

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

In the Matter of: )  
 ) Docket No. 12-ALT-02  
2013-2014 Investment Plan Update )

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

CALIFORNIA ENERGY COMMISSION  
HEARING ROOM A  
1516 NINTH STREET  
SACRAMENTO, CALIFORNIA

THURSDAY, FEBRUARY 28, 2013  
10:30 A.M.

Reported by:  
Kent Odell

APPEARANCES

Commissioners (and their advisors) Present:

Robert Weisenmiller, Chair  
     Sekita Grant, His Advisor  
 Karen Douglas, Commissioner  
     Galen Lemei, Her Advisor  
     Jennifer Nelson, Her Advisor

Staff Present:

Jim McKinney, Program Manager, Alternative and Renewable  
     Fuel and Vehicle Technology Program  
 Charles Smith, Project Manager, 2013-2014 Investment  
     Plan Update  
 John P. Butler II, Office Manager, Emerging Fuels and  
     Technologies Office  
 Randy Roesser, Deputy Director, Fuels and Transportation  
     Division  
 Andre Freeman, Staff, Emerging Fuels and  
     Technologies Office

Advisory Committee Members Present (\* via WebEx)

Alberto Ayala, California Air Resources Board  
 \*Shannon Baker-Branstetter, Consumers Union  
 Tim Carmichael, California Natural Gas Vehicle Coalition  
 Peter Cooper, California Employment Training Panel  
 \*Tyson Eckerle, Energy Independence Now  
 Stephen Ellis, California Fuel Cell Partnership, courtesy  
     of American Honda  
 Joe Gershen, California Biodiesel Alliance, courtesy of  
     Crimson Renewable Energy  
 \*Bonnie Holmes-Gen, American Lung Association  
 Ralph Knight, Napa Valley Unified School District  
 Howard Levenson, California Department of Resources  
     Recycling and Recovery (CalRecycle)  
 Anne McMonigle, California Labor Federal Workforce and  
     Economic Development Program  
 Jack Michael, Recreational Boaters of California  
 Jananne Sharpless, Member at Large  
 John Shears, Center for Energy Efficiency and  
     Renewable Technologies  
 Chris Shimoda, California Trucking Association  
 Eileen Tutt, California Electric Transportation Coalition

APPEARANCES (Continued)

Also Present (\* via WebEx)

Public Comment

\*Paul Staples, HyGen Industries  
Pat Schiavo, CR&R, Inc.  
Russ Teall, Biodiesel Industries, Inc.  
Dave Almeida, California Center for Sustainable Energy  
Will Barrett, American Lung Association  
Matt McClory, Toyota  
Matt Forrest, Mercedes-Benz Research & Development  
North America  
\*James Provenzano, Clean Air Now  
Steve Douglas, Alliance for Automobile Manufacturers  
Alex G. Keras, General Motors  
Esther Perman, Propel  
Ben Winter, Transfer Flow, Inc.  
Dipankar Sarkar, South Coast Air Quality  
Management District  
Bill Elrick, California Fuel Cell Partnership  
\*Chris Perkins, SkyTran, Inc.  
Ed Pike, Energy Solutions  
Chad Willey, Phoenix Hybrid and Electric  
Rebecca Boudreaux, Oberon Fuels  
Jamie Hall, CalSTART  
Peter Ward, Alternative Fuels Advocates  
Jordan Brandt, Phoenix Hybrid and Electric

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1 P R O C E E D I N G S

2 FEBRUARY 28, 2013

10:41 A.M.

3 CHAIRMAN WEISENMILLER: Good morning. Let's  
4 start the meeting kickoff. I'd like welcome everyone  
5 today to the Alternative and Renewable Fuel and Vehicle  
6 Technology Advisory Committee Meeting. And the purpose  
7 of this meeting is to discuss the 2013-2014 Investment  
8 Plan Update.

9 I am Chair Weisenmiller. I'm Chair of the  
10 Energy Commission. I have alongside me Commissioner  
11 Douglas, as well as our Advisors -- I believe Jennifer  
12 Nelson, Galen Lemei, and Sekita Grant are here.

13 And I'd like to thank you -- thanks to all the  
14 Advisory Committee Members for taking the time to attend  
15 this meeting and to share their expertise with us.

16 I'd also like to take a moment to introduce a  
17 new member to the Advisory Committee. Chris Shimoda,  
18 there's Chris, is the Manager of Environmental Policy for  
19 the California Trucking Association. The California  
20 Trucking Association is a nonprofit trade association  
21 that represents the trucking industry in California. The  
22 expertise and perspective of the trucking industry, as  
23 well as Mr. Shimoda, would be a great value to the  
24 Advisory Committee discussions.

25 Chris, welcome and thank you in advance for

1 your service.

2           As many of you know, the Investment Plan Update  
3 will establish priorities and an opportunity for the  
4 ARFVTP Program, as well as studying funding allocations  
5 for the 2013-2014 Fiscal Year. In this Update, as  
6 mandated by Assembly Bill 118, the Energy Commission will  
7 continue to support the development and deployment of a  
8 diverse market of alternative and renewable fuels and  
9 advanced transportation technologies.

10           The projects we support through the ARFVTP  
11 Program are significant in meeting the State's goals for  
12 reducing greenhouse gas emissions and petroleum  
13 dependence in the transportation sector. Therefore, the  
14 work we do today, as well as planning we do in the future  
15 Investment Plans, are critical.

16           The purpose of today's second and final  
17 Advisory Committee Meeting is to gather advice and  
18 guidance from the Advisory Committee on Fiscal Year 2013-  
19 2014 Draft Program Investment Plan. The Investment Plan  
20 will get final approval at a May or June Energy  
21 Commission Business Meeting.

22           I'd like to extend my appreciation to the staff  
23 in the Transportation Division for their tireless work on  
24 this plan. A special thank you to Charles Smith, Jim  
25 McKinney, Randy Roesser, and John Butler for their

1 invaluable contributions.

2 I look forward to an informative and productive  
3 day discussing the 2013-2014 Investment Plan updates.

4 Also, I would like to recognize Jim Boyd, who I think may  
5 even have stepped out at this moment -- no, there he is,  
6 he just shifted. Okay, anyway, welcome back Jim! And  
7 now I'll turn it over to Commissioner Douglas for her  
8 remarks.

9 COMMISSIONER DOUGLAS: Well, good morning  
10 everyone. I'm really pleased to be here. I'm also  
11 looking forward to a very informative and productive day.  
12 I have not been participating in these Advisory Committee  
13 Meetings for some time, but of course I was in the first  
14 Advisory Committee Meeting because, as a new Commissioner  
15 working on the Transportation Committee with Commissioner  
16 Boyd, it was one of my first assignments.

17 And so I do have quite a bit of experience with  
18 the program, though not as much hands-on recent  
19 experience, so I'm pleased to be here. I'm looking  
20 forward to hearing from all of you. Thank you.

21 MR. MCKINNEY: So I'm Jim McKinney. I'm the  
22 Program Manager for the Alternative and Renewable Fuel  
23 and Vehicle Technology Fund. I'll be moderating today's  
24 discussion. Traditionally, we take a chance for the  
25 Advisory Committee Members to introduce themselves, so

1 we'll go first around the table, we are sharing  
2 microphones, and then we'll go to Committee Members on  
3 the phone.

