts and many, many more.

Slide.

I just have two more here, Commissioner.

So this one -- this one introduces what we call the market transformation benefits. And what that means is that, you know, so we fund a class of projects. And you can see on the blue bar on the bottom, they're going to reach some capacity, whether it's mileage, throughput, fuel production at a bio refinery, that's going to cap at some point. And that will stay -- stay static through the life, the timeline of that project.

There's another effect called market transformation which is kind of the synergistic effect that I think we all think about in different ways, use different terms to define it. But really, as people learn about the benefits and say utility of these advanced technology vehicles, alternative fuels, and they begin to grow in the marketplace, this program and our sister program at the Air Board and other programs run by the air districts, they had this market driver, market expansion effect where it's going to go beyond just that initial investment.

Government can not buy it's way to, you know, 80 percent reduction in carbon. We just don't have enough money. The Air Board is already facing that challenge with the CVRP program. So these markets begin to kick in. And we can trace some of the benefit back to our initial investments, but we can't claim all of it. That's not analytically proper. So that's -- that's generally what that category means. And this is a carbon chart again, so carbon reduction. So you can see the market transformation benefits add quite a bit. So a range of, you know, about half a million metric tons to 2.2 million metric tons. And that pushes the total up to about 3.3, 3.4, kind of the total benefits, if you look at the high case, of 2030.

What that green bar is, it's called market growth. Another way to think about it is this is NREL's estimate of the trajectory for the 2050 vision for clean air. So you can see it's quite a steep curve. I was actually surprised to see that, you know, all things going well out through 2025, 2030, the high case here, these investments through 2013 could actually account for about a third of the carbon reductions needed to stay on that trajectory, which is a nice surprise, a nice surprise, and it's an important finding. Again, lots and lots of caveats. So again, I think that's good.

But if you go to the next slide it's -- you get sober real quick. So that is the trajectory out through 2050. Again, the green bar, those are the carbon reductions envisioned by statute. And then you can see for scale, you know, what we're talking about here with expected benefits and market transformation benefits. So, you know, every couple of years as we do this report those blue bars will stack up and that will get bigger and bigger.

But again, my takeaway personally for me here is that, again, you know, these government incentive programs, they're -- they're a spur, they're a trigger. We can not buy our way to a low carbon future. They really -- the markets have to kick in, the technologies kick in, consumer behavior changes; that's why we're all here to help make that future a reality.

So that concludes my part of the presentation. Maybe take a couple clarifying question on this. But again, the commissioner was concerned that we don't want to detract too much from the investment plan discussion. We'll have many workshops to talk about this. You can always call me. Charles and I are working on this. We'll be happy to walk you through some of the things you may have questions about. But maybe we'll take just one or two clarifying questions, if there are any. Okay.

Let's go to the next part of the program.

COMMISSIONER SCOTT: That's a great summary. And I just wanted to say, thank you to Jim and his team and to the NREL team for all of their really great work on this. It's a pretty complex analysis. It's got a lot of assumptions that underlie it. And so we will -- we will be doing as part of the IPR workshop on this where we can talk about a lot of it in great detail. So this is not your only opportunity to try to -- to try to digest all of this.

And Jim is right, the preliminary parts of it are in the IPR, as well, the 2013 IPR that just came out. So that’s a good place to -- to look and see, too. So I just wanted to make sure that folks understood we’re -- we’re kind of just getting going on these. And we will have, as part of the 2014 IPR, a workshop that’s focused on this. So it’s just the beginning of the conversation.

MR. MCKINNEY: So, Charles, you want to take the next?

MR. SMITH: Okay. Thank you, Jim. Thank you, Commissioner Scott. Good morning. My name is Charles Smith. I’m the project manager for the Investment Plan Update. I’ve had mike troubles earlier this morning. So please send a message to Andre Freeman on WebEx if you can’t hear me on this mike.

So I’m going to give you a little bit of review about the Investment Plan Update and its process. The Investment Plan Update serves as the basis for the upcoming fiscal year’s solicitations, agreements, and other funding opportunities. Right now we are anticipating a $100 million total funding allocation for a variety of fuels, technologies, and other program elements that support our goals. The Investment Plan Update includes allocations that are based on the individual identified needs and opportunities for different fuels, technologies, and vehicle types.

This is a summary of our schedule for the Investment Plan Update’s development. We released the initial Staff draft in late October, and held the first Advisory Committee meeting at our building in Sacramento in early November. The draft that we have before us today is the revised Staff draft which was released January 10th and is the subject of today’s Advisory Committee meeting. Based on feedback that we get from this meeting and other comments that we get through our docket, which I’ll describe a little bit later, we will release a Lead Commissioner Report in late March. And we anticipate approval of the business meeting at our -- in April. And it will become official once the state budget is enacted for the next fiscal year.

A little bit about this particular draft, we provided it to the legislature January 10th, as mentioned, as part of the governor’s proposed budget. This is something that’s required in our statutes, along with your requirement that we distribute the final adopted Investment Plan to the legislature in time for the governor’s May revise. Throughout the document we have updated our program information, most of which Jim covered in his previous slides, including information about recent solicitations and awards.

We’ve benefitted from previous stakeholder comments. So far we’ve had 20 items submitted to our docket. And I’ll give you instructions on how to submit your own comments at the end of my presentation. And we’ve also heard from 14 members of the public and 16 Advisory Committee members at our last Advisory Committee meeting, something that we certainly appreciate. Based on the original Staff draft, we don’t have any funding modifications proposed for this revised Staff draft version.

And my next set of slides will walk everyone through the individual funding allocations within this Investment Plan Update. Within the Biofuel Production and Supply category we’ve added a summary of our most recent awards. We revised one of the tables in this section to emphasis our oversubscription of not just all proposals that gets submitted for this funding category, but the qualifying proposals that get submitted.

A lot of people were wondering if, you know, the number of applications that we were receiving correlated with the quality of those applications. And what we found is that, yes, even if you focus strictly on the applications that received a passing score, we are still oversubscribed in this funding category. We’ve retained the $20 million allocation from the previous draft, but we've written in the discretion to set individual funding amounts for fuel types in our future solicitations.

Moving now to Electric Charging Infrastructure, we've added in the potential for funding for projects that emphasis medium- and heavy-duty vehicle charging, not just light-duty vehicle charging, which has been our primary focus so far, as well as projects that can support vehicle-to-grid demonstration. We've added references to the upcoming vehicle-to-grid -- vehicle-to-grid integration roadmap that the ISO is helping develop. That had reference to the statewide PEV infrastructure plan, which we expect to be public within the next few weeks or a month or so. And we've maintained the $15 million allocation in this category.

I'll briefly mention, also, the ZEV Readiness Implementation Workshop that we held on January 30th. You can find those materials available online. This is to help us craft a future solicitation for ZEV Readiness Implementation. Jim mentioned a lot of the regional planning grants that we've provided already. This would be to take the next step in those planning grants and convert those plans into implementation. And so we're trying to get feedback on what the best way is to do that, be it signage, education and outreach efforts, permit streamlining, etcetera. Again, the materials are still available online. I think we might still be taking comments on what we can better do to -- to help change those plans into actions.

In the Hydrogen Fueling Infrastructure category we've added discussion on the comparability of fuel-cell vehicles and plug-in vehicles as regard to GHG emissions. We've provided updated information about the current hydrogen solicitation that Jim mentioned. And we have -- are in ongoing discussions with stakeholders regarding the number of stations that are currently out there. It's -- it's sort of tough to pin down exactly what to consider a public station and what to consider an available station, and so forth. And we have a $20 million allocation for this category in -- in respects to the AB 8 requirement.

The Natural Gas Fueling Infrastructure, not too many changes here. We've added language regarding the value of station upgrades and expansions. We need to try to strike a balance between, you know, the very quick and easy value of station upgrades versus the opportunity to expand the natural gas fueling network. And this category still has a $1.5 million allocation to it.

Within the Natural Gas Vehicles section we provided updated information on in-house gas emission reductions from biomethane and NOx emission reductions from natural gas in general, and retained the $9 million funding allocation here, as well.

In the Medium- and Heavy-Duty Truck Demonstration category we've provided a summary of the most recent awards that we've provided, which was demonstration of all-electric truck retrofits. We also added a table that was requested that summarized our investments so far by fuel and tech type. This is Table 10 in the Investment Plan. So it differentiates between, you know, natural gas, advanced-technology engines versus fuel-cell buses versus zero-emission crage (phonetic) vehicles, etcetera. We have also added consideration of supportive non-propulsion technologies that can provide added market value to some of these advanced-technology trucks. Examples include vehicle-to-grid opportunities, charging that takes place while the vehicle is in motion, power takeoff, other applications. And again, we have retained our previous allocation in this category, as well, for $15 million.

For the Light-Duty Electric Vehicle section we've provided an updated status of the ARB's Clean Vehicle Rebate Project. This has been a very popular incentive program. The governor's January budget also provided what might be an opportunity to utilize cap-and-trade funds for this project and/or for other vehicle incentive projects administered by the ARB. So we will need to revisit our funding allocation for this category to the extent that cap-and-trade funds become available for the Clean Vehicle Rebate Project. For now, though, we've retained our $5 million allocation in this category.

The emerging opportunities allocation, traditionally this has been used to provide cost-sharing funding for projects that are seeking federal funds. It's an opportunity to leverage federal funds here in the state. The only real change that we made in this draft was to update information about current solicitation -- about current solicitation for federal cost sharing. And we've kept a $7 million allocation in that category.

In Manufacturing, we received a question at the last Advisory Committee meeting regarding the fact that all of our manufacturing projects so far seemed to be in the electric vehicle category. And -- and that has, in fact, been the case. It hasn't necessarily been designed that way though. So we've clarified that we do intend to have this category be fuel and technological -- fuel and technologically neutral towards all types. And we've maintained our $5 million allocation -- allocation in this category, as well.

In workforce training not a lot has changed here. The primary change was to remove language regarding Proposition 39 that we thought may have applied in earlier months. But it's now looking like that doesn't really have bearing on our particular efforts. And we've maintained our $2.5 million allocation.

So those are all of the funding categories within the advised Staff draft. We'll be seeking feedback from all of our stakeholders, people in the room, people on WebEx, people who couldn't attend today's workshop. We request all comments by February 14th. You can email those comments in via .pdf to docket@energy.ca.gov. And please include the subject line, 13-ALT-02, just to make sure it goes to our program's docket.

In the meantime we will continue reviewing our existing investments, as well as keeping ourselves apprized of related programs and policies. We will take all of those comments under consideration as we develop and release the Lead Commissioner Report in March. And that will be the version that we take to an April Energy Commission business meeting for formal approval.

My last slide is a summary of the funding allocations within the revised Staff draft of the Investment Plan.

So I'll take any clarifying questions now. Understand that we'll go through each of these categories a little bit later. I do have a question online. So Steve Kafka, go ahead.

MR. KAFKA: Hello. Thank you, Charles. Can you hear me?

MR. SMITH: Yeah. If you can speak up at all, that would be good. We can hear you but it’s -- it’s pretty faint.

MR. KAFKA: How is that? Is that better?

MR. SMITH: Marginally. I think we can make it out though.

(WebEx participant was inaudible and has not been transcribed.)

MR. SMITH: Steve, sorry, we can’t really hear you in the room. We’ll try to see if there’s any way we can modify the sound. Maybe for now, though, could you maybe send your -- well, try again now. We’ve turned up the mikes in the room a little bit. So try again, Steve.

MR. KAFKA: Okay. Is that any better?

MR. SMITH: A little bit better. Go ahead.

(WebEx participant was inaudible and has not been transcribed.)

MR. SMITH: Sorry, Steve, we unfortunately we still couldn’t quite hear it. I wonder if maybe --

MR. BIENENFELD: He said it would be good if we could have a list of --

MR. SMITH: I think -- I think maybe Robert was in a better position to hear your question. Thank you, Robert.

MR. BIENENFELD: Yeah. I thought what he said was it would be helpful to have a list of not only approved projects but projects that weren't funded.

MR. SMITH: Oh, is that what you --

MR. BIENENFELD: Was that it, Steve? Qualified?

MR. SMITH: Qualified but not funded; I think we can come up with that list. It would -- it would -- it might be a bit of a long list, so I don't know whether we would include it in the main text of the Investment Plan. But that's certainly something that we can visit. I know that all of the proposals that qualified for funding but received funding, that's certainly public domain information that's listed on our notice of approved awards. So we can find a way to get that information out.

MR. MCKINNEY: If I can add to that, Charles.

Steve, so I think we -- I think we understand your question. As Charles said, if you go to the web tab that summarizes our funding under the Biofuels NOPAS, those charts list everything that -- that was received, everything that was funded, passed but not funded, did not pass, and then disqualified. So we have those line item summarizes. And then the -- the proposals are all public information. So again, what Charles said, we'll be happy to work with you on that if you want to put a team to assessing those proposals.

MR. KAFKA: Thank you very much.

MR. SMITH: Thank you, Steve.

MR. MUI: Charles, Simon Mui with NRDC. I just had a quick clarification on emerging opportunities that that category -- if I understand correctly, that category was established to -- to look for -- to reserve funds for opportunities that didn't nicely fit into the other categories. I just wanted to clarify, is there a requirement under that emerging opportunities category to relieve federal funding as well now, or is that -- or is that not a prerequisite?

MR. SMITH: So in the -- in the most recent solicitation that we've run federal cost sharing was a required element. I think the tricky part of -- of not requiring federal cost sharing is that you cast a very -- a very wide net. And it's much tougher to craft a solicitation that can -- that is open to all other funding categories you know, without any sort of -- without anything that ties them all together like federal cost sharing does. I think it's still something that we can be open to.

But again, the trickier part -- it's not tricky to write it into the Investment Plan that way. It's tricky to craft a solicitation that way. So we're -- I think we're still taking input on what would be the best and cleanest way to do it if we weren't limiting ourselves to federal cost sharing projects.

MR. MUI: So if I understand correctly, the federal cost sharing helps to kind of limit the scope, so to speak, around what can be funded as opposed to having a wide open solicitation?

MR. SMITH: Yes. Yeah.

MR. CARMICHAEL: Tim Carmichael. On the same point, except that point that you just made, is there a reason not to take advantage of either Air District matching or foundation matching? I mean, depending on the year, those could be just as much of an opportunity as federal opportunities. And I don’t -- I understand you don’t -- I understand the reasons not wanting to open up to anything that could come in the door. It could get a little crazy -- crazier at the CEC. But it seems like just tying to federal funding may be a little too limiting when there are other opportunities to leverage your funding with other banks, if you will, or other funds.

MR. SMITH: Yeah. Thanks. I think we can take that under consideration.

MR. GOODARZI: Abas Goodarzi, US Hybrid. My comment is my understanding from this funding, which is very needed and I appreciate that, is that we are -- we are trying to deploy, build these units, and understand what they do in terms of tradeoff of the cost and benefit. At the same time, companies involved try to understand the cost and sustainability, and a good assessment of how much does it cost. And that information is fed back to regulatory. And regulatory sets up a certain requirement based on understanding how much the cost would be to the end users.

Based on that understanding some of these allocation of the budget really does not give sufficient cluster of development of multiple vehicles, multiple platforms, or multiple samples so the manufacturers can get a better assessment, what does it take to produce it realistic and have a sustainable product, number one.

Number two, when I have a fragmented demonstration all over the place it makes the service and support and maintaining that demonstration very difficult. So therefore, the main demonstration that was supposed to help us to validate the product, it becomes a burden.

I highly recommend that even as you go through many years of planning have sufficient cluster of the vehicles or deployments, such that both the end user and the manufacturers will come to a valued data, cost assessment and commercial viability. Otherwise, you keep -- continue going at one-of-a-kind and one-of-a-kind and one-of-a-kind.

That’s my only comment. Otherwise, the breakdown of these numbers, for example, 15 million for medium- and heavy-duty, it does not give us a cluster of the vehicles to give us good understanding of the cost and benefit, and most importantly the commercial viability of that.

MR. MCKINNEY: So, Abas, Jim McKinney here. That’s an excellent series of remarks. But I do want to note, just in terms of our process here going forward, if I could ask you to say -- restate that when we get to the funding categories for the vehicles. So we were still kind of clarifying some of the different things here, and I’m sorry if I didn’t make that clearer.

MR. GOODARZI: Thank you.

MR. MCKINNEY: Yeah.

MR. COLEMAN: So a question for you on the -- it’s actually sort of a three-part question.

So the reports that we saw before, which were the assessments of what the existing investment has done or will do in the future, is that part of the requirement of AB 8, in your mind, that was requiring the cost-benefit analysis, or is that a separate effort?

COMMISSIONER SCOTT: It’s AB 109 --

MR. COLEMAN: Or 109. Sorry.

COMMISSIONER SCOTT: -- that asks us to do the benefits report. And so that is something that we are certainly doing. And that’s what the beneficial report that Jim was talking about is for. But also AB 8 does ask us to do a benefit-cost analysis for the projects. And that’s something that we are working on, as well. So there are two pieces and they kind of go together, and we're looking at them both. So I'm not -- what's the --

MR. COLEMAN: Well, so -- so the question is, is we've gone through this in multiple meetings over the last few years. But I'm trying to understand how the allocations are being done -- excuse me, I've got a cold -- how the allocations are being done really requires that we understand what the benefits are of those allocations or what the potential reductions are of those allocations. And, you know, we've sort of requested that in the past. And I'm wondering what we had in terms of that for this plan in terms of the ability to look at what the future allocations are and what benefits we expect to see from those. Do we -- is that part of this plan or is that --

MR. MCKINNEY: I don't want to speak for the legislative intent with -- with AB 109. But part of our intent with adding these slides into the discussion today is, I think, to spur that very question and maybe have some interesting committee discussions as we go through the funding category. I know, this is really important information. It really -- and I think it really helps highlight. And I would acknowledge Dr. Marc Melajna, if you want to raise your hand, Marc. I tried not to butcher your -- your data and analysis. So -- but Marc is here for consultation and questions.

But, yeah, that's the point. And so this whole balance between kind of, you know, near-term benefits, long-term benefits, you know, the very expensive ZEV technologies that we're investing a lot in versus the more cost effective ones, say for biodiesel right now, natural gas trucks, natural gas fueling stations, that's a fascinating tension. That's one reason we have this Advisory Committee of stakeholders from all different disciplines and agencies and parts of the community trying to bring this to bear. So as we get into those discussions feel free to use these initial results as you will.

MR. COLEMAN: Yeah. So just -- I mean, as a general statement I, you know, I've been on this committee for six years. And, you know, it's been interesting to see the evolution of it. And I think the program is extremely important and valuable and was very supportive of the renewal of the program. And was also very supportive of those provisions that were requiring that we do a certain amount of analysis of the allocations.

My understanding was that there were two pieces of that. One is obviously a cost-benefit analysis of the proposals as they come in. I totally understand that. It's something that we should be doing regardless. But -- but my understanding is what's going to happen in the spring is a revision of that and some more in-depth analysis based on whatever the statutory requirement was.

But then the other piece of it is the allocations themselves. Because the benefits of this program are kind of cast in stone before we even get to the proposals based on how we allocate these dollars. And we have never really been able to sit at this meeting or any others and evaluate that because we don't really know what the proposed range of potential reductions are.

So, you know, the -- what I'm wondering is are we going to see some of those estimates, and how quickly can we see some of those estimates? Because I think it would be extremely helpful and important to see them in this report, and in particular, even just basic things which you can almost do on the back of an envelope here, which is looking at prior allocations and saying what are the potential reductions that are going to come from those individual allocations. So I appreciated the larger chart. But the -- the subsection of that is what's really interesting to me, which is we've spent $10 million on this category, $5 million on that; what are the actual expected reductions from those? And I looked at, quickly, at the IPR. I didn't see that kind of breakdown in the IPR. So maybe it's there. Maybe it's not something I can pick up really quickly. But it's -- but hopefully we can get that level of detail looking backward.

And then looking forward in terms of the proposals for this year, it would be really nice, and I think we've all sort of asked for this a number of years in a row, it would be really nice to see a column that just simply says here's what we expect from some very basic metrics. Here's what we expect in terms of potential reductions for categories like infrastructure vehicles, here are the number of vehicle miles traveled that will be enabled by this investment, here's the, you know, potential reduction as a result of that because we know the profile of those vehicle miles traveled, you know, just very, very basic math that would allow us to say, I get it, I understand why we're allocating those dollars. And in some cases we would probably see, as we all know, that certain categories are overfunded relative to their benefits. But that at least creates a reason to have the discussion around why we're doing that. And why we're doing that may be more subtle, but it may not.

So, you know, at the very least I would hope we can get to that kind of conversation. Because otherwise we kind of sit here and don't know what to say.

MR. GERSHEN: Hi. Joe Gershen here. I just wanted to agree with Will. I think, you know, there's such a nuance --

MR. MCKINNEY: Can you turn on your mike?

MR. GERSHEN: All right. Okay. Sorry. I think -- Joe Gershen here, California, California Biodiesel Alliance.

First of all, I think the new plan in many ways looks great. And I'm very happy to see the way this plan separate the biofuels by category, which is great. We'd like to see ultimately different policies in the category. I know you're contemplating that. But I agree with Will. And I think there's some nuance here, which is sort of the expected benefits assessment versus the analytical rationale, which is what's called for in AB 109.

So I think sort of -- you know, I'm not an engineer, so I look at things very sort of boots-on-the-ground non-technical. And it seems to be that there's a couple ways to look at it. One is we do these projects and we see how well they work, and then we fund them based on how well they work, versus we look in the future and we go, hey, we think that it's going to do this, not actually not knowing what it's doing.

And I think that's how -- I don't want to put words in Will's mouth, but that's how I just sort of have seen it, which is, hey, how are these things performing, and then a plan based on how we perform, not how we think they might perform in the future. And that's a subtle difference but it's, I think, you know, what I heard Will asking for, and what I've been asking for as well. Thanks.

MR. COLEMAN: Yeah. I mean, just to clarify a little bit, what I'm asking for is both. Because -- and I -- and if you look at the legislation, whether it's 109 or 8, both are actually asked for or requested in that legislation, I believe. One is this backward look of how have we been doing and therefore how do we then adjust. And then the other is a forward look of give us some basic metrics to look at to evaluate how you're doing these allocations and why. And some of them, you know, like the hydrogen one are required by law. But they're actually also adjustable by you. So it says a minimum of 20 until we get to 100, but it says that also can be adjusted based on whether or not there's the vehicles out there to sustain that.

And, you know, I think that's a question. And I'm sure we'll have a bunch of people here talking about that today. I'm really curious about the answer. But I think we just need to get to that point in the discussion.

MR. MCKINNEY: Okay. Tim?

MR. CARMICHAEL: Tim Carmichael, California Natural Gas Vehicle Coalition.

Commissioner Scott, just for your benefit, this conversation started probably four years ago with the advisory group. Will certainly wasn't the only one raising it. And I know you're a relatively short-timer on this commission and this group, but we -- it's come up every year for I think four years now. And the first year or two we kind of were feeling it out, seeing where things were going. But by the second, certainly by the third year of this program a number of us on the advisory group were saying, you know, we would all be able to get better feedback and the program would be stronger and more defensible the more of these metrics that we can incorporate.

MR. MCKINNEY: Yes. This is Jim McKinney. And again, just to -- to go back to the work that Dr. Melajna's team as done at NREL, it really advances what the staff was able to do in the very first benefits report in 2011. So the -- the methodology and the analytics are more rigorous. There's more peer review in them. It takes a lot to get a report, as I've learned, just out of the NREL building complex in the first place. So -- so we're working towards getting that data that you guys are -- are requesting. And I agree, it's very -- it's very important.

But to say a couple of things, I think from the staff perspective, you know, we interpret AB 8 really kind of, you know, zeroing in the say solicitation proposal level and not as a cost benefit. It's not a driving metric at the solicitation level. And that's really more the work of this committee, kind of taking the staff recommendations and bringing forth your arguments, your information to either support those, argue higher, lower, etcetera.

So we're -- we're working to bring that information and that data to bear with this -- with this entire programmatic process. And again, this is -- this is what I hoped would happen by, you know, introducing the NREL results initially. So again, I look forward to those conversations.

And Alberto, and then Will.

DR. AYALA: Thank you, Jim. I think you cover one of the points that I wanted to make. I just wanted to add perspective.

I think it's incredibly valuable to have benefits material in front of us. Because from my perspective it is (inaudible) of understanding in terms of how we're going to get our hands around this issue. And I very much look forward to learning more about what is here and what NREL is going to be able to help us, and trying to tie that into AB 8 and the benefit-cost assessment that we have to undertake. I think we are at a much better place today.

And thinking about the question in terms of, you know, how to reflect as to whether we're putting investments in the right area, I appreciate the presentation in terms of the direct benefits, the transformational benefits, and then the growth benefits. Having these numbers will give us the ability to do a direct comparison to some of the AB 32 strategies. Because once you quantify each one of those bens you could take the benefits and then go back and compare directly one-to-one in terms of what this is giving us relative to say some of the regulations that we put in place because of AB 32. And then if you start adding the transformational element, and then eventually the growth element, I think you start to get a sense of the magnitude of the importance that this investment is in terms of all the other measures under AB 32.

So again, understanding that we're not, you know, looking at full detail. But I see it as an extremely valuable piece of the discussion to actually have this information today.

MR. MCKINNEY: So I think it was Will, and then Simon.

MR. COLEMAN: Yeah. I mean, I don't want to beat a dead horse. But I do want to, building on that, just give an example which is, you know, you mentioned earlier, Jim, that there's a challenge in the E85 market, that something needs to change in terms of cost or in terms of structure to market. And, you know, we haven't seen funding going into E85 stations for the last two years. And yet in the proposal we're seeing that an expected 33 percent of the reductions will come from things like E85. So there's a challenge there.

But then I look at the rationale for hydrogen and for the way that we’re dealing with hydrogen infrastructure, and we’re even proposing paying O&M. And you look at electric vehicle charging infrastructure and 82 percent, according to the report that we just saw, 82 percent of that is you can go and charge for free at offices.

So, you know, we don’t have consistency across these different markets in the way we think about them. If we get into -- you know, if the argument is around whether or not these markets are structured the right way and whether we’re solving the right problem, that’s great. We need to have that discussion. But we also -- I think we need to look at it and say, just from a policy perspective, how much of the reduction are we gaining from the support of that program. And, you know, what it strikes me as is, you know, if I set out in a meeting with a company and said, you know, our sales goal is X, and they said, great, tell us all the things you’re going to go and do to get there, and I say these 15 things, and they say, okay, well, what portion of sales do you expect to come from each one of those, and I say, I don’t know, and they say, well, you’re not spending a dollar on any of that.

And that’s the equivalent here in my mind, which is do we need to actually have that estimate and say, you know, okay, E85 is struggling in the marketplace, but here are the potential reductions from that, and which pieces of this do we need to support? Because if I look at, you know, 205 stations, E85, with 500,000 vehicles out there versus looking at, you know, electric vehicle charging, 7,798 stations and 41,000 vehicles, you know, those are two very different things.

I absolutely support the electric vehicle charging infrastructure. I think that’s really important. But to think that we’re done at 205 stations on the E85 side and then the market has to get itself right is -- is something that I worry a little bit about. I think we need to apply the same filter on each one of those.

MR. MUI: I’ve just got -- Simon Mui with NRDC. I was just going to comment a little bit. I think we got into this discussion, which is probably a larger, but I think this is a helpful one. Certainly, we’ve been asking for -- and I think what I’m hearing is steps are being taken around the metrics, development of metrics. And I think to -- to Tim’s point, over the years we’ve recognized a need to develop sets of metrics.

But I’d also encourage us not to necessarily take too narrow of a view in terms of this question around both near term and longer term. You know, I think because of analytical challenges, some of the longer-term questions about, you know, is funding in this category -- you know, how do you measure those benefits is -- is going to be constrained from having done these types of analyses myself.

But in terms of the overall goals here I do see a large need around this program, certainly adding to some of what Alberto was saying in terms of the scoping plan, AB 32, that this isn't -- this is really complimentary to our longer-term goals. And, you know, I think what's missing in some of the -- what I saw, you know, which is -- there's probably a lot more to it, but the analytics, is also in terms of for each category, each funding category, and understanding of the specific goals within those categories. Because I think if we talk about merely just, you know, dollar for GHG time, you know, in a specific year, all these technologies are on different trajectories and different points in time. And, you know, those types of transformational changes are really important to capture in terms of the longer-term investments.

And to the extent that we're -- I mean, to be a little bit crass, you know, if we were to look at cost effectiveness, you know, you'd probable end up with some offset in South America being the most cost effective, but that's not what this program is necessarily about. That's one of the goals is to achieve -- get to a place where we have a set of technologies that longer term are very cost effective. And you don't get there unless you enable -- unless you hit these sort of tipping points for each of these technology categories. And I think a definition around, you know, better clarity around what are the tipping points that we want to enable through these -- through the funding of these categories?

And we have to think a little bit broader, too, given that there are other programs here at play. You know, we talked a little bit about the GHG investment plan the governor proposed. But going forward, around AQIP, as well, having that coordination, I think, really needs more than ever to continue so that we can really drive, you know, look at these investments holistically.

And I think we had a comment that, you know, these -- earlier about these technologies, you know, if you -- if you don't cluster them, if you have one offs, you know, AB 118 is not going to be accomplishing everything, I think, and that's fair to say. But it certainly, in coordination with the set of policies that we have in the state, you know, from vehicle efficiency, with LCFS, you know, sustainable cities, all of these same I think work in tandem. And we've got to step back a little bit and see how AB 118 fits into that -- into that picture, and not necessarily look at this as, you know, the program has to accomplish all the above, so to speak, in transforming. I think it's really critical that we -- we're able to step back, as well.

MR. MCKINNEY: Robert?

MR. BIENENFELD: Yeah. Actually, I think Simon said more eloquently what I wanted to say. So I'll just say that I really support what Simon said, that the different technologies are on different development timelines. And I fully support, as I said earlier, correlating benefits with the projects. I think that's important.

I think we have to be careful, as Simon said, about the creating too much tyranny of metrics. Because the, you know, the purpose, it seems to me, the purpose of government investment is to take a longer-term view towards these technologies that is difficult for private investors.

And I think that, you know, if -- if the metrics pencil out in the short term, that's probably something the government doesn't need to be doing. And we're -- we're at an area where we have not quite -- not quite found the right structure of penalties and incentives to reflect the social goals into the market to be effective enough so that we can step back. And that's a little bit of why we're here doing what we're doing. So I think you gist of it. Thank you.

MR. COLEMAN: May I ask a clarifying question?

MR. MCKINNEY: Go ahead.

MR. COLEMAN: Are you -- so are you suggesting that we are worried about actually doing the metrics and what they then force us to do? Or are you saying that you -- it’s let’s go do the metrics, but let’s just be cautious not to do everything by formula?

MR. BIENENFELD: Yes, the -- the latter, that I think, you know, I think it was chart number 25 that showed the -- kind of the long-term potential of benefits from NREL’s work. I think what’s maybe not obvious in there is that some of the -- I would venture to say that some of the higher cost and lower short-term benefits are enablers for the bigger long-term benefits. And I think that’s what Simon was getting at. And that’s -- that’s what I would say is the role of government as opposed to just doing a cost benefit and -- and working based on lowest cost of carbon reductions.

MR. MCKINNEY: Okay. So I think Carter had one. And then why don’t we -- why don’t we kind of close out this round of discussion, and then get into the -- the specific categories.

So you get the -- the last word on this, Carter.

MR. BROWN: Carter Brown here from Boulder Electric Vehicle.

Will, I think the metrics you’re referring to are incredibly important, especially coming from the private sector of having just finished a project and wrapped that final meeting literally last week. The -- the staffing and the handholding at the CEC with the private entity to develop these metrics will not insubstantial, especially if you're going to go at what is the direct result of the project, what is the near term as in the next five-year potential result of the project, and what is 20 to 25 years out as a result of the project. And, you know, obviously, each of the projects, the categories feed into the sum total for your metric, you know, those greenhouse gas reduction and petroleum.

And it would probably be helping the grant -- the grant apply-ees to get more of a standardized reporting procedure on some of those specific metrics going direct results, near term, long term, and even including NREL's expectations within those specific categories and, you know, letting -- letting the private entities or public-private entities that are applying for the funds know within the solicitation the rigor of the expected reporting and developing those metrics. So --

MR. MCKINNEY: Okay. Actually, we have another committee member on the phone that would like to speak to this topic. So I would like to recognize Bonnie Holmes Gen. Can we get her up on WebEx.

MR. SMITH: Bonnie, sorry, you're one of the -- you're one of several people listed as call-in user. So we're trying to figure out which one you are on the phone line. How about now, Bonnie, can you speak up for us?

MS. HOLMES-GEN: Can you hear me now?

MR. SMITH: Yes. Yes, we can.

MS. HOLMES-GEN: Okay.

MR. SMITH: Again, speak loud, because it's a little quiet, but go ahead.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Yeah. Thank you, Bonnie, for making those comments. And I think we were able to hear you again.

So I would like to turn to kind of the next part of our discussion, although we've already started kind of easing into it. But what we'll do is we'll go through this chart line by line. So we'll start with biofuel production.

The way we structure our format here is that first we'll hear from committee members here in the room. Then we'll go to committee members on the WebEx or on the phone. So use the hand-raising tool.

And is there anything else they should do, Darren or Charles, to be heard?

MR. SMITH: No.

MR. MCKINNEY: So we'll do that. And then we'll go to public comments in the room. And then we'll go to public comments on the phone.

So with that, I'd like to queue up biofuel production and supply. So the staff recommendation is $20 million. And I will open it to committee comments.