4 DR. AYALA: Good morning. Alberto Ayala from  
5 the California Air Resources Board.

6 MS. TUTT: Eileen Tutt from the California  
7 Electric Transportation Coalition.

8 MR. SHIMODA: Chris Shimoda, California  
9 Trucking Association.

10 MR. ELLIS: Steve Ellis with American Honda,  
11 also representing the California Fuel Cell Partnership.

12 MR. CARMICHAEL: Tim Carmichael with the  
13 California Natural Gas Vehicle Coalition.

14 MR. LEVINSON: Howard Levinson, CalRecycle.

15 MR. KNIGHT: Ralph Knight, Napa Valley Unified  
16 School District.

17 MS. SHARPLESS: Jananne Sharpless, former Air  
18 Board Chair, former Energy Commissioner.

19 MR. MICHAEL: Jack Michael representing  
20 Recreational Boaters of California.

21 MR. COOPER: Peter Cooper for the Employment  
22 Training Panel.

23 MS. MCMONIGLE: Anne McMonigle, California  
24 Labor Federal Workforce and Economic Development Program.

25 MR. GERSHEN: Joe Gershen with the California



1 Biodiesel Alliance.

2 MR. SHEARS: John Shears with the Center for  
3 Energy Efficiency and Renewable Technologies.

4 MR. MCKINNEY: And then turning to Advisory  
5 Committee Members on the phone.

6 MS. BAKER-BRANSTETTER: This is Shannon Baker-  
7 Branstetter, Consumers Union.

8 MR. ECKERLE: Tyson Eckerle, Energy  
9 Independence Now.

10 MS. HOLMES-GEN: Hi, this is Bonnie Holmes-Gen  
11 with the American Lung Association in California, and I'm  
12 trying to also join on WebEx and I probably won't make  
13 that work today.

14 MR. MCKINNEY: Great. Thank you to our  
15 Advisory Committee Members.

16 Turning to today's program, we finished  
17 introductions and opening remarks. I will give a brief  
18 presentation on the program status. My colleague,  
19 Charles Smith, will walk us through recent changes to the  
20 Investment plan. We're then scheduled to have a  
21 presentation from Dr. Ayala from Air Resources Board,  
22 Wade Crowfoot from the Governor's Office of Planning and  
23 Research. We'll also make a brief presentation. And we  
24 do have a guest comment period here for the developers of  
25 the Proterra Electric Bus which is parked out front, so

1 right before lunch we'll hear from them, and then have a  
2 lunch break. And after that, we'll come back to the  
3 Advisory Committee and public discussion.

4 The way we will structure public participation  
5 and committee membership participation this morning,  
6 Committee Members are to always feel free to ask  
7 clarifying questions of the staff presentations. We want  
8 to save substantive discussion for after lunch.

9 We're going to take it topic by topic, so we'll  
10 start with Biofuels because that's first on the list.  
11 We'll afford an opportunity for Committee Members present  
12 here at the table to make comments, then Committee  
13 Members on the phone, and then we will open to brief  
14 public comments of no more than three minutes each.

15 Please complete blue cards, please indicate the  
16 subject line or subject matter that you wish to address;  
17 Charles and I will then -- Charles is the distinguished  
18 red-haired gentleman here at the back of the room -- and  
19 then we will coordinate that part of the discussion.

20 In terms of logistics, in the event of any type  
21 of emergency, please exit the building quickly either  
22 through the side doors here, or the front doors, and  
23 assemble in Roosevelt Park until it's all clear.

24 We have restrooms here over in this corner and  
25 the Rendezvous Café upstairs where you can get water and

1 coffee, etc.

2           So with this Investment Plan, we are now in  
3 year five of a seven and a half year program. With this  
4 Investment Plan, we will have allocated over half a  
5 billion dollars in public money to support the  
6 development of alternative fuels, vehicles, and fueling  
7 infrastructure support to really take us to a low carbon  
8 transportation future here in California.

9           Some of our current emphases at the program  
10 level: Managing our existing agreement workload;  
11 developing agreements from the recent solicitations and  
12 NOPAs, or Notice of Proposed Awards; evaluating proposals  
13 from the recent solicitations; developing new  
14 solicitations; we have another Benefits Report, which  
15 I'll talk about a little bit later, this supporting  
16 reauthorization efforts for this program and other clean  
17 transportation programs, and then what we call a 3103  
18 Rulemaking, which I'll also talk about later.

19           So in sum, this is a big picture summary of how  
20 we are allocating monies from the ARFVTP Program. So  
21 this summarizes monies from 2009 to 2012 and, again, we  
22 think of this as laying the foundation for a low carbon  
23 low-emission transportation future here in California.

24           Biofuels gets nearly \$125 million in aggregate,  
25 that's 35 percent of the total and, again, the focus on

1 this is the foundation for California produced low carbon  
2 biofuels focused primarily on waste-based feedstocks. So  
3 this covers biodiesel, renewable diesel, ethanol,  
4 cellulosic ethanol, and green gasoline, and biogas. This  
5 funding category includes fuel production and fueling  
6 infrastructure such as E85 retail stations, and then what  
7 we call the tankage wholesale storage for biodiesel and  
8 renewable diesel.

9 Our investments in electric drive total nearly  
10 \$124 million, or 34 percent of our total funding  
11 allocation. This covers items such as electric charges,  
12 or EVSE, we have put \$25 million to date into this  
13 category and that will culminate in about 6,200 charge  
14 points here in California. This is in support of the  
15 Governor's ZEV Mandate and the ARB ZEV Regulation.

16 Also included in this category are our  
17 substantial investments in Zero emission Low-Emission  
18 Trucks, so we have about \$35 million in those. As an  
19 example, several weeks ago the Governor helped introduce  
20 the All-Electric Package Delivery Trucks at United Parcel  
21 Service at the West Sacramento Hub, those have been  
22 developed by Electric Vehicles International, and it was,  
23 just speaking personally, it was just great to finally  
24 see tangible things like the Proterra Bus that's out  
25 front, these vans, these kind of package delivery vans

1 that are all-electric, they're very quiet, and we have  
2 one that drives up and down the street, so we always kind  
3 of give a little cheer when it goes by.

4 Turning to natural gas, that gets about \$41  
5 million in total. Some results of that are over 1,500  
6 natural gas trucks that will be on California roadways  
7 for freight movement, goods movement, as well as nearly  
8 50 CNG, RNG, and LNG fueling stations located throughout  
9 the state.

10 I think, as many of you are aware, this boom in  
11 natural gas supply, the very very low natural gas prices,  
12 is a major point of discussion around the state, and  
13 really around the country as North American supplies  
14 continue to come on line.

15 For Hydrogen, thus far we've invested \$22  
16 million. We have 10 stations in development. This does  
17 not include the current \$29 million solicitation for  
18 which we are reviewing proposals right now.

19 For Work Force Development, we've invested over  
20 \$24 million through our key partners, the Employment  
21 Development Department and Employment Training Panels,  
22 and we continue to be very pleased with the results from  
23 those efforts.

24 And then lastly, Program and Market Development  
25 and, again, this totals about \$360 million for 225

1 Agreements, which is what I just said there. This  
2 doesn't include yet the results from our Vehicle Buy Down  
3 Program and then agreements from future solicitations.

4           So Charles did a nice job of compiling the data  
5 this way the other was by fuel category, this is by  
6 supply chain, so we have Fuel Production, Infrastructure,  
7 Vehicles, and then Other. So eyeballing it, I have about  
8 \$90 million on fuel production; you can see how that's  
9 allocated with biodiesel, biomethane, and ethanol. For  
10 Fueling Infrastructure, about \$78 million and, again, you  
11 can see biodiesel, electric drive, ethanol, hydrogen, and  
12 natural gas.

13           On the Vehicles side, so if you combine what we  
14 call our Medium-Duty and Heavy-Duty Advanced Technology  
15 Demonstration Funds plus Manufacturing Funds, most of  
16 that culminates in money for electric drive support and  
17 that can be components, vehicle assembly, and then  
18 deployment, and that comes in at about \$130 million. You  
19 can see most of that is electric drive, followed by a  
20 little bit for ethanol, and then natural gas and a little  
21 bit for propane.

22           Some recent awards that we have done, charging  
23 infrastructure nearly \$3 million, this should actually  
24 read about a thousand level 2 chargers that we just  
25 awarded. Air Environment and Charge Point are some of

1 the bigger firms getting those awards.

2 For natural gas, another five natural gas  
3 stations, the Lompoc Unified School District is a recent  
4 recipient, as well as the Santa Ynez Band of Chumash  
5 Indians.