Alberto?

DR. AYALA: Thank you, Jim. Perhaps very briefly I just want to underline how important we think the heavy-duty -- heavy-duty sector is to reaching our goals. Earlier in your presentation you very nicely laid out the key policy drivers for us. And you mentioned medium- and heavy-duty as being an important sector.

So with that in mind I think I do want to point out to the extent that -- that you can to consider the need for diesel substitutes so that we can use them in the heavy-duty sector.

But other than that, again, thank you very much for -- for your work on the plan and for the excellent collaboration with our -- with our agency. I appreciate that.

MR. GERSHEN: Hi. Jim Gershen here. Can you hear me?

MR. MCKINNEY: Get closer to the mike.

MR. GERSHEN: Sorry. Sorry. Joe Gershen here. Yeah. I think my comments about metrics, I mean earlier, I wanted to thank you guys again for all the hard work and appreciate the different silos and the most recent pond (phonetic) You know, we encourage you to separate and do separate ponds for the different -- for the different categories. We think definitely the oversubscription of qualified projects, that sort of demonstrates there's quite a bit out there that -- that could be funded. And we still think that our funding allocations should be higher. We, again, appreciate the effort that's been made and what we see happening.

Our industry has worked really hard for -- on behalf of the AB 8, so we're really happy about that as well. We also think that the infrastructure funding should come back, the $4 million that happened and then go taken away. We definitely think it's important. We're seeing quite a bit of biodiesel come into the state. More is being made. We think that by the end of this year current funding that's happened with the Crimson plant and the other plants that we've seen around the state, quite a bit more production by the end of this year. But we don't think that the infrastructure, and I'm not necessarily suggesting rail infrastructure or shipping infrastructure, but just blending the distribution infrastructure doesn't match the production.

So in order to support the investments that you've made in in-state production, which is great and we really support it, it needs more funding for infrastructure. We're seeing that there's just not -- there's simply not enough blending and storage infrastructure. There -- there are some of the terminals out there that are trying to run, you know, 7 to 10 million gallons a year and more through a 20,000 gallon biodiesel tank. It's just not sort of sustainable. You know, if they blow a pump or something it's down.

And so there's not the kind of infrastructure that we're saying, say at the Intermorgans (phonetic) and Fresno and Colton. And hopefully, they've announced that there may be one in San Jose by the end of the year. But we'd like to see more infrastructure to support that in-state production. Thanks.

MR. MCKINNEY: Joe, this is Jim McKinney. I just want to follow up on that with a clarifying question.

So in terms of the -- the type of storage or blending facility, so are you suggesting that this is something that's needed at the -- at the plants themselves, at the blending facilities, or at different kind of storage modes? You said it wasn't rail. It wasn't marine. I'm just trying to get a better understanding of what this would look like and where the critical needs are.

MR. GERSHEN: Sure. I think there's a lot of -- there are a lot of existing terminals or racks around the states, less maybe at plants themselves but more at -- I mean, plants usually have, you know, racks, truck racks. Most plants have that. It's part of the process of building a plant. They have to get a way to, you know, to get the product out of the plant. But there is something like 75 or 85 racks around the state. And many of them don't have storage, you know, specific storage in blending for biodiesel. And so we think that that would be quite helpful to help fund some of those.

There's also quite a bit of individual jobbers and distributors, marketers, on the petroleum side. Most of the biodiesel is blended with -- with petroleum diesel. So a lot of those guys could benefit.

I think there's -- you funded Western States Oil up in San Jose, and they've been doing a great job and really put that money -- I mean, it was under $100,000, and they've really put that money to work. I fueled my own vehicle there the other day. I was up -- I was up in the Bay Area.

So, you know, they're -- they're doing -- you know, those types of projects would really benefit from some -- some help.

MR. MCKINNEY: Thank you. Are there any -- okay. Will, then Robert.

MR. COLEMAN: So just it's sort of a question about this category. I think it extends across a couple others. But you had referenced earlier the market challenges in the biofuel space and how that impacts spending on fueling stations infrastructure. And it seems like the orientation has been to focus entirely on the production side when it comes to the biofuels segment. Is that -- is that accurate, relatively speaking?

MR. MCKINNEY: No, I don't -- I think right now it is. But historically, we did some biodiesel bulk storage infrastructure funding.

MR. COLEMAN: Yeah. Yeah. I mean going forward. For this plan, I meant going forward.

MR. MCKINNEY: I'm sorry, I'm not tracking your question.

MR. COLEMAN: So I'm just wondering, it seems like the orientation for this plan going forward, given the market dynamics, the supply is really where to focus the effort when it comes to --

MR. MCKINNEY: Got it. Thank you.

MR. COLEMAN: Sure.

MR. MCKINNEY: Yeah. I mean, we -- we put money into E85 retail dispensing equipment for a number of years. And I don't remember the exact status number. I don't know if any of it ever came here. But I think we funded 205 or 210 stations. And I think 20 or so have been built at the most. So clearly there is some challenges with that space. And that's why we paused the funding for that particular category. And again, that's one way we demonstrate being responsive to changes or evolutions in the market.

So that was one that had a lot of early term potential. But for a variety of reasons it's not one we propelled as our prime contractor is able to raise capital match and really get out and build it quickly. So that's just another example of how we try to be responsive to -- to different market signals that we receive here. But it's everybody's job to kind of update us if they think there are new changes in the markets and want us to revisit something.

MR. COLEMAN: Yeah. I mean, I don't know how to solve the problem of having only, you know, one or two players out there who are willing to do something. But the main reason I ask is because it seems to me that when we're looking at the market now the biggest challenge is a demand challenge. So when you look at the fuel side the issue of financing with these plants is uncertainty around demand. So, you know, to the degree that you have a blend wall with 10 percent, you know, now it's up to 15 percent, but there are some real questions around that and what the implications are for your vehicles and, you know, how acceptable that is to some people. And that's still making investors think that really the true blend wall is really still ten percent.

But then the other component of it is, you know, when you look at the -- what’s going on with the RFS federally there’s real questions. And then obviously the LCFS and the questions of how biofuels will be treated under the LCFS, I mean, we know generally, but we don’t really know how it’s going to turn out. And so -- so, you know, the question is how do you -- how do you remedy that in the market. You know, the simplest answer is, for all these fuels, is really demand; right? I mean, it is. It is. If you have more vehicles that can take that fuel and if you have more distribution, then on the supply side you’re more likely to invest in the supply.

So I’m sort of -- I don’t know what the answer is. I don’t know whether -- whether there are other alternatives to propel who could fill that void, whether, you know, you’ve seen other applicants come in, whether there’s a way to approach the vehicle side of the equation with biofuels. You know, 500,000 seems like a lot relative to a lot of other categories. But the problem is concentrations, I think, was mentioned earlier from -- you know, in terms of EVs. I mean, the issue of biofuels is that obviously, you know, I don’t have to fill up with biofuels. I do have to fill up with electricity. So utilization rates go up pretty -- a lot higher when you’re -- when you’re talking about an EV charging station.

So, you know, it's that, I think to the point that was made earlier by Carter, that is entirely a market structure question. And I just -- I don't know if you're seeing signals that we should be reading or something different than what I was just describing.

MR. MCKINNEY: We've looked at this pretty closely for E85 retail. So there are very serious economies of scale with the Midwest corn ethanol for our in-state producers. They have a lower carbon footprint, a slightly higher price, so it's very tough to compete. You talked about 400; I've heard numbers up to a million flexible vehicles in California. The vast majority of those do not use ethanol at all.

So, yeah, market demand. So there's different ways to address market demand. One is education. One is outreach. One is pricing. One is fuel availability. So -- and there are others which are not covered here. All those work together to form that dynamic. It's a great question. But -- but again, this particular contractor hasn't been able to put them out the way we thought. And I think there was really kind of a broad understanding or agreement in the first couple of advisory committee meetings and investment plans that this was a very promising sector. It was a low cost way to get a first-generation alternative fuel into the market quickly, and that just hasn't panned out.

MR. COLEMAN: Yeah.

MR. MCKINNEY: And Commissioner Bora (phonetic) used to make the joke about cellulosic ethanol, it was a great idea five years ago, it's still a great idea, and it will probably still be a great idea in the future too; very serious technology and cost challenges in advanced biofuel development.

I just want to say, too, that you've got Bill Van Amburg sitting behind you. So one of his staff, Jamie Hall, has been talking to our staff about how to build market demand for these new biodiesel products -- they're extremely low carbon footprints -- and how to get it up B5 (phonetic) at a state level, and then go past B5 at that. I think it's a great set of questions.

So then you're talking about two, you know, kind of key market participants, the majors who are using it as a blend stock, and then large retail fleets. So we have the California Trucking Association. I don't know if they're here online today. We have CALSTART. We've got some pretty sophisticated folks who understand their markets. But there's a lot of development that needs to happen on the demand side, as you say, to build that consumer awareness. And I think in natural gas it's price, price, price. And that screams pretty loudly, and that's really one of the big factors. I thought Robert's comment was -- was intriguing. If you've got the inklings of a successful market, is government intervention still needed? If so, to what degree? And that's a great question for the committee here.

I'm talking too much, so I'll stop. Okay.

Robert?

MR. BIENENFELD: Thanks, Jim. I don't know if this is off topic or not, so stop if it is. I just wonder if there's any correlation between what we're doing here and what PUC is doing with their efforts to expand grid storage potential. I know in -- I just came from a conference a couple weeks ago where there's a lot of talk about using -- for example, in Germany something like 20 to 40 percent of wind is curtailed due to the vagaries of their grid. And I'm just wondering if some of what PUC is doing to solicit input on grid storage might be -- if it generates, for example, renewable hydrogen, if you're looking kind of broadly at that.

So some of that -- in Europe they're looking at injecting that into the pipelines. And so there's -- there's a number of ways. And the interesting thing is that we tend to kind of silo these projects. And this is kind of a broader issue, probably not directly related to this specifically, but maybe deserves some look to see if there's synergies in the future.

COMMISSIONER SCOTT: I think that’s a great point. We don’t -- I don’t know off the top of my head whether the research group is looking at that. But we can definitely dig in and find out.

I also think it just brings to mind, and it’s off topic so I’ll just make one sentence and we can take later maybe if you like, the -- the work that this team can do together with the Epic team on the electricity part is also going to be really important in making sure that we’re talking well with one another within the commission and sort of coordinating those efforts there. It’s got that same kind of idea of overlap. And so we just haven’t had a chance to talk to the Epic team because they’re -- they’re trying to get their program up and running to make sure that we are working together in that way. It’s a great point though.

MR. MUI: Yeah. This is Simon with NRDC. I’d just like to build off of what Robert had mentioned. But I think that coordination between, you know, really around the biofuels category, gets -- comes home with around biomass feedstock, you know, developing a sustainable biomass feedstock supply in California that can grow the industry here in California I think is a critical part. And there was actually, I believe, an application by one company that was trying to do -- Camelina Oil -- for, actually, bioelectricity. But there seems to be some crossover in terms of the need for some thinking or longer term thinking around developing a sustainable biomass feedstock supply within California.

And I think a lot of those issues, we've talked with a number of companies where, you know, until the feedstock question is sort of addressed around, you know, farmers and agriculture wanting to get value for those second-generation feedstocks, for instance, it is -- it is one barrier within -- in addition to some of the production and capacity constraints I think Joe -- Joe mentioned going forward, you know, how to get that really low CI feedstock into the system.

COMMISSIONER SCOTT: All right. Just so -- Joe was kind enough to invite me to speak at his conference a few weeks ago. And that was one of the topics of conversation, which -- which feedstocks to grow. And especially here in California, how much water is needed for some of those. And so I just wanted to flag that in case you want to have an interesting lunch conversation, because it was a really interesting topic. And there were a lot of folks kind of thinking through exactly that thing, that.

MR. GERSHEN: Joe Gershen here. Yeah, and thanks for coming to the conference. It was great. It was great to have you, and it was a great conference.

But, yeah, you know, in fact, certainly back to all of this, it sort of seems to make some sense. Like Jamie Hall has done some great work for CALSTART on trying to get E85 forward and beyond, and that's -- and that's great. And I think there's been a timing issue. You know, some of the infrastructure funding for -- for biodiesel in particular was a couple of years just before I came aboard this committee -- excuse me -- and it was really undersubscribed. And you guys made a point about that.

But the fact is it hadn't been very well communicated. I mean, my whole industry was barely aware of it, which is why it was undersubscribed. Also, now that some key investments have been made and we're seeing production in the state go up for low-carbon biodiesel, now it sort of seems now is the right time to bring in some of that infrastructure funding, which is why, of course, I've been lobbying for it here. Because, you know, it seems like there was infrastructure before there was demand from production. Now there's been production, and so now is the time for infrastructure funding, which is again why I've been asking for it.

But also -- and Simon, you bring up a good point about in-state feedstock. Now, Steve Kafka can probably speak to this much -- in fact, I know he can speak much better about this than I can. But there are some very interesting low-carbon in-state feedstocks that do not use as much water. And I think that you guys are all right, that we need to focus on that and maybe provide some more funding for that, as well. Thanks.

MR. MCKINNEY: Yeah. So I think we're -- okay. We'll take one from Tim. And then I want to go to Advisory Committee members on the phone or WebEx, if we have any.

MR. CARMICHAEL: So two points. One, Robert's comment about the PUC reminded me of something that we've talked about in the past, that it's helpful for all of us, I think, to see the state picture as a whole or as full a picture as we -- as you can paint.

And what I'm thinking about is in addition to this chart that shows what ARB is funding that may fit into one of these line items, obviously there's the EV line, but there may be others. PUC, as we were talking about, is going to start -- you know, is and is going to do more in some of these areas. I just think it's helpful to know, you know, if CEC -- if CEC is funding $1 million but the state as a whole is funding is $25 million, you know, we need to know that.

The second issue is Jim mentioned a big award for biofuels that was not realized, not closed, if you will. What's going to happen to that funding? Is it going to feed back into a biofuels solicitation?

MR. MCKINNEY: Can you turn your mike off? I'm smiling because Chuck White asked John and Randy and I that many, many times hoping to get a different answer. So the answer is it's gone. It goes back into the general AB 118 checkbook or fund. With legislation we can spend $100 million a year. So we can not spend more than that without legislative action. Should we have instances where there's a revenue shortfall through the registration fees, as we had a couple years back, then we could tap those monies, bring them in. But they would be general fund monies, I mean general in terms of our fund. They wouldn't be -- they would no longer have that biogas designation. And then it would be up to the committee to advise on how it should be expended.

So, no, that was the unfortunate thing with the High Mountain Fuels project. All the parties worked very, very hard to save that. And one of the reasons was is that, as you know, we have a two-year liquidation phase. And once that is passed the money is no longer accessible or available to us.

I did -- do we have anybody from CalRecycle on the line, a committee member, I don't know, Clark or John? I think Howard Levinson was not available today. I'd like to recognize them first because it gets to this exact point that Tim brought up about other agency actions and funding allocations. So

MR. WILLIAMS: Hi, Jim. This is Clark Williams with CalRecycle.

MR. MCKINNEY: Hi, Clark. Could I ask you just to speak as loud as is comfortable for you? We have a poor connection here. So we've got -- I think we have the volume amped up as far as we can on our end. So anything you can do to amplify yourself, short of screaming, would be -- would be helpful.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Okay. Thanks very much, Clark. And I want to repeat back some numbers to make sure that I got them right, and make sure everybody in the room understood that. So from your workshop it sounds like your agency recommendation is $15 million for organics processing projects. So would that include say anaerobic digestion to fuels projects? Is this a general -- what are the -- what are the allowable end products? Let me put it that way. Could it be power? Could it be fuels? Could it be something else?

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Great. Thanks very much, Clark.

Do we have any other committee members on the phone? On the WebEx? Steve Kafka, let's try again to patch you through.

MR. KAFKA: Is this any better?

MR. MCKINNEY: Not really.

MR. KAFKA: No?

MR. MCKINNEY: No. It's just -- it's just unfortunate. I apologize.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Yeah. I'm sorry, Steve, I'm going to have to ask you to -- I don't know if --

COMMISSIONER SCOTT: Can he send his question to Darren?

MR. MCKINNEY: Is there -- can you type your questions into --

MR. SMITH: The comments.

MR. MCKINNEY: What are you saying there, Charles?

MR. SMITH: If you -- Steve, if you could type your comments into WebEx, some -- Andre Freeman will get them here in the room and we can -- we can read your questions, read your comments in the room and expand upon them here. So sorry it hasn't worked out better on the audio side.

MR. MCKINNEY: And for everybody on the phone.

MR. SMITH: And, yeah, that might actually hold true for a lot of folks on the phone. If you're willing to go with us on that I think it would -- it would help us digest your comments and questions and you could probably get a little bit better response from us, as well.

MR. MCKINNEY: Okay. So if there are no other parties on WebEx, do we have public comment in the room? Matt Miyasato, you want to come up to where Randy was sitting and identify yourself, speak into the mike, all that good stuff?

DR. MIYASATO: All right. Thanks. Matt Miyasato, South Coast Air Quality Management District. I was remiss in not welcome the CEC staff and the commissioner to the South Coast region. So I'm glad to have you in the greater L.A. region.

I just want to make one comment here on alternative fuel production. As you know, in particular for biodiesel, I think Dr. Ayala kind of pinpointed the concerns that we had in the South Coast, is that it's all about NOx in our region. So we've got to reduce NOx emissions, as he mentioned, about 90 percent if we're going to hit the federal standards. So we're talking about a drop in fuel for biodiesel. We want to make sure that there are no NOx increases. And as you know, all biodiesels aren't created equal. So we really encourage you, if you're going to fund biodiesel projects, you look at renewable diesels and those that have NOx mitigations within their blends. So that’s my comment. Thank you.

MR. MCKINNEY: Great. Thanks, Dr. Miyasato.

Any other comments in the room? Any public comments on the phone?

MR. BROWN: Jim, just one quick question. Could you clarify the previous speaker that was talking about the -- his name was Clark, who was talking about the different ponds that were going --

MR. MCKINNEY: Yeah. That was Clark Williams, CalRecycle. He’s a program manager there. And Howard Levinson is the deputy director, I believe. And then Jacque Franco is a senior staff analyst and technical expert.

COMMISSIONER SCOTT: Why don’t we see if we can get the web page that he mentioned. And we’ll make sure that we get that out to everybody here so that you can look at it. And I’ll bet that some of the highlights that he went through are there, as well. So we’ll be sure to do that.

MR. BROWN: Thank you.

MR. MCKINNEY: I’d like to recognize Bill Van Amburg from CALSTART.

MR. VAN AMBURG: I never try to speak for Jamie Hall because he’s actually quite a bit smarter than I am on these things. But I do think that there is some opportunity in this space to really be thinking about ways to spur the market beyond just the production piece. It could be to bring in fleets. It could be some outreach component to that on kind of a market acceptance driver.

Jamie and CALSTART are actually organizing a low-carbon fuel summit coming up April 2nd. These are some of the issues we actually want to raise at the summit, is what are some of the breakthrough strategies to help the fuels -- for helping them into production? How do we get them faster into use, or what are some of the other barriers? And that could potentially help inform other areas in which you can put in your dollars.

MR. MCKINNEY: Is that April 2 or 4?

MR. VAN AMBURG: April 2nd. Chose not to do it on April 1st.

MR. MCKINNEY: Okay. I think we're ramping down committee discussion on the subject area. Last call for public comments? Okay.

With that I'd like to begin our discussion for alternative fuel infrastructure. And let's see, we're going to come up against lunch pretty quickly here. So I know the Air Resources Board has a presentation that Dr. Ayala will give. And I think that will be good in the light-duty electric vehicle category.

Does that work for you, Alberto?

DR. AYALA: Sure.

MR. MCKINNEY: Okay. Great. And we have CALSTART's slides now queued up.

So the -- the first category here is electric charging infrastructure. And so we -- the staff recommendation is $15 million. Just for a quick summary, that is double what the commission has done historically. Staff thinks that that is prudent given the tremendous expansion of the light-duty electric and plug-in electric vehicle markets right now. Kind of the (inaudible) stories of charger rage that Leslie Brody (phonetic) has been sharing with us, Tesla drivers clubbing one another trying to make sure their vehicle is totally charged. So -- so that's why -- and again, the governor's mandate. So the numbers are just fabulous for -- for light-duty electric sector now. I think we're at 60,000 vehicles total in the state. But there are a lot of zeroes between 60,000 and 1 million. So that was the short version of the staff rationale for giving to this category.

So I'd like to open this for Committee discussion.

MR. MUI: I'll venture. I just don't want to go first. Simon Mui with NRDC. We do see a need for continued investments in infrastructure broadly around all fields, and in particular around this electric vehicle category. We do want to start, as part of the Charge Ahead California campaign, which is a group of 78 organizations in public health, environmental justice, environmental community, supporting policies around electrification.

One of the -- one of the areas that we do see is around a multi-dwelling unit. And we'd like to see more focus connecting particularly disadvantaged lower income communities to build access going forward over the longer term. And one of the key pieces that we think obviously is making sure too that, for example, the energy settlement, that we are, in fact, doing additional installations and focusing in on -- on areas where access with the large segment of California's population actually in multi-dwelling units, to focus resources on that.

The other category that we're very supportive of is actually as we move to zero and below emission freight strategies, thinking about infrastructure in terms of medium-duty trucks, short-haul trucks, transit agencies. I'll speak to this a little bit in the next category around medium- and heavy-duty trucks. But I'll talk about a report that a broad coalition just put out called Moving California Forward on Zero and Low Emission Freight Pathways, which I'll share.

But generally those are our -- my thoughts on the infrastructure piece around electric charging.

MR. MCKINNEY: Alberto?

DR. AYALA: Thank you, Jim. Just -- I just want to echo what Simon just very nicely laid out. For the Air Resources Board, we are fully in support of the state continuing to support and invest in infrastructure, and to Tim's previous point on getting the state picture in terms of how we are all coordinated and moving in the same direction. I think to me what we're doing to transform transportation is a perfect example of what good coordination and smart investing is. And certainly our allocations for infrastructure are -- are extremely critical and supportive of some of the policies that the Air Board is supporting be placed.

Simon also mentioned that we need to start thinking in terms of prioritizing. And clearly multi-unit dwellings and workplace charging are key strategies. He also pointed to California's emerging freight strategy that is going to focus on zero and near-zero technologies.

So to the -- to the extent that we can start thinking about what comes next, I think that will be very beneficial. But again, I just appreciate the emphasis and -- and highlighting the importance of infrastructure.

MR. COLEMAN: Yeah, just to reiterate, my only concern is not about electric charging infrastructure in particular, but just that I think the number for other solutions, so biofuels, should not be zero. I think -- I don't know how you do it, but if you were -- if there was a way to create a category that could flex across these categories so that, you know, in terms of reacting to the marketplace in some way. To the degree that there are applicants out there that can fill some of the voids where we haven't seen them yet, they could come in any given year, I think you're going to create an opportunity for people to come in with opportunities we haven't anticipated.

And so it would be great to have some portion of this carved out for that. And if they don't come forward, then maybe you could apply it towards the categories they missed based on demand.

MR. MCKINNEY: Robert?

MR. BIENENFELD: Yeah. Just apropos of your anecdote from Leslie Brody, I hope we're doing some research on -- first of all, I really support this category and the funding level. I think someone mentioned earlier the potential of just displacing home charging due to the availability of free public charging might be misleading in terms of actual demand. And so I hope that in follow-up research on -- on the results we're not confusing that -- that displacement. I'm sure it's a small percentage, but we should know what that is.

MR. MCKINNEY: Robert, could you turn off your microphone please?

COMMISSIONER SCOTT: So I think we’re going to get ready to turn to going to visit the truck that we have here.

One thing I wanted to say, and I have some great notes and ideas and thoughts based on what you all have told me so far today. And maybe what I’ll do is just kind of summarize all of it at the end of the meeting, kind of the key themes of what I heard.

I did want to note that Chair Weisenmiller on the Epic program made a commitment to diversity and outreach. And I make that same commitment on the Alternative and Renewable Fuel and Vehicle Technology Program, which is that we want to try to make sure that we’re outreaching, you know, because this is -- it’s just like you said, it’s important that this program is accessible to everybody. So we want to make sure that we’re doing -- so I want to make a similar commitment; right? We’re going outreach to folks that may or may not have heard as much about this program. We want to target probably some geographic regions of the state. And we also want to track and monitor our progress for minority-owned businesses, for women-owned businesses, for disabled veteran businesses, as well, to see how we’re doing.

And so that’s something that my team is going to work on with the Epic team to make sure that we’ve got that component -- it’s just one piece of it -- but to make sure we’ve got that component as part of our program. So I wanted to highlight that for you all.

And then I’m going to turn to Boulder Electric and just say that before we break for lunch I’d like to invite Mr. Carter Brown, the CEO of Boulder Electric Vehicles, to say a few words. He’s brought for us today a model DV500 truck. These are battery electric vehicle trucks that would typically be used as delivery and service vehicles. And Boulder has sold approximately 50 of them already.

The Boulder Electric Vehicle was the recipient of a $3 million ARFVTP grant supporting the construction of medium- and heavy-duty electric truck and bus energy efficient manufacturing in Southern California. And this, I know that I don’t have to talk to you all about the terrific partnerships that were able to form with companies and folks throughout the state to really show how important it is for us to be able to transform our transportation fleet.

So I’m going to turn it to you. And then what I might suggest we do is take about a five-minute break, since we’re been going straight through. And then maybe we can all meet up front at like 12:35, and we’ll walk over to where the truck is together for folks who are interested in seeing the truck at lunchtime.

MR. MCKINNEY: Wait, one more thing.

COMMISSIONER SCOTT: Oh, sorry.

MR. MCKINNEY: Just one more logistical thing. The folks here lending us their building, they've put together a list of nearby lunch places. So I'll make these available on the back spot there so you can figure out where to go get a lunch that's nearby.

MR. BROWN: Hi. My name is Carter Brown. I'm the CEO and also the founder of Boulder Electric Vehicle. We're very, very thankful of the California Energy Commission's support.

We're very thankful for our relationship with the Los Angeles Mayor's Office of Economic Development who really started this conversation off at a conference in Long Beach, California, Plug-In 2009 in August of 2009. Alex Fey and I sat down for lunch there. He said, "We would be very interested in having a manufacturing plant in Los Angeles. And now let's start looking for the funds."

One thing Mayor Villaraigosa signed into law was the eight percent purchasing preference with the City of Los Angeles. That was a key turning point of us actually settling in Los Angeles instead of any other community in Southern California or throughout the State of California.

One of the things we've done, and we were already producing prototype electric vehicles in Colorado, we took our basic manufacturing knowledge and through the California

Energy Commission and the AB 118 support refined our manufacturing processes, light-weighted the vehicle, losing on a typical delivery vehicle almost 40 percent of the dead weight of the vehicle. And this would actually allow us to take the 80 kilowatt hours of energy stored in a battery pack and get a full 100-mile range off of that. And that is in tests that are totally loaded with soda pop or lines or packages. So that was an incredible feat just engineering.

A lot of the project went to refining our build books, refining our part management system, refining our inventory, refining our management of the manufacturing processes. One of the key things that we did on the energy efficiency side was to start cycling our battery packs. And imagine if you have two glasses of water side by side and one is completely full and the other is complete empty.

To get rid of the infant mortality in the battery cells where they die in the first ten cycles or they last 2,000 or 3,000 cycles, we started implementing vehicle-to-grid inside of our manufacturing plant for final tests, so the energy would actually go at 60 kilowatts back onto the grid instead of actually having to drive the energy down for final tests.

For battery pack tests we did another creative interesting thing. Now imagine the two glasses of water; one is completely empty, one is completely full. We're taking battery packs side by side before they go on the truck for final assembly testing and taking the energy of a full battery pack and transferring it into an empty battery pack so they equalize out. And they're each cycling, and they're cycling with only about a five percent energy loss.

So if you have an 80 kilowatt hour battery pack and it has to be cycled 10 times before it goes on the truck, that's 800 kilowatt hours of energy use. All of a sudden you're reducing that to 5 percent of only 40 kilowatt hours of energy use. So it's an incredible energy efficiency measure that we developed and implemented as part of this program with our $3 million grant from the California Energy Commission.

And over the -- over the expected ramp up of the plant, and we're planning on 50 trucks this year, and I want to say something like 150 the year after, 500, then 1,000, over the total, just the energy saved on that one step in the plant is 1,226,000 kilowatt hours of energy just saved in our manufacturing process alone.

And with that, we're going to be out. We've got handouts here about our facility. So I'm going to put them right next to the lunch information and the maps. And we have one of our electric trucks, one of the first three built here in California, out in the parking lot. And you're all welcome to drive it. Just don't take it like one of our -- one of our associates at the Energy Commission, don't take it at 100 miles an hour down the HOV lane of the 118. Thank you very much.

MR. MCKINNEY: So before we break, Carter, I think we had a question for you from the phone.

MR. SMITH: Yeah. One quick question from Clark Williams. He was asking if you could clarify the eight percent purchasing preference that you said was key to siting in L.A.

MR. BROWN: Here is how our logic went. Mayor Villaraigosa signed this into law. And it was actually after we had written the grant that we knew it was coming through our contacts with the mayor's office. He signed into law an eight percent purchasing preference for anything made inside the city limits of Los Angeles. And in effect any city fleet or organization that is purchasing goods had to give an eight percent reduction in the cost of those goods when they are bidding those goods if that particular organization was manufacturing the goods or was based in the City of Los Angeles. And our reasoning went that since Los Angeles owns LADWP, Los Angeles Department of Water and Power, it's similar to New York City owning Con Edison, which they don't.

So in effect Los Angeles has the largest city fleet in the country. So we found that an incredibly good economic incentive for us to actually start manufacturing in the City of Los Angeles. And our very first California sale actually went to the Port of Los Angeles, which falls under that.

So thanks, Clark, for asking the question.

MR. MCKINNEY: Okay. Let's go see a cool truck, and then we'll reconvene here at about 1:30. So thanks.

(Off the record at 12:31 p.m.)

(On the record at 1:38)

COMMISSIONER SCOTT: Hello everybody. Welcome back from lunch. So we're going to go ahead and get started again. I think I will turn it back over to Jim. Welcome back.

MR. MCKINNEY: Thank you, Commissioner. Thanks, Members of the Committee. So we're going to pick up again with hydrogen fueling infrastructure. So if you could get that funding -- funding, kind of basic funding slide back up.

And it's my understanding that John Shears, who is an Advisory Committee member on the phone, would like to make some comments about some of the above things. He wasn't able to connect in. So why don't we go to Mr. Shears.

COMMISSIONER SCOTT: He's not back yet.

MR. MCKINNEY: Oh, he's not available? Okay. Why don't we keep checking in with him.

DR. MIYASATO: Jim, I have a question. Are you going to have public comment for the EV infrastructure?

MR. MCKINNEY: Did I forget that? Would you like to make a comment, sir?

DR. MIYASATO: I have a question.

MR. MCKINNEY: Please.

DR. MIYASATO: And then maybe a comment.

MR. MCKINNEY: Can you approach the mike and then identify yourself, Mr. Matt Miyasato with South Coast.

DR. MIYASATO: Thanks. Matt Miyasato, South Coast AQMD. I just had -- I wanted a clarification from the staff on the EV infrastructure distribution. First of all, I support the Energy Commission and their efforts here. We're happy to be partners with the commission on several projects, as Jim pointed out in his presentation.

The question though is: Of the funding that's made available for EV infrastructure, do you have a vision on how much you would segregate for resident, light-duty, medium- and heavy-duty, or DC Fast Charger?

MR. MCKINNEY: Thanks, Matt. I think that's a very important point of discussion. And I hope -- I'm going to look at John here. We haven't really planned out how to do that next solicitation or if there will be a workshop. But I think the amount of money and the range of subject areas that we want to cover, that some level of in-depth discussion with key stakeholders is necessary.

MR. VAN AMBURG: So thank you. Bill Van Amburg from CALSTART. Just on -- on this one, we actually really support what Staff is doing to bring medium- and heavy-duty into EV infrastructure. I think that's just a tremendously smart move. I think this is a growth area that actually needs support. I would say that there are some opportunities, also, for some development work that could be needed. Maybe this falls more into the Epic line of things. But around Fast Charge, or just charging for larger battery packs in the commercial vehicle world, we're talking 80 to 120. And if you get into goods' movement vehicles, maybe 300 kilowatt hours.

So, I mean, we really need to be thinking about much larger infrastructure than just for the light-duty side, although I think there's some piggybacking that can take place around DC Fast Charging, maybe. I think -- so those are areas that would, I think, be really important to kind of keep a focus on.

The other thing is I would just say when it comes to workplace charging and some of the planning that goes on, we would really -- we think that is good on the regional basis. We would observe that I think there's also a role for kind of a statewide approach to it. There's an awful lot of similar issues that -- that could be coordinated at the state level now that the Plug-In Electric Vehicle Collaborative is doing some of that. But I think some additional resources, just to coordinated best practice and other things that are out there, could be useful to help support the regional planning that's underway so that we don't get sideways with ourselves in our own state.

MR. MCKINNEY: All right. Thank you, Bill.

Let me try that again. Are there Advisory Committee members on the WebEx or the phone to speak to this?

Carter?

MR. BROWN: Yeah. One thing I wanted to add to Bill's comments, and I really appreciate he's headed in. And I had actually explained this to Randy earlier. He said, "I've never heard the problem put so succinctly."

A lot of the major delivery fleets, whether they're packages, linens, beverages or so forth, they have their depots located in an area that is a warehouse zone, and it's zoned for warehousing. It's very poor power, very small amounts of power in that area.