6 And for E85, we're going to fund another 19  
7 stations through Pearson Fuels.

8 Continuing to some recent awards, for  
9 Biomethane Production, we've got two new pilot plants,  
10 Blue Line Transfer is a waste management company in South  
11 San Francisco, they're going to get into the energy  
12 business by converting some of their waste streams to  
13 biogas. Environ Strategy Consultants down in Chino is  
14 going to do something similar with solid food waste  
15 converted into biomethane.

16 Turning to Biodiesel, Eslinger Biodiesel, they  
17 recently won the \$6 million award for Phase 1 of a major  
18 45 million gallon per year biodiesel plant in the  
19 Southern San Joaquin Valley, and the feedstocks will be  
20 waste fats and oils, and we're very pleased to see this  
21 type of project win our funding.

22 If you were here for this morning's business  
23 meeting, you saw the Mendota Bioenergy Consortium, so  
24 this is sugar beets, U.C. Davis and some really good  
25 technical people coming together to develop cellulosic

1 ethanol biogas from energy beets, using enzymatic  
2 cellulosic technologies.

3           Also this morning, we formalized the \$4.5  
4 million transfer and augment to the Clean Vehicle Rebate  
5 Program to support the very high and strong demand for  
6 vouchers for light-duty electric vehicles. We're  
7 incredibly pleased with the pace of the vouchers that ARB  
8 is able to process and move through.

9           Another \$3.5 million for what will be called a  
10 CALSTART suite of projects, so with this final payment  
11 we're going to be able to fully fund the Transpower  
12 Electric Truck Project, so that's an all-electric Class 8  
13 Tractor that will be used for Port drayage operations, as  
14 well as the Volvo Plug-In Hybrid and the Artisan Drayage  
15 Trucks, so these last two products are also Class 8  
16 Electric and Hybrid Electric Vehicles targeting Port  
17 operations in Southern California.

18           Turning to current solicitations, we have one  
19 that is open to our Buy Down Program, propane dollars  
20 continuing to move very very slowly, which is why we're  
21 recommending zeroing out propane funding with this  
22 Investment Plan -- the natural gas truck vouchers go very  
23 quickly, and those reservations are now closed; two  
24 recent solicitations on natural gas fueling  
25 infrastructure, another \$2.5 million; and then our big



1 \$29 million hydrogen fueling infrastructure solicitation,  
2 and we're in what we call the blackout period on that, so  
3 staff cannot communicate with stakeholders on these items  
4 while they're being reviewed and scored.

5 Our colleagues in PIER, or Public Interest  
6 Energy Research group have also been active in the  
7 transportation sector, a \$2.5 million solicitation,  
8 Renewable Natural Gas with Co-Products; some good work on  
9 developing natural gas truck motors that can take  
10 advantage of the cheap natural gas supplies, so that's  
11 Class 3 through 7, and \$3 million will be available for  
12 that. And then also a solicitation to cover high  
13 purchase cost and disposal of PEV Battery Packs.

14 Future solicitations coming up, so we have \$9.3  
15 million for Commercial-Scale Biofuels Production, we're  
16 finalizing that solicitation and it should be up next  
17 month. Charging Infrastructure, another \$6.6 million,  
18 that's scheduled for April. Electric Truck Retrofit  
19 Demonstration, about \$2.5 million. The objective here is  
20 to demonstrate the practicality and feasibility of  
21 package delivery van retrofits from diesel to all-  
22 electric drive, to see how that performs. And then  
23 Regional Planning and Centers for Alternative Fuels, both  
24 at \$2.7 million, and those will be coming up in the  
25 spring.

1           I also want to reference two interagency  
2 transfers we're developing with the South Coast Air  
3 Quality Management District. One is to help support  
4 their catenary trolley project, so this would be out of  
5 the Ports on the I-710 corridor. The idea here is to  
6 have a all-electric truck that can tie into electric  
7 overhead lines with the catenary system, work on electric  
8 drive, and then drop out of that and work on the  
9 batteries and then hybrid power as it exits the catenary  
10 system, or the overhead wires.

11           And secondly, our program in conjunction with  
12 PIER will contribute up to \$3 million to the South Coast  
13 for a \$10 million solicitation to develop low NO<sub>x</sub> natural  
14 gas engines that can help meet the upcoming Environmental  
15 Quality Standards, or Air Quality Standards, for NO<sub>x</sub>. So  
16 the target there is to take it from -- I think it's  
17 currently .2 grams from a brake horsepower down to .05,  
18 that would be a 90 percent reduction and, again, the goal  
19 there is to help anticipate the 90 percent reduction  
20 levels in NO<sub>x</sub> as required by the Clean Air Act, to help us  
21 reach attainment in the severe nonattainment basins in  
22 South Coast and in the Central Valley.

23           For the Benefits Report, AB 109 requires us to  
24 report on the progress of our program each two years as  
25 part of our Integrated Energy Policy Report cycle, so we

1 are to provide a descriptive summary of our program  
2 awards, the expected benefits from the investments, the  
3 contributions of these projects to a portfolio of clean  
4 fuels and vehicles, and then obstacles and  
5 recommendations.

6           And staff and the Commission have decided to  
7 add Job Creation Benefits because that's always a very  
8 positive benefit of the type of funding we're making  
9 available here in California.

10           Our approach will be substantially similar to  
11 what we did in 2011, we have technical support from NREL  
12 and U.C. Davis with our recent Technical Support  
13 Agreements, as well as our ongoing collaboration with  
14 colleagues at the Air Resources Board on this and other  
15 matters.

16           In terms of metrics, we've had a couple of  
17 lively discussions about what we called a metric-based  
18 approach allocation in the Investment Plan, and  
19 succinctly, there are some stakeholders arguing that we  
20 should pay more attention to dollars per ton reduced of  
21 carbon, or avoided ton of carbon, as we go through our  
22 funding decisions. And as articulated by Joe Gershen and  
23 some others last time, they're concerned that biodiesel  
24 may be underfunded and that biodiesel and other fuels  
25 like that can offer more cost-effective, near-term GHG

1 reduction benefits.

2           We fully appreciate the potential for biodiesel  
3 and renewable diesel to make a big dent in the GHG  
4 footprint, especially in the trucking sector. The NO<sub>x</sub>  
5 emissions hit or penalty from biodiesel continues to be a  
6 concern in nonattainment air basins. And as we've said  
7 before, we'll fully address the metrics issue in the next  
8 Benefits Report.

9           And I think just one observation I would like  
10 to make on this topic is that, if we really go to a  
11 strict dollars per ton avoided or reduced format for  
12 this, I think we may over-value the currently mature  
13 technologies that are available to us, and we may  
14 undervalue the long term investments in the ZEV  
15 technologies for electric drive and hydrogen fuel cell  
16 electric drive that are just earlier in the  
17 commercialization phase and have a longer glide path to  
18 where they're cost competitive with other technologies.

19           Some other items -- yeah, a point of  
20 clarification there?

21           MR. CARMICHAEL: Well, I have a comment on that  
22 slide and that comment -- do you want me to save that  
23 until later?

24           MR. MCKINNEY: Can we save comments for --  
25 yeah, again, happy to take clarifying questions,

1 substantive discussion and comments I'd like to reserve  
2 for the afternoon.

3 MR. CARMICHAEL: Let me just register one  
4 thing. I think you left something out of that slide, and  
5 that's why I wanted to comment now, I won't get into the  
6 details, but one of the other reasons that people raised  
7 that issue at the last meeting is a belief that more  
8 metrics in the evaluation process will help us defend  
9 this program against some of the criticisms of it going  
10 forward. I take your points, the staff viewpoints to  
11 heart, but another key piece of that discussion, I think,  
12 was there's value in having more metrics to defend this  
13 program and, frankly, to renew this program.

14 MR. MCKINNEY: Great, thank you, Tim. Some  
15 other items of interest for Advisory Committee Members  
16 and the general public, the Statewide PEV Infrastructure  
17 Plan, Leslie Baroody unfortunately has the flu, but she  
18 has been our team leader on that, and we're getting great  
19 support from, again, Wade Crowfoot and his team at OPR.