So I've heard from the majors that we actually have to dig up three or four streets and run power from three or four or six or eight blocks away, all the way to our depot. It's like we don't care about the price of the

EVSEs, and that's -- that's paraphrasing. But EVSEs are relatively cheap. But it's taking them millions of dollars to run the power for, let's say, 100 delivery trucks that each have a 220 amp service with 60 amp -- with a 220 volt service, excuse me, with 60 amps times 100 trucks, there needs to be a program in place, a granting mechanism or a funding mechanism to cover the infrastructure on getting the utility to run from their generator or from their substation over across to an area that doesn't have significant power so that they've got enough electricity. And this would coincide with -- I mean, when you run larger wires they can go both ways. So this could coincide with the energy storage mandates for the State of California if these were -- the funding was tied to them being bidirectional so -- so that you could have the on-demand, you know, frequency response, regulation grid storage, you know, all in one -- one package. So that's the direction that, you know, I think some of the funding could be parceled off to with great benefit.

But Will was saying, from Onramp Capital, earlier about -- saying these are specific routes, and we know how much the return on investment will be for our carbon savings and for our petrol savings. That gives us significant return on the monies spent because you can very accurately predict the usage and the carbon savings and the petrol savings. Thank you.

MR. MCKINNEY: Okay. Thank you. Are there members present or on the phone who wish to speak to this topic? Okay.

Why don’t we go now to hydrogen fueling infrastructure. Not a lot of Staff discretion at this point. I will signal though that the Energy Commission staff and the ARB staff have started coordinating now on the AB 8 requirements. So we’ll -- as we develop those we’ll share those through the Investment Plan process with other committee members. But any discussion on the $20 million for hydrogen funding?

MR. BIENENFELD: Excuse me. Robert Bienenfeld from Honda California Fuel Cell Partnership. Yeah, we’re -- we’re very pleased with the commission’s work on -- on hydrogen infrastructure funding. And I think with respect to the discussions earlier this morning, certainly hydrogen is one of the longer term and higher potential investments, but it’s going to take a little bit of time to develop.

There’s just a couple things to note. I think the sales volumes you reference are pretty -- pretty outdated from the partnership. And I think we’re going to have to get new volumes. Right now there’s no -- it’s last best estimate, but that’s -- that’s going to be challenging.

And I think it’s timely that the CALSTART comments were just before ours. I just would like to note, and this is probably for all the fuels, that as you move into medium- and heavy-duty fleets it’s important to recognize that that -- and I think you -- I think the commission does understand this very well, and that is that there often is very little overlap in infrastructure development. And I think we should just be cautious about any kind of overlap that’s promised where consumers generally don’t want to refuel where -- where big fleets are, you know, unless it’s on -- on a turnpike out in the middle of nowhere. But that’s -- that’s just something I’d caution, and especially as it relates to hydrogen.

Anyways, thank you for the work. And, of course, we support the Investment Plan.

MR. MCKINNEY: Alberto?

DR. AYALA: If I may, I do want to take a minute to make sure that we, for the record, state the significant support that the Air Resources Board places on the allocation to hydrogen, as we discussed this morning. The more and more we understand what it is going to take for us as a state, as a society, to reach our goals in terms of air quality and greenhouse gas emission reductions the more evident it becomes that hydrogen is going to play a very important role. And anything and everything that we can do now to accelerate that transition, it is critically important. And we all need to work together towards that goal.

I'd like to say that at this point in time the funding is -- is -- it's extremely beneficial. But it is a time of all hands on deck; we've got to make it happen. We get -- we're getting one shot at this and we need to make it real this time.

And I think having the visionary statements that you made in the morning, Jim, and in the -- in the plan is helping us all push in that direction. And again, I think reiterating what was said earlier, as well, clearly the emphasis initially is going to be in the light-duty sector. But we need to start thinking other sectors, heavy-duty sector, how does this fit into an overall strategy that is really going to take transformation to get us to zero in as many different parts of the economy as -- as we begin to find out what is needed for -- for reaching our goals.

MR. MUI: Simon Mui with NRDC. And I think I just broke this -- this speaker, so you can send me the bill.

The -- but the -- on the hydrogen infrastructure thought, I did want to stress the -- the need around also, you know, to build off of some of Robert's comments, you know, to think about both the light-duty, but also this freight component, recognizing that the infrastructure may be different in infrastructure needs.

But one of the things that we are very interested in, as well as going forward as you look at the funding of infrastructure, to better understand with a lens towards lower income communities, kind of where the -- particularly on the freight side where you actually have, you know, upwards of 84 percent NOx reductions and having no GHGs, you know, that there are local benefits to those reductions, and understanding, you know, where the infrastructure is relatively -- having those metrics, and also having that overlay in terms of that lens of providing community benefits I think is a good one to just keep on engaging with and collecting and sharing.

MR. MCKINNEY: Okay. Thank you. Wow, that really is broken.

MR. MUI: Don’t -- don’t try to move the mike.

MR. MCKINNEY: Okay. Do we have any members on the phone who want to speak to hydrogen? Any members of the public? Matt Miyasato, then Bill Van Amburg.

DR. MIYASATO: Thanks, Jim. Matt Miyasato, South Coast Air Quality Management District. I just want to voice our support for the Energy Commission’s efforts, specifically with regard to the hydrogen fueling infrastructure allocation that’s noted here.

But I also want to note that we’ve been working very closely with the commission on a recent grant. I think it’s been a great example of how all of our agencies, the Air Resources Board, the Energy Commission, the local regional agency, South Coast, are working toward deployment of the stations. So I just want to thank the commission and staff for the work on that. And we’ll hopefully see an award here shortly.

MR. MCKINNEY: Yeah. Thank you, Matt. I just want to echo that back. Larry Watkins, your project manager, is really doing a great job in moving this forward. So we’re -- we’re very pleased with the collaboration.

Bill?

MR. VAN AMBURG: Bill Van Amburg from CALSTART. So I think in this area, you know, we -- it is an important investment area. And with all due sensitivity to our members and friends in the automotive side who are concerned about people not wanting to refuel where trucks and buses may be, a legitimate concern, I do think that when it comes to a business case and high volume throughput, much like in the natural gas arena, I think we’re going to see some opportunities that at least are worth paying as close an attention to as we can and see where there are win-wins there. Because I certainly see in the transit bus marketplace, the zero-emission buses, and fuel cell in particular, it’s really starting to emerge. I mean, I think we can see somewhere between 40 and 160 buses that could --

at least half of which could be fuel cell zero-emission buses over the next three to four years. That’s a lot of hydrogen moving through.

And I think the challenge we’ve had with hydrogen fueling stations in the nearest of near terms is just finding somebody who’s got a business case to run it. I think if we could find attractive places to support both markets, at least in a couple of locations, it -- it would help us as we grow this network.

But looking down the road I do also think in port regions, and particularly in Southern California, the goods’ movements vehicle with maybe a range extender structure with a fuel cell and zero-emission transit could also create some interesting early, if you will, key markets for hydrogen. So I think we have to be smart about making sure that people use them on the automotive side. But also let’s really be thinking about where these big notes might be that might -- might have two sides to the station.

MR. KEROS: Hello. Alex Keros with GM. Again, like the comments before me, just want to reiterate the support for the allocation and the good work that’s ahead of us.

I think the important thing here to remember is, from your slide, Jim, about the $40 million to $60 million that is on the street, the real benefit is putting together a network that's viable for these earliest of customers. I think a lot of the good that we've done at the partnership, as well as some of the future efforts that really boiled down some of the key execution pieces, is going to be important moving forward. But having that backdrop with the O&M funding and the other concepts that have been integrated into the solicitations I think has been a real important moving -- step moving forward, so thanks.

MR. FORREST: This is Matt Forrest with Mercedes-Benz. It'd like to echo the comments that were made before me about the hydrogen fueling structure. I'd also like to add that as a stakeholder we are working with the -- the bidders. We'll be pursuing this money and helping them to ensure that they are coming forward with the best projects that they can, that they're located in good areas to be successful to maximize the benefit to not only ourselves but also the state and taxpayers, etcetera. So thank you.

MR. MCKINNEY: Anybody else like to speak to this topic? We have no -- no committee members on the phone? Members of the public? Okay.

Let's move to our next category which is natural gas fueling infrastructure. The staff recommendation is for $1.5 million.

And, Charles, correct me if I'm wrong, but I believe the Investment Plan limits us to public institutions, like school districts or municipalities?

MR. SMITH: I'm going to bring up the more precise language. I think -- my memory is failing me. I think we plan on prioritizing public entities. I don't necessarily know whether we're categorically eliminated funding for private though. Yeah. The funding may be prioritized for the school districts and other public entities. But we're open to considering other needs as identified.

MR. MCKINNEY: Are there committee members present who would like to speak to this topic?

MR. CARMICHAEL: Tim Carmichael with the California Natural Gas Vehicle Coalition. Just two comments.

We are supportive of the amount and the framing that Charles just covered. We're clear, especially based on the connotation at the last couple of Advisory Group meetings, the importance for CEC to put some money into this category to help with refurbishment or new construction for the public fleets that are running natural gas vehicles. And there may be some good examples in the private sector where private capital is not readily available, and the CEC will determine that. We want to support that project. Either it's a geographic issue or some other challenge.

The second comment is feeding -- going back to something Jim said this morning about stations that have been funded to date. I just wanted to note that clean energy, which has the largest network in Southern California and in Trillium which has one of the larger networks in the state, maybe third or fourth largest, they are running -- they are selling renewable natural gas through their stations, not every station in the state. But most of the Southern California public access stations that they operate are selling renewable natural gas, even though the pump says natural gas. And it’s one of the things, you know, benefits or inherent benefits with natural gas and renewable natural gas is you use the same infrastructure and move, you know, or sell renewable natural gas through the same pump. And that’s what’s happening.

And they have a number of private fleet -- both companies have private fleet clients that have negotiated arrangements to do -- to use renewable natural gas. But I was referring to their public stations. Even if the customers aren’t fully aware, they’re running renewable natural gas in their vehicles.

MR. MCKINNEY: Do we have committee members, other committee members present? Committee members on the phone? Members of the public who wish to speak to this?

John Clements?

MR. CLEMENTS: Thank you, Jim. Thanks, Jim. I just wanted to comment that I support, obviously, this infrastructure. I'm very thankful for our community, City of Reedley and Kings Canyon Unified in particular, in that we just received $300,000 this summer that we're anticipating having a contract for very soon. It would be nice to have those contracts come sooner. But on the other hand of that, our Central Valley Transportation Center had received some monies early on in this program. And we appreciate having the opportunity to extend that encumbrance because it's been hard to spend some of the funds.

But as I thought about this, our first natural gas venture in Reedley, which is located in the center of the San Joaquin Valley, which is on page 105 of that Cal Screen EPA chart that just came out recently, which is in a very impoverished area in some of the worst non-attainment area, had we not received a grant in 1996 from the California Energy Commission through AB 35 that initial station would not have been built.

It was those first five natural gas buses that came to our district, our school district, long before they were Honda Civics and small- and light-duty trucks. And today that station alone displaces nearly 100,000 gallons of petroleum based fuel. And we're limping along, anticipating that $300,000 coming soon to keep that station open and build a new dispenser.

But it's through the vision of a demonstration program like that -- I mean, we tested methanol back in ‘93 for five years straight, and the advanced diesels that reduced our emissions by half at that time, that our little community today is successful. And now the City of Reedley has three refuse trucks, and we have multiple small little Honda Civics that are running back and forth with private members going to teach college and different tings like that. So -- and we have our own light-duty. So thank you for that infrastructure money.

MR. MCKINNEY: Thank you, John.

Any other members present or on the phone who want to speak to natural gas infrastructure funding? Okay.

Why don’t we turn now to the vehicle category. And the first of these will be natural gas vehicle incentives. The staff recommendation is $9 million. Committee comments?

MR. CARMICHAEL: Tim Carmichael with the California Natural Gas Vehicle Coalition. A couple of comments here.

One, we appreciate the Energy Commission support. You are the state agency that supports natural gas transportation in a significant way, and have for many years. I want to caution this group, Jim and others, in not counting our chickens before they’re hatched. Jim made comments this morning about, you know, it’s the price of the fuel is the price of the fuel, and I agree.

Even with that significant competitive advantage we need to keep in mind how small a percentage of the vehicles that are out there are actually running on natural gas. And I don't want any of our fuels or technologies to believe that we've beat petroleum or we've got to that tipping point until we really have gotten there. You know, one percent of trucks, heavy-duty trucks in the U.S. last year were sold as natural gas, one percent. It was less than that, obviously, for smaller-, medium- and light-duty. I don't know what that magic number is, but it's not one percent, and so we're not there yet.

My comment letter to you is going to say we think $12 million is a better number than $9 million, and we're going to make the case for that, you know, the point I just made, the fact that there are near- and longer-term benefits to natural gas transportation that you would be funding. And accepting -- you know, many of you know that I've been a strong advocate for the portfolio approach and have never come to these meetings suggesting that natural gas should get all or even half of the money. But we believe, I believe personally and my members believe that $9 million isn't quite enough. And, you know, $3 million is still a lot of money. That's the difference between what you approved last year and what you're proposing for this new plan, just to clarify that. Thank you.

MR. MCKINNEY: All right. Thank you, Tim.

Other committee members?

MR. CARMICHAEL: Sorry, Jim, I had one more.

MR. MCKINNEY: Okay.

MR. CARMICHAEL: Because not everyone was there last Thursday, we are extremely appreciative of the efforts the staff and Commissioner Scott have made to get a solicitation out on natural gas transportation, and very enthusiastically, and looking forward to the proposals coming in. We'll be submitting a comment letter focusing on questions and suggestions later today on that. Thank you.

MR. MCKINNEY: So, Tim, if I could just ask you to direct your appreciation to Andre and John and other members of our team --

MR. CARMICHAEL: Indeed.

MR. MCKINNEY: -- who made that happen just amazingly quick speed.

Other committee members? Committee members on the phone?

DR. AYALA: Thank you, Jim. I just wanted to add a piece of very relevant information. In the plan in your Chapter 5 where you discuss natural gas vehicles, you made reference to a potential optional low-NOx standard that the board was going to approve. And I'm very pleased to report that we actually made progress on that effort. We took a staff recommendation to our board last December and the board approved our recommendation. So as soon as that formal process gets completed perhaps the CEC should consider preferentially funding low-NOx compliant engines. And we fully anticipate that the natural gas technology is going to be indeed the one that is going to set the bar for those very low emitting engines.

So I just wanted to share that point. And we'll be submitting comments specifically to revise the description in your plan.

MR. CARMICHAEL: Sorry, one more thing. Alberto's comments remind me to mention that I actually spoke with Charles this morning to let him know that we've -- part of the comment letter will include four or five, you know, changes like the one Alberto just mentioned that were either out of date or there's a numbers difference between what we believe to be accurate and what you've got in this draft. So a few smaller items like that, we'll be submitting in writing.

MR. MCKINNEY: Thank you. Great. Members of the public?

Bill?

MR. VAN AMBURG: Sorry. When I show up at these meetings, Jim, I just have to talk.

You know, I was listening to Tim. And I actually would agree that I think we have this sense that we're winning battles that we're just barely starting to have an impact on through all the good work that's been done around this table and elsewhere.

I was just at an LNG fuels conference. And CALSTART had run the on-road sector of it. It is still not a breakout market. There's still the upfront trucks of the cost. There's still infrastructure shortages. It doesn't mean that there isn't a great business case and people aren't really interested. But I think it is wise to keep our eye on that prize.

One of the things that we are recommending to ARB and will be recommending to CEC, and I'll mention it a little bit later, is around that low-NOx engine. I think there's a tremendous ability to not -- to not let that one lag. After it's been demonstrated or developed let's get multiple versions of that on the road, validate it, and then let's move it into our future vision of what we should be incentivizing. I fully support that. CALSTART, actually, fully supports that, and we'd like to see that. Because I think that's part of our portfolio strategy that is kind of critical here for the state.

MR. MCKINNEY: Great. Thank you, Bill.

Yeah, I'd just like to add and thank -- thank you, Dr. Ayala, for reminding of us the low-NOx engine development project, and that is another collaborative project with South Coast AQMD. And as I understand it the environmental performance of that engine, if you mix in 50 to 60 percent biogas into that, that you're approaching the emissions profile of a ZEV truck -- of the ZEV truck. So it's very impressive what can be done with some of these technologies and getting down to .02 grams per horsepower, if I have the numbers right, for a medium-duty and heavy-duty truck is quite a phenomenal achievement. So we look forward to that.

And again, with our portfolio approach it just means another technology stream will then be available to consumers and fleet operators as a choice when they're evaluating kind of their next technology purchase for their fleets.

Do we have any other members on the phone? Any other members of the public want to speak to this?

MR. VAN AMBURG: Jim, if I may, there was just one other point.

MR. MCKINNEY: This is Bill Van Amburg again.

MR. VAN AMBURG: One -- one other thing on the incentive side. We've done an awful lot of work with fleets over the last ten years, medium- and heavy-duty fleets, and have done a lot of work then kind of trying to quantify what moves them or makes it easier in the marketplace. And I think a little more transparency would be something we would recommend that you look at in your next round of incentives. I think the voucher approach that a number of agencies, now New York, Chicago, California has been a leader on the -- kind of the hybrid and electric side would be really useful on the natural gas side.

There's a lot of natural gas fleets that I work with who come to me and say, "Well, California doesn't have incentives for natural gas."

And I said, "Well, yeah, they do. They've got great incentives for natural gas."

They can't find it. It's not transparent what dealer to go to. I really think something that's more of a first come, first served transparent voucher program would be something that we would really encourage because we think we want fleets to have the most access and choice they can.

MR. MCKINNEY: Yeah, thank you, Bill. I think it is first come, first served; correct?

MR. BUTLER: It is, yes.

MR. MCKINNEY: Okay. Yeah. So -- but in terms of public awareness, outreach, yeah.

MR. VAN AMBURG: Visibility of how to do it.

MR. MCKINNEY: Excellent comment. Okay. I think we've -- okay.

We have Frank Ziegler who would like to speak. Go ahead, Mr. Ziegler.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Please speak as loudly as you can. We have a very faint connection here.

MR. ZIEGLER: I'm sorry. Is that better?

MR. MCKINNEY: Better. Louder would be even better.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Great. Thank you, Mr. Ziegler.

John Butler?

MR. BUTLER: Yes. I just wanted to clarify. Thank you for those comments. Since most of those comments seem to revolve around the active solicitation we encourage you to make sure you submit your -- your comments in writing as part of the questions and answers for that solicitation. Thank you.

MR. MCKINNEY: We have a Mr. Roger Hussen (phonetic) on the phone who would like to comment.

MR. HUSSEN: Yes. This is Roger Hussen with the San Francisco Airport Commission. And really I want to --

MR. MCKINNEY: Sorry, Mr. Hussein, if you could --

MR. HUSSEN: -- express my appreciation --

MR. MCKINNEY: -- if I could just ask you to speak as loudly as possible. We have a faint connection here. Go ahead please.

MR. HUSSEN: I'll try to be a bit louder. Roger Hussen with the San Francisco Airport Commission. I'd really like to extend our appreciation to Staff for meeting with us to discuss the desirability of a voucher program for these incentives, which Bill and others have mentioned. We think that would really be much more manageable than the current process for our many commercial ground transportation shuttle operators here at SFO and at other airports. We certainly encourage that approach. And also, you know, we support Tim's proposal to make (inaudible) available, incentive funding available. You know, it should be available at most times. And if possible it should be necessary to push the year until the next solicitation.

COMMISSIONER SCOTT: Thank you for those comments. We are working on -- we've heard lots of comments similar to what Mr. Hussen was saying from the San Francisco Airport Commission. And the staff is looking very hard at how to improve the -- the natural gas program. We're not there quite yet, but we hope to be soon. And so stay tuned. And we have heard you. We are working on it. So stay tuned. And please continue to give us these valuable comments. It's important.

MR. MCKINNEY: Anybody else on the phone here? Last call for comments on this category. Okay.

We're now going to turn to light-duty electric vehicle deployment. And I think to kick off our discussion, Dr. Ayala or Peter will make a brief presentation.

DR. AYALA: Yeah. Thank you for accommodating us. What we wanted to do is prior to the -- to the meeting we were passed along a number of questions from our colleagues at CEC that -- that we thought would be of interest and is informative to the committee. And the questions, as you can imagine, center around our Plug-In Vehicle Rebate Project, cap-and-trade proceeds, demand, supply, rebates, etcetera.

So what I thought, rather than just reciting a bunch of numbers, we thought that perhaps we would structure the presentation a little bit better and have just a brief presentation by my ARB colleague, Peter Christensen, about five minutes. Peter actually is the one that has direct oversight over our AQIP program. So he's -- he's very well equipped to go over in as much detail as -- as anybody wishes into some of the numbers. But that's basically what we wanted to do.

MR. CHRISTENSEN: Okay. So I'm Peter Christensen from ARB, and I'm the one who's going to recite a bunch of numbers for you today.

DR. AYALA: And show them.

MR. CHRISTENSEN: And show you. So just as a quick -- let's go ahead and hit the next slide. Just as a quick reminder about the projects that are funded through the Air Quality Improvement Program at ARB, it includes: The light-duty incentives through the Clean Vehicle Rebate Project; heavy-duty truck incentives through the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project, also known as HVIP; advanced technology demonstration projects, these have included projects in the locomotive, off-road, and other sectors that I'll talk about in a second; and the Truck Loan Assistance Program.

Next slide. So here's where we are so far, Clean Vehicle Rebate Project. As of the end of last year about 45,000 clean cars, these are plug-in hybrids and electric vehicles, in the last year at $95 million. That's a pretty significant success.

On the truck side, successes as well. Over 1,600 trucks in the last four years at about $50 million. These are hybrid and electric trucks, mostly in the medium -- medium-duty, medium- and heavy-duty sector.

Advanced technology demonstration projects, an important part of AQIP and AB 118 at ARB. Not a huge funding amount. But nonetheless, important projects demonstrating pre-commercial technologies in the locomotive, marine, school bus and off-road sector.

And then last but not least, Truck Loan Assistance Program. This is helping the California trucking community with access to cleaner trucks, helping to comply with the truck and bus regulation. About let’s say almost 4,000 loans issued at $54 million in loan assistance, leveraging about $245 million in financing for California trucking companies.

Next slide. I wanted to talk a little bit about CVRP funding because I know that’s at the top of a lot of folks’ minds. If you look at 2012-13, the demand for CVRP rebates, clean car rebates, less than $50 million. This year, in 2013-14 there is a few different colors on that bar chart there. And you can see that the demand this year, we’re now projecting to reach about $90 million. That red portion at the top of the bar is the $30 million that exceeds the staff expectation for what the funding demand was going to be last year when we developed our funding plan. So this does say that we’re projecting a $30 million shortfall this year for the Clean Vehicle Rebate Project.

We are expecting that the available funding in the program will last through about the middle of April. And at that point we are making plans. In the event that there’s no additional funding that can be identified we are making plans to suspend CVRP until additional funding becomes avail, likely in the next fiscal year. So that plan, obviously, is very important working with our stakeholder community, with consumer groups, and especially dealerships, and the manufacturers to make sure that we have clear communication with all the folks involved, including consumers, to minimize disruption on the market. And to the extent that we can minimize confusion on the part of consumers.

The other thing that's notable about this chart that you see is that the projection for next year, 2014-15, this is actually good news that the projected demand is so high, above $200 million. But clearly we don't have funding to -- to meet that kind of a demand with our -- with our existing revenues in the program. And even if you consider cap-and-trade revenues, that hopefully will become available next year, it still wouldn't be enough to meet that demand. So we are expecting that changes to CVRP in terms of eligibility are going to be necessary next year.

And that's an important part of, I think the next slide, yes, the schedule for the development of our funding plan. This month we have a series of workgroup meetings I want to make sure everybody knows about. They actually start this week on Wednesday. And I have a list that's with me here. And for the folks that aren't in the room I'll explain how to get access to all the meetings that are coming up. We have five meetings already scheduled this month, working group meetings to talk about specific issues in the funding plan.

The first one is on Wednesday, February 12th. That’s our long-term planning meeting for the Air Quality Improvement Program. And the second one I’ll mention is also this week, a workgroup meeting on Thursday, February 13th, specifically talking about the Clean Vehicle Rebate Project. There’s a number of other meetings as well. Anybody who is interested in the specifics of those meetings, the dates and times, please see me. I have a couple of handouts here I can give you. And for folks that are on the phone or on the internet, you can find those -- a listing on our AQIP website on the ARB web page, arb.ca.gov. You can probably get there by putting AQIP into your favorite search engine as well.

But before I close, just a quick run through the rest of the schedule. We’re expecting our second public workshop prior to adopting the plan in late March. And then we’ll release the draft plan in May. And that plan will be taken to the board for adoption in June. And then we’ll start soliciting projects after that time.

So with that I’ll close and I’ll turn the mike back over to Dr. Ayala.

DR. AYALA: Thank you, Peter.

So again, in addition to the numbers, you've seen some initials which hopefully will -- will help drive the message home a lot better, I'd like to say that we're essentially -- a couple things.

On CVRPs specifically, we're victims of our own success. And that is there is so much growing market demand that we just don't seem to be able to keep up with generating the supply in terms of funding to support the rebates. And the program itself is at a crossroads where we've been directed, as we have discussed previously at this committee meeting, to consider what changes are reasonable that could continue to support the market update, but at the same time make the program a little more sustainable for the long haul in terms of the financing stream that -- that is going to continue to come into the program.

So that's what we're in the middle of. And we very much welcome and look forward to the input and participation from our colleagues, from CEC, as well as anybody who's interested. It is in the public process. And our board is going to consider that under a public meeting, as well as plenty of opportunity to provide your ideas.

The last comment I'll made is -- I'll make is AQIP itself. Thinking back in terms of the morning, the comments that were made about benefits and cost and so forth, every single project that we listed of the four has an either direct or transformational benefit in terms of emission reductions. So they are -- they are absolutely critical elements in our efforts. And again, going back to Jim's excellent presentation of the policy drivers, everything in there has a direct link to getting us critically needed criteria emission reductions and/or greenhouse gas emission reductions, and to put us on a path so that we can get to zero in the future as it is going to be needed.

So again, hopefully we captured all the information that they were interested in. And I suppose we can leave it open for questions or comments.

MR. MCKINNEY: Okay. Thank you very much Dr. Ayala and Peter. And I just want to observe that it really just speaks to the -- I think the caliber of our interagency working relationship, that the two of you would travel down to participate in our workshop, present this information. And we're all curious about -- about it, about the potential for cap-and-trade funding, what that looks like, the incredible success but kind of undo demand on the -- on the CVRP program or project. So thank you so much for -- for taking the time to come down and present this information to us.

With that I'd like to open it to the committee for comments or discussion.

MR. BIENENFELD: Go ahead. No, no, no, please.

MR. MUI: I think I'm first.

MR. BIENENFELD: You've got the broken mike.

MR. MUI: All right, since I have the broken mike here, Simon Mui with NRDC. You know, our organization strongly supports continued incentive funding for the CVRP. We do want to recognize the work that's going on right now, I think, between the two agencies to really coordinate the incentive fundings. And one of the things we do want to flag as part of the Charge Ahead campaign, which includes group like -- groups like American (inaudible), Coalition for Clean Air, Communities for a Better Environment, Greenlining, I'm missing several, Sierra Club.

You know, one of the focuses right now is around making sure that they're -- we're advancing deployment, as well, in disadvantaged communities. And I think some of the provisions that are being looked at by the Air Board, by other -- by other agencies, as well, including CEC, it's important to remember that the -- a lot of the -- there's a lot of things that can be done that go outside the -- the normal box of just pure incentives to enhancing access to electrical mobility. Some of those areas include things like linking up the incentives with the EFMP, Enhanced Fleet Modernization Project, where you're basically retiring clunkers, heavily polluting clunkers, and looking for replacement vehicles. There's no great linkages right now between sort of the SVRP and the EFMP. But also I spoke earlier about multi-use dwellings infrastructure that's targeting multi-dwelling units, things like even supporting lower income consumer financing for ZEV leases and community car sharing programs, there are aspects that the Charge Ahead California Coalition is looking at.

And, you know, just to echo some of the comments made by -- by Tim and others about how long -- how -- how far we've come but how long we have to go, you know, there's been about 60,000 vehicles deployed in California thus far, showing the enormous success of programs like the CVRP. But I want folks to remind ourselves that there's over 30 million vehicles in California. And it is, right now, a drop in the bucket. But, you know, for every 500 vehicles out there there's -- there's one electrified vehicle. It's a great start, but we do have a long way to go.

And I encourage continued coordination, particularly as the discussions around both AQIP, you know, the CEC's program and the governor's proposal around GHG funds to really try to coordinate those, both the goals and the objectives, as well as the program design elements. Thank you.

MR. BIENENFELD: Robert Bienenfeld with Honda and the California Fuel Cell Partnership. Of course, we support this program. I think we just want to reiterate a couple things. Fuel cell electric vehicles are electric vehicles and should be considered in this program. And -- and we hope that in the long term planning that you think -- think of fuel cell vehicles when they are launched next year that they get the incentive that was offered to electric vehicles when they were first launched.

I think there's been a lot said about different technologies being in different states of development. And I think these early cars are at an initial stage where they need that extra support that happened for electric vehicles when they were launched. But overall I think we support these programs rollout, as we have in the past. MR. MCKINNEY: Thank you, Robert. Any other committee members wish to speak to this subject? Any committee members on the phone? Members of the public here?

MR. MUI: You get to use the broken mike.

MR. KEROS: We're friends; right?

Alex Keros of General Motors echoing a few different comments here. First off, I think Tim and Simon reminding us that while we certainly have a lot of momentum in the PEV world, we do have a lot of work to do. And so while we're certainly working close with ARB and other stakeholders to design programs that continue to accelerate the market in all parts of the market, I just want to make two quick comments.

One, I think Robert's comment is a really valid one about the introduction of fuel cell vehicles and the importance of, you know, integrating that into our thinking of how to build these incentive programs. But likewise, the importance of the Energy Commission to stay involved in this. It's -- it might be easy for people around this table or the Energy Commission to say, well, those light-duty vehicle programs are sort of the responsibility for -- for another world, I think what's been really nice about what California has offered up is really a cross-agency focus on making sure that this industry, this market is moving forward.

So we, GM, are really supportive of your continued involvement in this. We really do like seeing that there is a number in the investment plan. I think it helps tell the world that you share some responsibility for making sure that this works. We're really pleased to see the governor's budget highlight, you know, from cap-and-trade proceeds $200 million into this world. But this takes a village. The village is going to probably have to change these programs to make sure that we support the market. But really pleased that the Energy Commission is still involved and engaged on it. So thank you.

MR. MCKINNEY: I'll take this gentlemen here, and then Alberto.

MR. SYDNEY: Thank you for the opportunity to speak. My name is Russell Sydney. I'm with New Energy Answers, and the Sustainable Transport Network. We are -- it's a network that includes a lot of electric vehicle advocates, advocates for all forms of sustainable transport and, most importantly, the people that we're actually trying to have show up, meaning the people that are using these vehicles. And I'd like to express my appreciation and thanks on behalf of everybody for all the incentives that are being provided.

I'd like to encourage that those incentives be continued and possibly expanded. Because one of the things that is missing from this is incentives for people that are seriously challenged with their fuel bills and buying the next vehicle to be included in that. There's a range of vehicles that has not been given much attention to that we call the local-use vehicles that have been successfully proven to be an effective way to reduce vehicle mile travel and to integrate people with income challenges into the mass transit system. So I would encourage anything you can do to help keep those in focus and make those available to the people that need this sort of thing the most.

And part of what's involved with supporting all of that, and my apologies for not being more timely in discussing the infrastructure part of it, but if you'll indulge me, I would like to encourage that the infrastructure needs are challenged by the lack of understanding of how important it is to locate the chargers effectively. We're seeing a lot of money spent on chargers that have very little chance of being used anytime soon.

We are also being challenged by the cost of the fuel from the infrastructure development, particularly with regards to DC Fast Chargers. The cost of the fuel is -- you know, fuel is sold by the gallon. Electricity is sold by the kilowatt hour. And yet for some reason everybody thinks that electric vehicles need to be charged by how much time they spend sitting in a fueling station. And it just doesn't make much sense. So charging by the kilowatt hour would be a huge help and a big incentive for the people in the community.

The other thing, being that there's a lot of money being poured into technology, first of all, some of which is challenged in terms of being able to use kilowatt hour billing. And secondly, it's being poured into systems that are requiring a network overhead that is increasing the cost of the fuel to us end users. And the ability to charge for fueling can be handled by many, many methods that do not require network charging. So as Mr. McKinney pointed out, the fuel costs are the issue, and those are some of the things that are of concern to the people that are driving these vehicles. Thank you so much for your attention.

MR. MCKINNEY: Great. Thank you, Mr. Sydney.

Alberto?

DR. AYALA: Yes. Thank you, Jim. I just wanted to follow up on a couple of specific points that both Simon and Robert made. Peter and I didn’t go into a lot of the detail for obvious reasons. But I think these are important points just to make sure that it’s clear to everyone.

First, on Simon’s points, just want to reiterate that everything that your coalition is working on is right in line to some of the ideas that we are contemplating as far as changes to the program. We -- we get that there -- there is very explicitly legislative interest in making sure that our programs are -- are benefitting disadvantaged communities. That is front and center in our process, our analysis as far as perhaps potential changes to the program.