20 The Section 3103 Rulemaking, so in response to  
21 some of our stakeholders, we have formally kicked off a  
22 rulemaking proceeding where we will look at the funding  
23 prohibitions and the LCFS credit discount provisions  
24 currently in our regulation and determine if and how  
25 those should be modified or repealed.

1           And lastly, for reauthorization, I know many of  
2 our Advisory Committee Members are actively involved with  
3 this. The Energy Commission is providing technical  
4 information, programmatic information to this effort.

5           So that concludes my presentation. Are there  
6 any additional clarifying questions on what I've covered  
7 thus far? Seeing none, I'm going to turn it over to,  
8 again, my colleague Charles Smith, who will talk about  
9 the current Investment Plan.

10           MR. CARMICHAEL: Sorry, Jim, I did have one  
11 quick question. Back to the future funding  
12 opportunities, is that all the money that has not yet  
13 been put out for solicitation in this program?

14           MR. SMITH: Hi, Tim. This is Charles Smith. I  
15 think there might be some remaining funding that we  
16 haven't listed out here just because it's not sort of a  
17 near term priority, perhaps, as these other anticipated  
18 solicitations are. I can at least think of, I think, the  
19 Emerging Opportunities category isn't listed here, and  
20 I'm trying to think of any others off the top of my head,  
21 but I think there probably are a few more. But this does  
22 represent the majority of our efforts in the near term to  
23 get funding out the door.

24           MR. CARMICHAEL: Thank you.

25           MR. GERSHEN: Jim, I'd just like to say one

1 point of clarification on the NO<sub>x</sub> that you mentioned, so  
2 CARB has already ruled that five percent, there's no NO<sub>x</sub>  
3 hit. Thanks.

4 MR. MCKINNEY: Okay, thank you for that.

5 DR. AYALA: I do have a question if I may. I  
6 think it's a clarifying question. On slide 10, there is  
7 a second bullet of potential changes and I think you  
8 might have gone through that very quickly.

9 MR. MCKINNEY: Oh, I did.

10 DR. AYALA: Yeah. Would you comment on  
11 particularly the first sub-bullet? I'm interested in the  
12 comment from EPA.

13 MR. MCKINNEY: Okay. Thank you, Alberto.  
14 Yeah, I did gloss over the second half of this slide.  
15 U.S. EPA has looked at our initial NO<sub>x</sub> reduction numbers,  
16 those estimates from the 2011 Benefits Report, and they  
17 said that we should take advantage of their work to  
18 translate these into the public health benefits from  
19 reduced NO<sub>x</sub> emissions and PM, Particulate Matter, in  
20 California. So that's something we fully agree with and  
21 we look forward to working with them and ARB staff on  
22 that issue. Does that answer your question, Alberto?  
23 Okay, Charles?

24 MR. SMITH: Thank you, Jim. Good morning. I'm  
25 Charles Smith and I am the Project Manager for the 2013-

1 2014 Investment Plan Update.

2           For those new to our process, the Investment  
3 Plan is updated on an annual basis with a typical funding  
4 amount of roughly \$100 million. This Investment Plan,  
5 once adopted, will form the basis for allocating our  
6 program funds to future solicitations and agreements in  
7 the coming fiscal year.

8           To briefly summarize our process so far, we had  
9 our first preliminary Advisory Committee Meeting as a  
10 precursor to this year's Investment Plan process on  
11 September 19th of last year. Industry representatives  
12 and our sister agencies provided their perspectives of  
13 where and how our program funding could have the greatest  
14 impact in transforming California's transportation  
15 sector. These presentations are available online, in  
16 addition to the meeting transcript and WebEx recording.

17           The materials presented at this meeting helped  
18 to inform the development of the initial staff Draft of  
19 the 2013-2014 Investment Plan, which was released on  
20 November 20th. This initial draft included funding  
21 recommendations totaling \$100 million for a portfolio of  
22 fuels and technologies.

23           The second Advisory Committee Meeting was held  
24 on December 4th, focused primarily on the staff draft of  
25 the Investment Plan. Again, the materials from this



1 meeting are also available online. And the most current  
2 version of the '13-'14 Investment Plan, the Revised Staff  
3 Draft, was released on January 10th, concurring with the  
4 release of the Governor's Proposed Budget, as required by  
5 our statutes.

6 I'll briefly walk you through the remaining  
7 schedule for this Investment Plan cycle. Today is our  
8 third Advisory Committee Meeting. We'd like to receive  
9 any written comments on this meeting and the Revised  
10 Staff Draft by no later than March 14th. This makes sure  
11 that we have enough time to consider all public comments  
12 as we develop the Final Draft of the '13-'14 Investment  
13 Plan, which is the Lead Commissioner Report.

14 Briefly, as long as the comments are smaller  
15 than 5 megabytes, you can submit them electronically by  
16 sending them to [docket@energy.ca.gov](mailto:docket@energy.ca.gov) and if you do,  
17 please include our preceding number in your subject line  
18 which is 12-ALT-2. Instructions on how to submit larger  
19 or hard copy comments are included in the Public Notice  
20 for this meeting.

21 The Lead Commissioner Report will build on the  
22 current draft plus additional feedback and other updates.  
23 We expect to release this document in mid-April. Upon  
24 its release, we will schedule it for adoption at the  
25 Commission's May or June Business Meeting. This will

1 keep us on track with our statute, which requires us to  
2 submit an approved Investment Plan concurrent with the  
3 Governor's May Revised Budget.

4 As to the Revised Staff Draft, and benefits  
5 from the more than 60 written comments and public  
6 statements that we have received since the release of the  
7 previous draft, in developing the Revised Staff Draft we  
8 focused on the more straightforward comments that we  
9 received in order to meet our January deadline to the  
10 Legislature. However, as we develop the Lead  
11 Commissioner Report, we will be continuing to digest the  
12 comments received so far, as well as any new comments.

13 The Revised Staff Draft also includes updated  
14 program information, including the total funding awards  
15 for each fuel type. I'll mention that a little later.

16 As mentioned, the Revised Staff Draft was  
17 submitted to the Legislature last month. Just to keep  
18 everyone aware, the Legislature has not yet specifically  
19 requested any follow-up information since then about the  
20 Investment Plan Draft.

21 I'll now go through the updates that were  
22 incorporated in the Revised Staff Draft. Most generally,  
23 we updated the information on our program's recent  
24 solicitations awards and activities. The Revised Staff  
25 Draft identifies roughly \$340 million in awards so far,

1 however, as Jim noted, we're now approaching \$360 million  
2 in executed and upcoming awards, so these numbers will  
3 continue to be updated.

4 We have also incorporated more discussion of  
5 the relevant policies and activities that impact our  
6 program, such as the Governor's ZEV Action Plan, and how  
7 our funding allocations are reflective of these.

8 Moving into specific fuel categories, the first  
9 main revision was in the Biofuel Production Supply  
10 category. In this category, our \$23 million allocation  
11 remained neutral as to fuel type, including gasoline  
12 substitutes such as ethanol, diesel substitutes such as  
13 biodiesel and renewable diesel, and biomethane. In this  
14 version, we clarified the eligibility of landfill gas as  
15 an acceptable source of biomethane for possible funding.  
16 However, preference in our scoring documents may still be  
17 given for projects that use pre-landfill feedstocks.

18 We expect that this approach will help strike  
19 the right balance between the significant opportunities  
20 that exist to produce low carbon fuels from existing  
21 landfills, while still prioritizing the pre-landfill  
22 conversion technologies that will support the State's  
23 aggressive waste reduction, waste recycling, and  
24 composting goals.

25 Within the Hydrogen Fueling Infrastructure

1 section, we added information to provide more context to  
2 this year's increased funding allocation. This includes  
3 additional information on the role of Fuel Cell Vehicles  
4 and achieving the long-term emission reductions  
5 associated with the 2050 Vision for Clean Air Document,  
6 as well as the goals of the Governor's ZEV Action Plan.

7 Our program's accelerated investments in this  
8 area are needed to meet a target of 68 strategically  
9 located stations. Our additions to this section include  
10 more information on the carbon intensity of various  
11 hydrogen pathways, as well as the approximate cost of  
12 infrastructure per vehicle.