Fuel cell vehicles, point well take as well. We are thinking along the lines of the program is making huge progress but we’re not -- not nearly where we need to be. And here comes the next generation of zero-emission vehicles as fuel cell vehicles. We need to think of a smarter way to incentivize them the way that we did in the old days when we first supported conventional hybrids, etcetera.

And then just to kind of frame it all, the last point that Simon made, and the point is very well taken, we are with you, we made a lot of progress. We're not even close. And I think I can give you two statistics to sort of drive that home -- that point home.

With the 60,000 vehicles that we have on the road, that is roughly two percent, two-and-a-half percent of the total market of new vehicles. In about 25 years we need to be at 100 percent. So that's the challenge before us. Thank you.

MR. MCKINNEY: Any other comments here from the committee members? Committee members on the phone? Members of the public present in the room? Matt Miyasato, you're welcome.

Before you start, I just need to quick -- as a UC alum I'm really glad you fixed the microphone at this point.

MR. MUI: Don't ask how many engineers it took. It required an automaker providing tape.

DR. MIYASATO: Matt Miyasato, South Coast AQMD. I just want to riff off of what Robert said, Dr. Ayala. One hundred percent of the vehicles need to zero emissions in 20 to 25 years. And actually, we think that has to be sooner for South Coast to meet our attainment date. So again, it's -- it's a huge challenge and a critical challenge, and I appreciate the Energy Commission helping us to -- to face that.

MR. MCKINNEY: Okay. I think that does it for comments in the room.

I want to turn to, on the phone, Steven Padliska (phonetic), if I have your name right. Please proceed. Speak loudly please. Okay. Mr. Padliska, forgive me. John Shears, who is a formal member of our Advisory Committee, had his hand raised before you. So I'm going to turn to Mr. Shears.

Talk loudly, John.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: All right. Thanks very much, John. And I'm glad you could join us this afternoon.

So, Darren, are we ready for Mr. Padliska?

Go ahead and proceed, Steven Padliska.

MR. PADLISKA: Thank you very much.

MR. MCKINNEY: And speak -- speak loudly please.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: I'm sorry, I'm not quite understanding your -- your point there. But I would just like to politely remind you that the point of this discussion is the current Investment Plan offered by the Energy Commission, the $100 million Investment Plan. There are obviously other programs and pieces of the state budget that interact with this. So we're -- we're very welcome to hear your comments on that. But please try to focus on the -- the budget proposed by staff here.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Great. It sounds like you're an end user, and I'm very glad you're participating in our event. As the ARB staff mentioned, they have a series of workshops coming up as well. And that information is available on the Air Resources Board website.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Okay. Thank you for that information.

MR. PADLISKA: Thank you too. Thank you for your time.

MR. MCKINNEY: Great. Thank you very much.

Darren, do we have other members of the public on the phone?

Oh, I'm sorry, did we get his affiliation? Do you have that on the WebEx? Yeah.

And I want to do a time check here. We're coming up on three o'clock. I know a lot of us have the 5:25 back to Sacramento. So I just want -- we still have time for a good discussion on these last couple of opportunities.

MR. SMITH: It's delayed.

DR. AYALA: We just gained half an hour.

MR. MCKINNEY: Well, I guess we have more time.

COMMISSIONER SCOTT: It's delayed.

MR. BIENENFELD: Don't count on the delay. Don't bet on it.

(Colloquy Between Committee Members)

MR. MCKINNEY: So our next funding category is medium- and heavy-duty advanced technology demonstrations. So the staff recommendation is $15 million. I know we've had a lot of good discussion already on this. And we have some slides from CALSTART, although, Bill, I've got to say, I saw a lot more than ten minutes worth of material --

MR. VAN AMBURG: I was telling Charles that that was --

MR. MCKINNEY: -- in that slide package.

MR. VAN AMBURG: -- that was really to screw with you. There's -- that's all backup slides. I just wanted to see you nervous.

MR. MCKINNEY: Yeah. Okay. Okay. So if it's okay with you, Commissioner, perhaps we can start with that presentation?

COMMISSIONER SCOTT: Sure.

MR. MCKINNEY: Okay. And I got your (inaudible).

MR. VAN AMBURG: Okay. Great. Thanks. And I will try to make this brief and to the point. If we could just go to the next slide.

I think there's -- clearly there's some critical areas of need that the committee and the advisory group has discussed that focus on medium- and heavy-duty vehicles. And I -- and I think there are some real opportunities. Clearly more money is needed in every category. Given the amount of money that is available, what would be the ways of figuring our your prime targets to really move the ball as effectively as you can. We think there's accelerated transit bus opportunities that parallels your future need in goods' movement, heavy truck, because they're going to be very similar draglines and power. And accelerated goods' movement, particularly around what's going along in the I-710 corridor right now. In fact, instead of calling it a corridor it is certainly the zone of getting to zero emission or near zero goods' movement.

If we go the next slide, we really are facing this huge challenge in commercial vehicles. We're looking at the equivalent of getting to 2010 standards to get to a 90 percent reduction over the next 18 years. It took 18 years to get to 2010 standards. We're now trying to do the similar drop on top of that. But added to that we're really trying to reduce carbon 20 percent per decade at the same time. So we have this tremendous urgency. But what we don't have this time is the federal government aligned and going the same direction when it comes to criteria emissions. We don't have their assistance because the rest of the country is not necessarily pushing that same way. And I think that therefore it makes California's choices the more critical, because we're carrying more of the weight this time.

Next slide. So there's a couple of documents. You know your own Investment Plan and the ARB vision, which has certainly been a great guide. We've completed this CalHEAT Transformation Roadmap in Technologies for Trucks, but recently completed a report on zero-emission truck commercialization, what will it take, particularly with the focus on the 710 corridor, although not only limited to it, to actually get to zero-emission goods' movement, particularly in drayage trucks.

So if we can go to the next slide. CalHEAT had three key recommendations. It had a lot of recommendations. But in the shortest of short terms, really focusing or doubling down, if you want to call it that, on zero-emission goods' movement, and really doing demonstration projects that enabled leading to commercialized platforms becoming viable by 2019-2020 is critical. And we need to get out of prototype and move through the commercialization build process. And this is for more of the heavy vehicle.

Next slide. We also can't take our eye off what's needed in the Central Valley, and those are different solutions than South Coast or the Bay Area necessarily would need. And we really need to look at how to target the line-haul truck, the pass-through truck, as well as the regional heavy trucks that do business there. They have a really difficult problem. But I think with what's going on with the low-NOx natural gas engine, other optimized engines, and maybe some advanced heavier vehicles and aerodynamics there can be some impacts. But I think you need to remain very open to that.

Next slide. And then really continue to push through the enabling technology. I was really glad to see the addition of language around enabling technology in this category. I think that's a really wise choice by Staff. We would very much support and echo that.

I just got back from some meetings with the U.S. Army out of their Tank Automotive Research Command. They are facing similar things. They're looking at electrified tactical wield (phonetic) vehicles, electrified combat vehicles in the future. There are some core enabling technologies that aren't there. And power electronics, electrified pumps, HVAC systems, and other things that will make these heavier vehicles more capable, as well as more efficient conventional vehicles.

Next slide. So we think there are some critical demos that are very much needed that could be a real target for your dollars, which are good dollars but certainly limited dollars. I think the zero-emission, drayage, commercial path demos moving from prototypes up to 5s and 10s in the near term, and moving then to 20s and 50s out towards the 2017 timeframe is -- is critical. There's several architectures, some specific architectures that really have shown promise to be viable. Natural gas extended range electric vehicles or fuel cell extended range electrics look very promising. Battery electric vehicles, although expensive, we can see a capability set there for certain applications. And then plug-in or duel-mode hybrids. So those are critical, but I think there's also some enabling tech or complimentary and zero-emission yard hostlers or terminal tractors and those types of technologies.

And then, and I mentioned this in the infrastructure piece, we do need to develop infrastructure support, whether it's in roadway or high power fast charging or other capabilities that are more geared to transit bus and truck applications than light-duty car.

Next slide. This very busy chart just shows a four-stage process it will take to get to 10,000 zero-emission trucks on the road just within the South Coast region for drayage goods' movement. And there's a variety of things that need to be done. But what I just outlined to you is when it comes to the tech demonstrations that will lead to those future products, that's one of them. We have talked to ARB, also, about the need to support vehicles currently in the marketplace in the vocational size range, like I saw Commissioner Scott driving not too fast earlier today.

We need to really extend our use in environmental justice in disadvantaged communities. We think that could build supply change. It can build infrastructure knowledge and network. And it can develop some comfort and visibility for those technologies as we move towards the heavier platforms.

Next slide. That's a nice circle. We'll go one more. I mentioned this already in zero-emission bus. We do think while they're not the same packaging they're often the same power capabilities and needs. When you look at a transit bus it's often using roughly the same engine that you'd also see in -- in a day cab Class 8 or in a drayage truck Class 8. You're going to see the balance of plan, the energy storage, a variety of power electronics being very similar. And so this is actually a very supportive parallel path that at least you need to be open -- and the Energy Commission has funded in the past. It's been a very wise investment. I think this is something where an overlap with the ARB and the air districts would be very helpful on funding.

Next slide. And this is just -- these are some of the technologies. The top one the Energy Commission did fund and get on the road.

Next slide. When it comes to line haul, a more difficult problem. We do think that really building as quickly as possible off of this demonstration program for the low-NOx engine, and then getting a large number of those engines out on the road then in demonstration validation as soon as possible, particularly in the San Joaquin Valley, although in South Coast, as well, would be good, to really push that technology forward, get experience with it so that it can be moved right into an incentive program sometime in the 2017 timeframe would be very useful.

I think also looking at other opportunities for low-NOx engines in line haul or regional Class 8, whether that could be something like the Achates engine, it can get into DME, there's some real potential in dimethyl ether, also looking at these other things that can get a heavier engine to that low-NOX. And then demonstrations of things like the longer, heavier trucks, really validating that there is a NOx reduction together with the carbon reduction. This is in dispute, but it's certainly being looked at in some test in Sweden and in Europe. Platooning, and how that can help both with reducing carbon and fuel use, as well as potentially grams per mile of criteria emissions. And then there's some other technologies that fall into that category which I think AB 8 down the road really authorizes you to look at.

Next slide. I also think CEC staff does an incredible job. But I think you're -- you're very overworked and overwhelmed quite often. It's really tough to keep up. You have a tremendous portfolio that you're trying to support. So I think some additional technical support to help you pull together and focus on the right projects answer some of the questions I heard around the advisory panel a bit today. But really serving as that technical validation with industry, really looking at pathway assessment, stakeholder coordination, I think could be a valuable role to augment your good staff.

Next slide. I think we've mentioned this, so we'll just go one more on, just one last point. I meant to mention this during infrastructure. But it's very much aligned with the medium- and heavy-duty strategy, and that is particularly around moving out these vocational e-trucks. One of the biggest challenges in that space, besides the upfront cost of the vehicle, is the infrastructure. And it's not just the EVSE, because that's relatively cheap. It's actually having to break the concrete, run the conduit out, upgrade the facilities, a variety of other costs. It can be on a per vehicle basis anywhere from $7,500 to $20,000 per vehicle.

I think this is where the Energy Commission and the ARB could have a great partnership. You did it before to help them move out the first round of electric trucks. It may be that adding some bundling or plus-up for infrastructure on top of an incentive for an e-truck could be a really valuable partnership together and make the best use of both your funds. So that would just be our suggestions.

MR. MCKINNEY: All right. Thanks very much, Bill. That was very informative. Okay.

Why don't we turn now to committee discussion in this funding category.

Alberto?

DR. AYALA: So what I wanted to do is maybe just add a couple points to -- to Bill's discussion, kind of put it in context. Because to me this is another example of why it makes sense to -- to have the agencies coordinating very closely.

To the points that Bill made, clearly investment, smart investment in the technology that we're going to need is absolutely essential. And it can be even more critical when that investment leverages some of the policies that we as an agency, we as a state can put in place. For example, we talked about low-NOx standards earlier. And Dr. Miyasato is right on point; he wanted to deliver somber -- more somber news than I did. Not only is the challenge huge, but the more and more we learn about what needs to be done the more we discover that it needs to be sooner rather than later.

So my industry friends hate when they hear me say this, but it is likely that the next evolution of a lox-NOx standard -- optional standard is going to have to be a mandatory standard. Bill talked about and very much appreciated the work that you've done in the heavy-duty sector. Those -- the research and findings that you're publishing has become extremely informative and critical for us. We're also contemplating working with the federal government on the next phase of efficiency standards for trucks, as some of you who walked the State of the Union, the president pointed to.

So all I'm saying is as -- as we move the policy, the regulatory policy, in parallel it's going to be important to also align the investment so that the two are pushing in the direction that we all want it to go.

MR. MCKINNEY: Thank you, Dr. Ayala.

Any other committee member comments?

MR. MUI: Simon Mui with NRDC. I just wanted to echo some of the comments that both Bill with CALSTART and Alberto spoke about. I have -- you know, even though the challenges are very great in terms of meeting higher quality standards, there are solutions out there. And that's the great thing is that part of these funds, right, in terms of the advanced medium- and heavy-duty are about getting to the next generation of technologies, really beyond the R and D into deployment. And I think the growth here is about getting to wider -- wider -- instead singles and tens but to hundreds over the next several years.

I did want to share a report. I only have four copies, unfortunately, to share in terms of an executive summary. This -- this report here, which I'm showing, is called the California -- is performed by the California Cleaner Freight Coalition, which NRDC is part of. But it includes 20 groups, over 20 groups, both in the environmental justice community and the public health green groups that have an interest in reducing air pollution. And one of the things identified in the report are -- are the sets of technologies, not just -- it takes a broad look at both local -- I guess some of the drayage trucks that Bill mentioned would fall into that -- local haul, but also the regional strategies, and then sort of statewide kind of freight movement, you know, that's interstate movement. And it -- what it does is it looks at the technologies available to reduce really both GHG, NOx, particulate matter. But this is very much I think this funding category in keeping with both the goals around getting to meet our air quality goals, as well as what the air districts and ARB put out in terms of the vision -- vision for 2050.

And one of the things I do want to -- so I'll share these with you. There is a fuller report that -- there should be a link to the report.

But we definitely support this category. We want to see it grow in terms of going beyond just -- just single kind of deployments into tens and hundreds of vehicles going forward. There's a big need in terms of reducing emissions from our freight sector, as everyone knows, and looking for ways to both support CEC's efforts around this, as well as provide information as needed. Thank you.

MR. MCKINNEY: Thank you.

MR. SMITH: Simon, could you either send the executive summary or the full report to our docket also?

MR. MUI: Yes. I will send it in, along with our -- our comments.

MR. SMITH: Great.

MR. MUI: Ty.

MR. SMITH: Thank you.

MR. MCKINNEY: I'll take one of those now.

Other committee members want to speak to this funding category?

I want to recognize Catherine Dunwoody from the Fuel Cell Partnership on the phone. And you have to really speak loudly, Catherine.

(WebEx participant was inaudible and has not been transcribed.)

MR. MCKINNEY: Great. Thank you very much, Catherine. Yeah. And I've heard rumors about the fuel cell truck roadmap work, so I'm very interested to learn more about that.

Do we have other members of the public there, or committee members, members of the public here?

MR. CLEMENTS: I'll speak.

MR. MCKINNEY: John, and then Matt.

MR. CLEMENTS: John Clements. I'll say that again. John Clements, school bus advocate, I guess you'd call me.

Bill, I was disappointed there was no school buses there.

MR. VAN AMBURG: I've got to get a picture of a good one.

MR. CLEMENTS: Okay.

MR. VAN AMBURG: You just gave me on today.

MR. CLEMENTS: Yeah. So I'll pass -- I'll pass these out. These are --

MR. MCKINNEY: And just use his tie just to --

MR. CLEMENTS: Yeah. Well, these -- these are the electric school bus as part of the AQIP project. Okay. It's going to be shown this week, Lord willing, and it gets out of the paint shop for some minor flaws Friday at South Coast Air District.

What I wanted to mention was earlier I commented about AB 35 which was the Clean Air CNG Alternative Fuels Safe School Bus Demonstration project that ran for over 15 years that was fuel neutral. And with the possibility of 200,000 -- or, no, let's rephrase that -- 200 million correct in cap-and-trade funds that are over at ARB, why not do a pilot project that would incorporate some these funds that would touch the rural and impoverished communities. Because nearly one-quarter of the buses in AB 35, which was somewhere, 400, if I recall, or 500 school buses over the course of 15 years, actually touched those rural communities.

And it puts it in communities where -- you know, initially when we first received natural gas buses back in the mid-'90s natural gas wasn't accepted by the local rural farmer. But when he saw the John Deere engine in the back of a yellow school bus he goes, oh, my gosh, this is the same engine I've got in a tractor but it's running on natural gas. And it was much more accepted.