13 The next significant revisions to the document  
14 were in the Workforce Training Section. Last November,  
15 Californians passed Proposition 39, which includes  
16 potential funding for workforce training programs that  
17 focus on clean energy. This funding may displace the  
18 need for some of our program funding, and it's also even  
19 more likely that our normal partner agencies will have to  
20 refocus their staff resources away from some of our  
21 program's funded activities in this regard.

22 Accordingly, we have reduced our program  
23 allocation for this category by \$500,000. This funding  
24 was moved into the Regional Readiness and Planning  
25 section. This is based on ongoing discussions with

1 regional and industry stakeholders, and we see many  
2 opportunities to streamline the deployment of alternative  
3 fuel vehicles and their infrastructure through this  
4 category.

5           From here, our next step, as said before is to  
6 begin preparation of the Lead Commissioner Report. We'll  
7 be seeking your final comments by March 14th. We will be  
8 continuing to review our existing program investments, as  
9 well as related programs and policies, and we expect to  
10 produce the final document in mid-April.

11           As the Investment Plan is finalized, we will  
12 begin considerations of how to implement the funding  
13 allocations and we will continue to seek your input on  
14 this question, as well, even once the funding allocations  
15 themselves have been settled.

16           And finally, this table summarizes our proposed  
17 funding allocations in the current Draft Investment Plan  
18 and ends my presentation. Later in today's workshop,  
19 we'll go through these allocations and seek your feedback  
20 on both the amount and the scope of the allocation.  
21 Until then, we'd like to save the more substantive  
22 discussions for the afternoon. But are there any  
23 clarifying questions that perhaps I can answer? Anne.

24           MS. MCMONIGLE: Just as a point of  
25 clarification on this funding diagram, is the \$2 million

1 in workforce reflective of the \$500K you're suggesting?

2 MR. SMITH: Yes. It was originally listed --

3 MS. MCMONIGLE: \$2.5?

4 MR. SMITH: -- yes, it was originally listed as  
5 \$2.5 million in the original Staff Draft and is now \$2  
6 million in the Revised Staff Draft.

7 MS. MCMONIGLE: Great, thanks.

8 MR. SMITH: Any other questions? Okay, thank  
9 you.

10 MR. MCKINNEY: Great. Thank you, Charles.

11 With that, we're going to turn to some of our guest  
12 presentations and, if we can have Dr. Ayala's  
13 presentation queued up, I'd like to introduce the Deputy  
14 Executive Officer of Mobile Sources from the Air  
15 Resources Board, Dr. Alberto Ayala.

16 DR. AYALA: Thank you. Good morning again.  
17 Thank you very much for this opportunity. It's a real  
18 pleasure for me to be here and continue to participate in  
19 this Committee.

20 The program that we are discussing today is  
21 about advanced technology vehicles and fuels and, because  
22 they are so important to the mission of the Air Resources  
23 Board, what we want to do today is very briefly highlight  
24 some of the key points that are critical in our efforts  
25 to meet our Air Quality Standards, as well as the dual

1 responsibility we have to concurrently make progress  
2 towards meeting our Greenhouse Gas Emission Reduction  
3 Targets, which are equally aggressive as our Air Quality  
4 Standards.

5           So what I want to do today is very quickly and  
6 briefly walk over some of the key information that we've  
7 collected to perhaps give you a better context in terms  
8 of what is guiding some of our decisions and comments in  
9 the path forward.

10           So the first thing I'll say is, as we look out  
11 to 2050, which is what we call the stretch goal for  
12 meeting very aggressive Greenhouse Gas Emission Reduction  
13 Targets, one thing is clear, that the solution for us to  
14 make that goal, as well as concurrently meet our air  
15 quality improvement standards, is nearly all vehicles,  
16 passenger cars, light-duty vehicles, are going to have to  
17 be zero emissions by 2050. That is obviously a  
18 monumental challenge, but we benefit from programs like  
19 what we are discussing today because the technology is  
20 coming up to make us -- to help us in getting to that  
21 target.

22           In this context, we recognize both Plug-Ins, as  
23 well as Fuel Cell Electric Vehicles are going to be  
24 critical solutions in that path to get to 2050.

25           We are very interested in Hydrogen because we

1 think that it has a clear role as being part of the  
2 solution in getting us to 2050, and has got the  
3 advantage, obviously, that it is produced domestically.  
4 And I have additional information to expand on that  
5 point.

6           We also, as we look at the magnitude of the  
7 commitment on investment specifically to hydrogen, it  
8 becomes clear to us based on the information we've got  
9 that it hasn't necessarily been consistent with the  
10 investment that the State has made with other alternative  
11 fuels, and I think that is going to color some of the  
12 interests that you're going to hear from us in terms of  
13 pursuing the solution that we think hydrogen is for our  
14 2050 goals.

15           One critical fact is that we understand and we  
16 know, and most of us have read, that the carmakers are  
17 ready to put the Fuel Cell Vehicles on the market, and we  
18 feel that we as an agency, and certainly as a state, have  
19 a responsibility to do our part to support the deployment  
20 of those technologies. So we need the stations, we need  
21 the fueling infrastructure to make sure that, when people  
22 are ready to buy these cars, that they have a place to go  
23 fill up.

24           We know from our technical analysis that is  
25 supporting some of the recommendations for our greenhouse



1 gas and air quality goals that when it comes to cost, we  
2 see that this particular technology is going to be very  
3 competitive relative to conventional technology today.  
4 So, again, that is going to be one of the reasons why we  
5 focus so heavily on some of the specific technologies  
6 that you're going to hear me talk about. And obviously  
7 we also understand that hydrogen is widely used today and  
8 is safe, so when you put all this together, at least for  
9 us, the picture becomes a little bit more clear.

10           This is a very relevant representation of what  
11 it means to get to 80 percent reduction in greenhouse gas  
12 emissions statewide in 2050, and we have used this  
13 graphic extensively because I think it really captures  
14 the magnitude of the challenge before us.

15           This is one scenario, admittedly there is going  
16 to be refinements to the information that goes into  
17 creating these scenarios. But, again, the point I want  
18 to make here is, if you look at 2050 and when you  
19 consider the fraction of the fleet in 2050, that it's  
20 going to have to be advanced technology. You see that 80  
21 percent of that fleet is going to have to be either  
22 Battery Electric or Fuel Cell Vehicles, so essentially it  
23 means that conventional internal combustion engine  
24 technology that uses fossil fuels is just simply not  
25 going to help us get where we need to be. It's just that

1 simple. So the challenge for us is what we can do today  
2 to make sure that we are on the glide path, so that we  
3 can get to where we need to be in 2050.

4           Much of our work today and in the coming weeks  
5 and months as we consider some of the revisions and  
6 updates to the policies for greenhouse gases and air  
7 quality are going to be centered and focused around that  
8 concept.

9           We know that Zero emission Vehicles are going  
10 to offer significant greenhouse gas emission reductions  
11 and that's why we think they are the solution for us, and  
12 here, when you consider the well-to-wheels carbon  
13 footprint of advanced technology relative to conventional  
14 gasoline technology, both starting in today's 2010  
15 technology, as well as in the future 2025, you can see  
16 clearly that Plug-In Hybrids, Fuel Cell Electric  
17 Vehicles, Battery Electric Vehicles, all have a role to  
18 play here.

19           This is information that we gathered from the  
20 car makers and I think it is really critically important  
21 because it answers clearly the question why fuel cell  
22 vehicles are so critical in what we're trying to do.

23           What I would like you to do is to focus on the  
24 threshold point where you see the two curves for Battery  
25 Electric Vehicles and Fuel Cell Vehicles sort of

1 intersecting. What you have here is the cost of  
2 production to an automaker of the different technologies  
3 and on the X Axis you essentially have the range for  
4 those vehicles. And what you see here is, if we want to  
5 maintain consumer choice, and we want to maintain the  
6 current capacity of vehicles, from very small vehicles  
7 all the way to SUV-type of vehicles, in an advanced  
8 technology platform, what we're going to need is  
9 technology such as Fuel Cell Electric Vehicles, simply  
10 because batteries create an impact en masse of that  
11 vehicle that is just not sustainable for the larger  
12 platforms. And that is the reason why the car makers are  
13 focusing their energy on investments in Fuel Cell  
14 Vehicles, because when it comes to larger vehicles,  
15 vehicle range that is going to be over 100 miles or so,  
16 the solution is really going to have to be hydrogen.

17           Obviously, we see that batteries are going to  
18 play a role because, in the smaller applications, in the  
19 urban setting where perhaps you don't need to go more  
20 than 100 miles, the battery, as you can see here, is  
21 advantageous to the fuel cells. So this is really  
22 critical because, again, this is the technical  
23 justification for why the two technologies, I think, need  
24 to play a key role, hand in hand.

25           In terms of helping us meet our air quality

1 goals, advanced technologies are obviously going to be  
2 critical, as well.

3 In fact, some of the challenges we have for air  
4 quality are going to come before greenhouse gases. And  
5 here you see that, in terms of smog forming emissions, NO<sub>x</sub>  
6 and ROG, to the right of the graphs you see the Fuel Cell  
7 Vehicles and Battery Vehicles are really going to be the  
8 solution for us. So we get both, we get the co-benefit  
9 of greenhouse gas emission reductions, as well as air  
10 quality.

11 MS. TUTT: Could I ask one question?

12 DR. AYALA: Sure.

13 MS. TUTT: Did you happen to look at a Plug-In  
14 Hybrid with a higher range than 20?

15 DR. AYALA: Let me look to my team and see if  
16 we have that answer. Do we have that comparison? We  
17 don't. But I suppose --

18 MS. TUTT: Thank you, sorry, I would just ask  
19 if there had been an analysis of the Plug-In Hybrid with  
20 a range of higher than 20 because the Volt is the number  
21 1 selling Electric Vehicle out there and it's got a range  
22 of 40, which is double. So if you don't mind adding  
23 that, or doing that, I'd like to see that number.

24 DR. AYALA: There's a -- as we look at this,  
25 obviously there's going to be different permutations that

1 we can export to refine the information, but I think the  
2 message is going to be consistent.

3           So what I was going to get to here is, one of  
4 the key questions that we contemplated, as well, is  
5 comparing the investment that we are trying to promote in  
6 hydrogen relative to some of the other alternatives. And  
7 in this particular graph, you see comparison to three --  
8 electricity, biofuels, and natural gas by methane. And  
9 you can see that certainly hydrogen doesn't stand out as  
10 being preferential in that context. And again, we see  
11 that it's such a key part of the solution for us, that's  
12 why we want to make sure that we clearly support the  
13 investment that we are considering on infrastructure.

14           Here is something that we basically borrowed  
15 from a newspaper. And this is really the key for  
16 prompting us to do everything that we can to promote and  
17 to roll out the infrastructure that is going to be  
18 necessary to support deployment of fuel cell vehicles.  
19 These are public announcements from various automakers in  
20 terms of their plans to start releasing production-ready  
21 significant volumes of fuel cell vehicles into the  
22 American market.

23           Obviously, if we were to look at this  
24 information for other parts of the world, I think it  
25 certainly is similar, especially in Europe and Japan.

1 So, again, we feel that the time has come to finally  
2 answer and settle the chicken and egg question, and what  
3 is needed is the infrastructure.

4           And here you see the correlation between the  
5 number of vehicles, the volume of fuel cell technology  
6 deployment as a function of the number of stations. And,  
7 again, based on analysis that you all are familiar with  
8 and that we have undertaken, we do think that getting to  
9 100 stations is going to be absolutely critical for us to  
10 be able to ensure that the technology deployment is on  
11 track with what we need to meet our goals.

12           And the final slide, to end on time, is one of  
13 the final questions, one of the key questions that we  
14 continue to get, and try to understand better, is a cost  
15 comparison. And I would like you to focus on the right  
16 of the slide when we compare the cost of driving a fuel  
17 cell -- advanced technology fuel cell electric vehicle,  
18 relative to a fairly good average gasoline conventional  
19 technology car that gets 25 miles to the gallon.

20           You see that the cost of driving that Fuel Cell  
21 Electric Vehicle is very competitive. And I think the  
22 point there is, because these technologies are going to  
23 be very efficient, six miles per kilogram of hydrogen is  
24 going to be certainly doable and conventional for those  
25 types of technology.

1           So I'll end here. Again, I appreciate the  
2 opportunity to make these remarks. What we wanted to do  
3 is nothing but to give you the context from the Air  
4 Resources Board in terms of what are the key drivers as  
5 we try to fulfill our mandate to meet greenhouse gas and  
6 air quality improvement targets, what is the context in  
7 terms of advanced technologies and fuels. And I hope  
8 I've given you useful information. We'd be more than  
9 happy to continue this discussion at a different time.  
10 We'd be more than pleased to provide additional  
11 information to the extent that anybody needs it. So  
12 thank you for your attention.

13           MS. SHARPLESS: Excuse me.

14           MR. MCKINNEY: Thank you, Dr. Ayala. And --

15           MS. SHARPLESS: Just one clarifying question on  
16 your chart that showed the number of fuel cells that you  
17 would need by 2050, you said that this was basically the  
18 car companies are encouraging the State to move in this  
19 direction and the Air Board to move in this direction  
20 because of the need for that type of technology for the  
21 heavier vehicles. So my question, clarifying question,  
22 is what is the definition of a heavier vehicle? Are we  
23 talking about just passenger vehicles that are heavier?  
24 Or are we talking about heavy-duty application, as well?

25           DR. AYALA: No, this is strictly -- good

1 question, let me clarify. What I mean by heavier  
2 vehicles, I mean SUV type of vehicles, larger passenger  
3 car vehicles, as opposed to the very compact and smallest  
4 of the vehicles, so this is strictly focused on, again,  
5 as you see here in the graphic, the clarity here is  
6 probably similar to something like a four-door single-  
7 family sedan. So these are heavier vehicles and they're  
8 very compact, but this is not about the very heavy on  
9 road heavy-duty trucks, if you will. We have done some  
10 analysis in this fashion that presents a picture for the  
11 future when you consider not the passenger cars and the  
12 light-duty vehicles, but the heavier vehicles, it looks  
13 different, and the technology solutions are going to be  
14 different, as well, but because California's greenhouse  
15 gases are heavily dominated by the smaller light-duty  
16 passenger car type of vehicles; and because we have so  
17 many of them, that is what is driving this scenario which  
18 points to batteries and fuel cells as being the solution.

19 CHAIRMAN WEISENMILLER: Are there any other  
20 clarifying questions from the Advisory Committee, either  
21 in the room or on the phone?

22 I guess the one thing, just to circle back on,  
23 we've talked about the relationship between a number of  
24 charging stations and the fleet, and the proverbial  
25 question of 68 versus 100. Can you explain the



1 differences there?

2 DR. AYALA: Sixty-eight is what we think we  
3 need to essentially support the rollout of stated  
4 commitments from the car makers to essentially get us  
5 going. What we think is really needed is 100, at which  
6 point we will see the business proposition for fuel cell  
7 infrastructure to be sufficiently -- to be self-  
8 sufficient, basically. So 68 will get us to support the  
9 introduction and the ramp-up in the vehicles and we think  
10 if we can get to 100, it'll be self-sustaining. So that  
11 is the relevance of the two.

12 CHAIRMAN WEISENMILLER: Okay. I guess the  
13 other question, one of the things we've seen on the EV  
14 rollout is whether or not different dealerships have  
15 charging stations, so obviously they need those for their  
16 vehicles, but whether they're publicly available. And so  
17 the question is, do we have any sense of how many of the  
18 fuel cell dealerships will also have charging stations  
19 that might be publicly available -- or refueling  
20 stations?