And so I just throw that out for a what if, to plant the seed, take some of those funds that are going to be hard to reach the rural community, make a school bus pilot program similar to the successful you already had before, work that along the lines of your emerging opportunities, and even your manufacturing. Because even with this one electric school bus that will become probably four, five or six when we're done, it takes the numbers to get that manufacturing going.

I mean, we're -- we're building an electric EVI warehouse truck on our own using federal funds and some HVIP funds to deliver school lunches. When the local farmer that goes to the farmers' market or runs his produce to Fresno in a bobtail truck sees that school district EVI truck, you know, that's zero-emissions running successfully daily delivering lunches and breakfasts to our impoverished schools he's going to go, wow, how do I get one of those, and then there may be some further interest.

But I just throw that out there. There's still a demand. We have to meet the truck and bus rule. We've got 15 buses out of 70 that aren't meeting that now. And this could be a means that through a partnership, and I know you have good relationships with ARB that maybe we take some of those cap-and-trade dollars and we can extend those to the school bus industry and get them to -- to build some cleaner buses. The -- the large bus manufacturers do not have an interest, most of them at this time, in an electric bus unless there were the numbers. And that's why they built the CNGs and they built methanols, and they did build a few electrics back in the '90s, but the technology is there. And the technology that then would be used in those school buses is easily transferrable to the mid- and the large-sized markets for other products. Thank you.

MR. MCKINNEY: Matt Miyasato. Matt Miyasato.

DR. MIYASATO: Thanks, Jim. So Matthew Miyasato, South Coast AQMD. Just a few brief comments.

I want to thank the Energy Commission for the work that we're doing together in the sector. I applaud Staff's recommendation for $15 million. As mentioned previously, this is a critical sector for us to -- in order for us to attain our clean air goals.

What I would urge the commission to do, however, is really focus on two words, goods' movement. I think of the projects that you've -- you've funded previously, they were kind of across the whole spectrum of medium and heavy duty. And I would really urge you to focus on goods' movement in this upcoming year because, as Dr. Ayala mentioned and Simon mentioned, the need in that sector is critical. I think in your -- your Investment Plan you've outlined some key projects that we're working together on.

But if you look at your overall portfolio I think that that percentage it actually pretty small for the Class 8 heavy-duty in terms of the overall spending.

So I'd really, really encourage you to focus on these near zero-emission technologies for the duty cycles that affect goods' movement.

MR. MCKINNEY: Thanks, Matt. And just to clarify, so when you talk about goods' movements, so you're talking about Class A trucks and not the itty-bitty package delivery?

DR. MIYASATO: Yes. So really moving containers into and out of the ports.

MR. MCKINNEY: Thank you.

DR. MIYASATO: And one last comment. If you're entertaining the idea of having another meeting in the South Coast we'd be happy to host you at the Diamond Bar facility. We'll have cookies in the afternoon.

COMMISSIONER SCOTT: Sold.

MR. MUI: All in favor?

MR. MCKINNEY: Okay. Carter, did you want to speak?

MR. BROWN: Yeah. Likewise, if you want to do a southern meeting you can come up to our facility in Chatsworth and we'll have coffee in the afternoon. Let's see, I would -- there are two things.

One, whichever way you go with the medium- and heavy-duty with this specific vehicle technology, the demonstration, I think it’s very important to bear in mind that you have a California-centric -- California-centric path to commercialization. If you’re going to do 1 or 2 or 5 or 12 or 20 demonstration vehicles, that you’ve got a corporation, preferably, that’s actually based in California that sees the writing on the wall and is not, you know, an East Coast corporation that comes out to California once in a while, but is a California-centric path to commercialization. And that way whoever is developing the prototypes, whoever is doing the demonstrations also has the commercialization partner to take this project out of the realm of CEC funding and into the realm of purchase orders with bank financing. I think that’s incredibly important to have that pact.

Secondly, within the medium-duty I know CEC, and through CALSTART who had the Plug-In 2013 Conference, go through a demonstration in analyzing electric vehicles and electric delivery vehicles. And having the two companies that deployed those vehicles, the two OEMs, one of which was a major Midwest manufacturer, pulled the plug on their EV truck program. The other is an EV truck company that’s barely breathing anymore. So -- and her conclusions were because the trucks were not being used close to their optimum range that they weren't being used in an economically viable manner.

So to counteract those results you've actually got to have an OEM whose trucks are being used very close the maximum range or even with range extenders passed the maximum range so that the end user, the end delivery company, whether it's linens, packages or whatever, can get the maximum economic viability.

So I guess what I'm saying is the -- the previous demonstration was -- came up with results that are not going to encourage major corporations to deploy this economically. And therefore that ought to be looked at as actually almost a redo, so that you can figure out how to deploy them in an economically viable fashion for the end customer. Because if the economics aren't there for the end customer, you know, we're not going to get to our goals. Thank you.

MR. MCKINNEY: Thank you very much. Alberto?

DR. AYALA: Just a real quick point. Staying with the theme of benefits, the point that Dr. Miyasato just made is right on target. And it occurred to me that you can actually use the work out of the CalHEAT project that recently put into perspective the contribution in terms of emissions, both criteria and greenhouse gases, from the different medium- and heavy-duty sector category. So again, same point to what -- what Matt said, Class 8 out of that work comes out to be that priority area. So you could use that for your funding plans.

MR. MCKINNEY: Okay. Thank you. And along those lines -- sorry. We just had a quick question from Catherine Dunwoody online. She -- I think she wanted to know which report you were referring to, Carter?

MR. BROWN: Yeah. At the Plug-In 2013 Conference this past October, down in San Diego, Yaslin Tolomak (phonetic) from CALSTART presented her findings of the medium-duty delivery truck routes. And she presented that in a PowerPoint presentation at 2013. And I don’t know exactly the name of that presentation.

MR. MCKINNEY: Other comments from committee members here or members of the public? Members on the phone? Okay. And just to follow up on what both Dr. Ayala and Dr. Miyasato said, for our current amount of money we’re just starting kind of staff-level, you know, discussions on what the next PON (phonetic) should look like, and that’s something just getting underway. So these comments and inputs are very, very helpful. So thank you for that. Okay.

Why don’t we then go the last part of the funding categories, so emerging opportunities the staff recommendation is $7 million.

Charles, is there anything you want to add to that, or start it from here? Start it from here. Okay.

Any committee comments on this funding category?

MR. MUI: I just had a question about -- Simon Mui with NRDC. I just had a question about the -- the project for the catenary (phonetic) -- the hybrid trucks for the catenary one, certainly a very important area for the 710 corridor.

I’m just wondering, logistically is that not considered part of the medium- and heavy-duty advanced vehicle technology, or was it different enough to separate it out?

MR. SMITH: So we -- we did fund it out of this emerging opportunities category. But when we track projects we do track it as a medium- and heavy-duty truck demonstration type project. And part of the -- yeah. So that answers that question.

MR. MCKINNEY: Are there any other -- let’s see, do we have committee comments in the room? Committee comments online? Do we have public comment from the room? Public comment online? Okay.

Why don’t we go to the manufacturing line item. The staff recommendation is $5 million. Any discussion from committee members?

MR. CARMICHAEL: I like this category. I’m glad somebody, maybe Jim or Charles, mentioned earlier that only

EV components have been funded to date. That wasn't -- it's not limited to -- this category isn't limited to that scope, and we appreciate that. And I know that there are some ideas floating around about some NGB and other potential manufacturing proposals. So it's an important piece of this puzzle.

MR. MCKINNEY: Other committee member comments on this one? Dr. Ayala?

DR. AYALA: Yeah. I guess the only -- the only thing I'll add is looking at the specific -- the table that you included, table 14, to consider the comments that you've heard today, in the table you're proposing, light-duty and heavy-duty funding splits, consider the comments today, the emphasis on the need for looking to the heavy-duty sector. So anything that you can -- you can do, both on the manufacturing side of that, as well.

MR. MCKINNEY: I think that's a good comment. And just a friendly reminder, back to the comments I had on the benefits' slides, so there was a lot of future benefit from just really a handful of companies and investments in this particular sector.

Do we have anybody online? Anybody else in here?

MR. BROWN: We've looked at manufacturing, taking our aluminum honeycomb and taking -- making an entire tractor-trailer out of that, just on the trailer side, and putting a giant battery pack under it, probably something like 400 kilowatt hours. You know, it’s doable. It’s incredibly expensive. And, yeah, there needs to be R and D funding there to take that to market. And it’s not really even taking it to manufacturing. It might fall under there, but it’s really R and D. Because nobody is making electric semis right now.

MR. MCKINNEY: So I just want to say, I got to drive the -- the motor electric truck around campus at lunchtime. And I may have taken it further than you did, Commissioner. Carter said, “Put your foot on the gas pedal, Mr. McKinney and punch it.” And that little puppy really gets up and goes. And I think it’s due to the framing, the aluminum framing the light weight that you’ve done on it. So it’s really, really interesting, and it was a fun way to spend my lunch break.

COMMISSIONER SCOTT: I’d say that.

MR. MCKINNEY: Yeah. Okay. Our final category for today is workforce training and development. So we’re -- Staff recommendation is $2.5 million. And unfortunately this is not a category that I think we spent enough time on discussing, A, because it’s at the end of our thing -- our list here, but this is just a critical part of the mosaic or the puzzle and getting all these pieces to work together in getting technology and customers and people to know how to service, maintain and assembly these types of advanced technology vehicles.

Do we have any committee member comment on this?

DR. AYALA: Yeah. I totally agree with that. I think part -- for whatever reason we get to this part, and it's so critically important. We just don't do it justice. And I was going to ask, and perhaps this is food for -- for thought for the next meeting, but it would be really nice for the committee to hear from you, the staff, in terms of what is the approach to calculate the cost -- the benefit-cost for this category? And what are the thoughts, what are your perspective -- perspectives in terms of how is the program going? I mean, is it really impacting? What are we hearing from -- from the students that are actually benefitting from the finding? It would be really useful, I think, for the committee to hear back. And certainly I would propose and support putting this at the top of the agenda so that we can actually get to it.

COMMISSIONER SCOTT: That's a really nice idea. I will just -- Alberto, I did get to go out to the Santa Clara Valley Transit Authority. And -- so it's an anecdotal story. But it was -- it was -- and that one is really neat because they've got a bunch of different types of buses, but they also have a light rail. And they're using the money to help folks learn how to run the -- the hybrid buses that they have and some of the natural gas buses that they have, but also to be able to make the transition from working on the buses to working on the light rails. And the -- the folks that we talked to who had been able to take advantage of that training were really excited that -- otherwise it would have been harder for them to get that type of opportunity.

But I'd love to go see some more of those. And I like the idea of how can we pull together some additional stories and really talk about that, and also talk about the cost benefits.

MR. MUI: Yeah. I just wanted to support moving that maybe to the -- the agenda the next time around. And I can see folks are eager to catch their flights. But, you know, we -- I've spent some time working with our -- through our BlueGreen Alliance with a number of national labor organizations. And I just want to flag that if it is something that you want to have greater input on, maybe reaching out to some of the folks who do this for -- do a lot of training and development and have experience there can kind of help -- help provide some information about some areas to target perhaps. Thank you.

MR. MCKINNEY: Yeah. Thank you. Yeah, we would like to learn more about that, Simon.

Any other comments from committee members from the phone?

COMMISSIONER SCOTT: Yeah. I just had -- I had a summary when we've completed all the public comments.

MR. MCKINNEY: Yeah. So any -- any other comments or last remarks before I turn it back to Commissioner Scott for her closing remarks?

DR. AYALA: Just -- sorry I didn't say that at the top of the meeting. I really want to thank you, Jim in particular and your team, and Commissioner Scott, the entire CEC team. It's so gratifying to see the quality of work and effort that goes into the plan. And, I mean, the discussion, the interaction with the agencies, the ability that we have to interact with you to provide comments, so I just want to say what a gratifying experience it is to work with you.

And, you know, we stand ready to do whatever we can to strengthen that collaboration and relationship so that we can make, perhaps, part of your job a little easier. Because somebody mentioned it earlier, I know that you guys are putting in a tremendous amount of work and energy. And just you need to hear that it goes into -- it's very much appreciated because it's so critically important to what we're trying to do.

COMMISSIONER SCOTT: Okay. Great. Well, let me give a few sort of overarching -- or a summary of some of the overarching themes that I heard today. You know, maybe I'll start with the overarching goals that we have in terms of climate and clean air and the challenges that we have. Jim flagged it in his presentation. Both Matt and Alberto mentioned the 90 percent reduction in NOx that we will need by 2023 and needing all the vehicles on the road to be zero-emission vehicles. And depending on which one of you -- which one of them you ask it depends on how fast we need that transition to happen.

We talked about connecting the awards and activities of this program and their benefits to -- back to those goals, and trying to do that in a more concrete way. And, you know, what are the expected reductions from the investment made? How do we better articulate that? Where do we articulate that? How do we, at the Energy Commission, take some time and really flesh that out, put the specific goals with each category? How do we make sure that programs that are complimentary, whether they're Air Quality Management District programs, they're Resources Board programs, Energy Commission programs, are complimentary and that they're highlighted so that we're kind of capturing the broader context and the big picture there.

We talked a little bit about some of the tipping points that we see for these fuels and technologies. And we talked about not counting our chickens before they hatch, which I think was important for all of us to think about. We're right at the beginning of this important transformation.

We talked about the transformative impacts of investments, the importance of making sure that everybody could take advantage of these programs or feel the benefits from these programs, disadvantaged communities, lower-income communities. We talked a little bit about the commitment that I'd like to make which is similar -- or that I have made -- that's similar to the chair's on Epic in terms of outreach to minority- and women-owned business and disabled veterans, to making sure that we're targeting geographic regions of the state as appropriate, and to do a better job of tracking that. And so we're going to be working closely with the Epic team so that we're not recreating each other's wheels and put that information and data together.

We talked about the importance of the infrastructure for the light-duty side. But that infrastructure for the light-duty side is not the same thing as infrastructure for medium- and heavy-duty, and that we really need to focus on that as well. Both are needed. Goods' movement, freight movement is all important.

One of the things that I wanted to let you all know, the chair mentioned this in our January business meeting, I am going to be the lead on the 2014 IPR. It is going to have a transportation focus. The scoping order is coming out sometime soon, so you should keep an eye on that. I would very much appreciate your thoughts and input on the types of discussions we should have, some of which I think are things that we touched on today but didn't really have time to dig into. Those could make really interesting potential IPR workshops. So once that scoping -- keep an eye out for that scoping order. I don't quite know exactly when it's coming but -- and it will be transportation focused. So I'll very much look forward to your -- your input on that.

And then I just wanted to say thank you to all of you for your partnership and your expertise. I really do appreciate your constructive input, your valuable input here. And I think, you know, Robert, you mentioned some updates to the fuel cell numbers. Tim mentioned some updates to natural gas numbers. Simon, you flagged your report. And others who have data and information, please be sure to get that to us on the record. It is valuable. We do use it. And so don't -- don't forget to send that to us. We'll be -- we'll be looking for that.

And I also wanted to thank you for your recognition of the good hard work that the Energy Commission staff does on this program, all day, every day. I think you can see their diligence and their care. And I appreciate you for appreciating them. I appreciate them as well. I think they do a terrific job. And so, I mean, we did the round of applause, but I really do thank you guys for your terrific work.

Two last -- two -- a couple last things. So I wanted to thank you all, also, in the room for your patience with the sound system. Apparently everybody else could hear everything just fine. So that's at least a good thing for folks on WebEx and on the phone.

I wanted to thank Carter for bringing by the Boulder Electric Vehicle. I did enjoy driving it. I went a little slowly because I wouldn't have wanted a story about a commissioner running over a student. So it was -- that was a fun vehicle to drive. Thank you for bringing it.

MR. BROWN: You're welcome.

COMMISSIONER SCOTT: And to our hosts here at UC Irvine for letting us meet here. I think it was great. And I appreciate folks for coming to Southern California, of if you were already here to -- oh -- to being here. So we just wanted to give it a try and see if we got some different folks. Southern California, as you all know, is, of course, just as important as Northern California. So we're glad to be here and do this.

And I want to thank Darren, also, for running the WebEx. It was so smooth that it was just there all -- all day. So -- and thank you all. I hope you have safe travels back.

MR. MCKINNEY: Thank you.

(The Commission meeting adjourned at 1:45 p.m.)

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CERTIFICATE OF REPORTER

I, MARTHA L. NELSON, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Advisory Committee Meeting; that it was thereafter transcribed.

I further certify that I am not of counsel or attorney for any of the parties to said conference, or in any way interested in the outcome of said conference.

IN WITNESS WHEREOF, I have hereunto set my hand this 6th day of February, 2014.

/s/ Martha L. Nelson_
MARTHA L. NELSON

CERTIFICATE OF TRANSCRIBER

I certify that the foregoing is a correct transcript, to the best of my ability, from the electronic sound recording of the proceedings in the above-entitled matter.

/s/ Martha L. Nelson
MARTHA L. NELSON, CERT**367

February 6, 2014