21 DR. AYALA: The way we're approaching the  
22 infrastructure for Fuel Cells Vehicles is one where it's  
23 not so much the dealers having the stations, but  
24 considering where we think the vehicles are going to be  
25 procured, the earlier adopting markets such as Southern

1 California or the Bay Area. If you consider where that  
2 density of vehicles is going to be deployed, then you can  
3 conduct an analysis that will tell you where the stations  
4 should actually be located. And I think what you'll find  
5 is it's going to be a similar model rolling out the  
6 stations as what we currently have with the gasoline  
7 stations, by looking at parameters such as ensuring that  
8 a user, an owner of a Fuel Cell Vehicle, doesn't have to  
9 drive more than say five to six minutes to get to that  
10 fueling station. So I think the parameters that are  
11 being considered are slightly different. But  
12 infrastructure obviously is again the key to support the  
13 vehicles that are coming.

14 MR. GERSHEN: Excuse me. I'm hearing a lot of  
15 theory and thinking. I'm just curious if it might make  
16 some sense to do some of this and see some metrics on it  
17 -- before we make the full investment.

18 DR. AYALA: Absolutely. Again, I'm not -- we  
19 certainly are committed to working with the Energy  
20 Commission and I appreciate their work to provide  
21 whatever information we think is necessary for the  
22 metrics. I mean, from our perspective, we think it's  
23 more than theory and numbers, I mean, we truly -- once we  
24 agree that we have very aggressive targets for greenhouse  
25 gases and air quality improvements, backing out of there

1 and doing a technology assessment is fairly robust, I  
2 believe. So, thank you.

3 MR. MCKINNEY: Great. Again, thank you, Dr.  
4 Ayala. At this point, so we understand the log-in  
5 challenges for some of our remote stakeholders have been  
6 fixed, so thank you, Andre and the Business Services team  
7 for that.

8 At this point, we'd like to bring up the  
9 representatives from the Proterra Bus Project. So again,  
10 we have representatives from the San Joaquin Regional  
11 Transit District and Proterra Company, itself, and their  
12 beautiful bus is parked outside.

13 MS. DEMARTINO: Thank you very much. Good  
14 morning, and it is still morning, my name is Donna  
15 DeMartino. I'm the General Manager and CEO of the San  
16 Joaquin Regional Transit District, or RTD, and we serve  
17 Stockton and the entire San Joaquin County.

18 RTD has been an early adopter and a local  
19 leader in the adoption of technologies that improve the  
20 environment and provide better services for our customers  
21 and our community. We were a pioneer of the use of  
22 hybrid buses and, by June of this year, our entire fleet  
23 of old diesel buses will be replaced with clean and quiet  
24 hydro technology busses.

25 Now we are excited to introduce and to

1 demonstrate the next step in the process, the newest  
2 technology Zero emission Buses, starting with our May  
3 rollout of two Proterra EcoRide Buses. We were able to  
4 do this because last year the Energy Commission invested  
5 in Zero emission fast-charging, U.S. built, public  
6 transit buses, and we are here today to thank the Energy  
7 Commission and everybody involved with the A.B. 118  
8 program. We're excited to show you these buses today and  
9 you will see one of ours parked right outside, and we  
10 encourage you to take a look and also take a ride with us  
11 at lunchtime, please.

12           We believe fast charging ZEV buses will be a  
13 catalyst for communities, cleaning the air, encouraging  
14 ridership, and reshaping transit throughout California  
15 and beyond, and we are very excited to be part of this.

16           These fast charging buses will eliminate  
17 emissions and dramatically reduce greenhouse gas  
18 emissions. And as an operator, the important part is  
19 that they'll take considerable operating expenses, both  
20 in cost of diesel fuel and in long term maintenance. We  
21 are very thankful. So today on behalf of San Joaquin  
22 Valley RTD and the people who live and work in our  
23 community, I want to express the greatest thanks for your  
24 leadership, your hard work, and all your efforts in  
25 bringing this project to fruition, and all the efforts

1 you made to help us realize the environmental and  
2 community benefits provided by this project. Thank you  
3 very much.

4 MR. MCKINNEY: And, Marc, if I could have you  
5 come up to this microphone up here, please?

6 MR. GOTTSCHALK: So thank you. I'm Marc  
7 Gottschalk, Chief Business Development Officer and  
8 General Counsel at Proterra. And to echo Donna's  
9 message, I want to thank you very very much for the grant  
10 that you invested in the community of Stockton and in  
11 Proterra for us to be able to deliver two EcoRide buses  
12 to the City of Stockton. Those buses are going to be  
13 going into full service in May and we encourage you not  
14 only to see the bus here today, but also to come down to  
15 Stockton to see it fully in action.

16 In brief, the way that Proterra has approached  
17 the transit market was to figure out how to replace a  
18 diesel bus on a one-to-one basis with a Zero emission  
19 Bus, with no loss in service or performance.

20 The EcoRide Bus essentially can charge to full  
21 charge in under 10 minutes, and then will go a minimum of  
22 about 30 miles on a single charge with a typical transit  
23 route being about 11 to 15 miles. You have no problem  
24 essentially covering the entire route with a single  
25 charge, and the way that we accomplish full completion of

1 the service is we have an automated on route system  
2 where, in Stockton's case, it will be at the Transit  
3 Center where the bus rolls in, automatically connects to  
4 a rooftop charge, people can get on and off the bus, and  
5 the bus charges, and then continues on to its next route.  
6 And that way the bus can stay on the same service and  
7 complete up to 300 miles in a single day using battery  
8 electric technology, and the best part of it is that the  
9 bus is essentially carrying passengers, not trying to  
10 carry enough batteries to get it through an entire day,  
11 which is an extremely expensive and almost impossible  
12 thing to achieve.

13           So that is the way that we've approached the  
14 problem. The funding that has been provided by the  
15 California Energy Commission has allowed Proterra to  
16 complete its work to bring the bus to full production.  
17 We were able to improve the drive systems and make them  
18 completely robust and to minimize the size of the  
19 charging stations to make it easier for transit agencies  
20 to integrate the infrastructure into their daily use.

21           You know, from our perspective, the best part  
22 of this is where Zero emission technology for the most  
23 part, particularly in the passenger car space has been  
24 reserved to people who either have enough money to afford  
25 a Tesla, or are willing to live with the substantial

1 reduction and range you deal with, with the *Nissan Leaf*,  
2 in this case we're taking a product that will go to the  
3 service of mostly lower income working people, the  
4 handicapped, seniors, and others who typically use public  
5 transit and will bring them a Zero emission, quiet,  
6 neighborhood-friendly solution. And the best part of  
7 this, which I know is something that would be of concern  
8 to the California Energy Commission, is what you have  
9 done with allowing us to build these buses and the other  
10 orders we've been getting from agencies around the  
11 country, is allowing us to scale up to a point where  
12 these buses will be cost-competitive in the near term on  
13 an upfront capital basis, where they are already reaching  
14 cost competitiveness on a cost of ownership basis because  
15 of the fuel cost savings of driving these buses over a  
16 12-year life of a typical transit bus.

17           So, again, on behalf of Proterra, I want to  
18 thank you very much for the investment that you've made  
19 in an American company that's roughly about 88-90 percent  
20 U.S. content in our buses, is growing jobs here, and  
21 obviously improving the environment and reducing  
22 greenhouse gas emissions. So thank you very much.

23           CHAIRMAN WEISENMILLER: Well, we want to thank  
24 both of you for being here today. It's a good milestone  
25 in terms of I think all of us, as we go through the 118

1 program and have the various visionary pieces to actually  
2 see something outside that you can take a ride in, is  
3 certainly a good step. So, again, thank you and I would  
4 again encourage everyone to go out -- Jananne, please.

5 MS. SHARPLESS: Yes. I just had a question  
6 since we also look at the workforce aspect of these  
7 advanced technologies and training. Are these buses --  
8 in order for the districts to maintain these buses, do  
9 they have trained personnel? Or do you train them? Or  
10 how does that work?

11 MR. GOTTSCHALK: So we're very concerned about  
12 the success of each one of our deployments and so, when  
13 we roll out a bus into a new location like Stockton, we  
14 hire a technician that's part of our company that will  
15 reside at the Transit Agency for at least a year, and  
16 that person's responsibility is to train the workers at  
17 the transit agency on how to maintain the buses. A lot  
18 of the systems are very simple, you know, typical bus  
19 systems that they know how to repair. The more tricky  
20 stuff is the high voltage, which is new to them, although  
21 a lot of these electrical systems are somewhat similar to  
22 what they're dealing with, with hybrid buses. But our  
23 view is, every time we go to a new community, it's a  
24 training opportunity for their workforce to bring them up  
25 to speed on new technologies.



1 MS. SHARPLESS: Thank you.

2 CHAIRMAN WEISENMILLER: Any other questions  
3 from the Advisory Committee, either in the room or on the  
4 phone?

5 MS. TUTT: Hi. Eileen Tutt with the California  
6 Electric Transportation Coalition. I just want to thank  
7 you, the Energy Commission, because the last two times  
8 you have had actual projects here presenting for us, and  
9 I find that extremely helpful. I really appreciate you  
10 taking the time to come here because you've already  
11 gotten the monies, so you don't need to! So thank you  
12 very much for doing that. [Laughter]

13 But I also am interested in any, you know, if  
14 you wouldn't mind, just we can talk offline, ways we  
15 could improve that kind of thing, how you received this  
16 money, is there a way to make it more effective and  
17 efficient, that kind of thing would be -- it's not  
18 something we need to talk about now, but I would  
19 appreciate catching up with you on the electric bus.  
20 Thank you.

21 CHAIRMAN WEISENMILLER: I was going to say,  
22 actually at our last regular business meeting, we had a  
23 number of vehicles outside, which again they give people  
24 a sense that this is real, things are coming out of the  
25 investments. Yeah. Sure. Please, go ahead.

1           MR. KNIGHT: I guess I just want to say it was  
2 an opportunity for me a few years ago to be able to kind  
3 of be on the ground level when design was coming up with  
4 that Proterra bus, and working in the driver's  
5 compartment area and things of that sort, so it's kind of  
6 fun to see that thing today out there on the road and  
7 actually have had the opportunity to drive it when I was  
8 in San Jose a couple years ago, to actually see the real  
9 thing on the road, and see the success that Proterra has  
10 done with that bus, and what that thing can do. I mean,  
11 that's a plus. I always wanted to see that, painted  
12 yellow, not white, but still again it's a big success out  
13 there.

14           CHAIRMAN WEISENMILLER: Great.

15           MR. MCKINNEY: Mr. Chairman and Commissioner  
16 Douglas, we have our next speaker available now.

17           CHAIRMAN WEISENMILLER: Great.

18           MR. MCKINNEY: With that, I'd like to introduce  
19 Wade Crowfoot, Deputy Director for the Governor's Office  
20 of Planning and Research. Mr. Crowfoot.

21           MR. CROWFOOT: Well, thanks very much for the  
22 opportunity to be here. And on behalf of the Governor,  
23 thanks for your service on the Advisory Committee.

24           I wanted to spend less than 10 minutes  
25 providing you a bit of perspective from the Governor's

1 Office as you discuss the 2013-2014 Investment Plan. I  
2 apologize in advance for many familiar faces I see in the  
3 room that have heard my sort of general context before,  
4 but when I talk about Zero emission Vehicles on behalf of  
5 our office, I like to provide a little context.

6 In March of 2012, Governor Brown signed an  
7 Executive Order to have State Government do what it could  
8 to help advance the market for Zero emission Vehicles.  
9 When we talk about Zero emission Vehicles, of course  
10 we're talking about both Plug-In Electric Vehicles and  
11 Fuel Cell Electric Vehicles.

12 His Executive Order really was positioned to  
13 identify several milestones over three time periods,  
14 2015, 2020, and 2025, that would be met, each milestone,  
15 with the ultimate goal and target of reaching 1.5 million  
16 Zero emission Vehicles by 2025.

17 Following up on the Executive Order, an  
18 interagency group led by the Governor's Office put  
19 together an Action Plan, which we're calling the 2013 ZEV  
20 Action Plan. Hopefully many of you have seen that. And  
21 the Action Plan details specific strategies and actions  
22 in four categories that we believe State Government needs  
23 to take leadership in, in order to advance Zero emission  
24 Vehicles. And I'll test myself here by listing the four  
25 categories: one is to complete planning and

1 infrastructure, to expand consumer awareness and demand,  
2 to transform fleets, and to grow jobs and investment in  
3 this sector.

4           And so if you review the Action Plan, you'll  
5 see actually dozens of very specific actions that State  
6 agencies are taking tied to specific timeframes. We  
7 wanted to hold ourselves accountable at State Government  
8 to take specific actions to help accelerate this market.

9           On the topic of the first category, Planning  
10 and Infrastructure, which is really a large portion of  
11 your topic here today, I want to make it clear that the  
12 Governor's Office feels that it's important to invest in  
13 infrastructure for both Plug-In Electric Vehicles, as  
14 well as Fuel Cell Electric Vehicles. And as many of you  
15 in the room know far better than I, the infrastructure  
16 development in both of those two different technologies  
17 has very different challenges.

18           We are very excited that Plug-In Electric  
19 Vehicles are commercialized at this point and are in the  
20 market, and we're taking many actions in real time to  
21 help build infrastructure across the state, guide  
22 infrastructure, privately funded infrastructure, and  
23 ensure interoperability, really improve the consumer  
24 experience to help accelerate the market for Plug-In  
25 Vehicles.

1           For Fuel Cell Electric Vehicles, of course, we  
2 believe and agree with many experts that Government has a  
3 large role to play in the initial infrastructure  
4 investment into hydrogen fueling stations, recognizing  
5 that until we build an economy of scale or critical mass  
6 of Fuel Cell Electric Vehicles, that public investment is  
7 really critical.

8           So, one of the actions in the Action Plan is to  
9 enable funding for the first round of stations for these  
10 early markets, specifically 68 stations in early markets  
11 throughout California. And we're really heartened by the  
12 public-private partnership of the auto companies, State  
13 Government, local governments, to help identify where  
14 those 68 fueling stations should go.

15           So I'm here today just to generally encourage  
16 your efforts. The A.B. 118 funding, which I'm training  
17 myself to actually use the acronym, ARVFTP -- say that  
18 five times fast -- but we really view it as critical to  
19 reach into the Governor's Zero emission Vehicle goals.

20           For what it's worth, you know, we really think  
21 in a long timeframe on this subject, and Governor Brown  
22 is committed to a 2050 goal regarding greenhouse gas  
23 emission reduction and climate change action specifically  
24 focused on reducing, by 2050, 80 percent of the  
25 greenhouse gas emissions in California. We have

1 concluded fairly definitively that that means  
2 electrifying transportation at mass scale. So while we  
3 are excited that Plug-In Electric Vehicles are to market,  
4 we really view Fuel Cell Vehicles as a key part of the  
5 solution in terms of electrifying vehicles. And we  
6 wanted to make sure that we in Government aren't choosing  
7 favorites between certain technologies, but we're  
8 enabling all of these technologies to come to market and  
9 to grow.

10 So with that said, I will turn it back over to  
11 you, Chair.

12 CHAIRMAN WEISENMILLER: Yeah, and I think one  
13 thing, Wade, that I really wanted to get on the record  
14 from you, too, is certainly when I've talked to the car  
15 manufacturers, the basic message is, you know, that they  
16 are more or less making a commitment to us that, if we  
17 get 68 in place, they will deliver the vehicles.

18 MR. CROWFOOT: Yes. We've had several  
19 specific, focused, pointed conversations to that end, and  
20 this is the challenge, it's a bit of a chicken or the egg  
21 dilemma, it's reasonable for the auto companies to  
22 require that there be some infrastructure to fuel the  
23 vehicles; it would be folly for an auto company to bring  
24 a product to market that couldn't be fueled. So, from  
25 our perspective, we're committed to those 68 initial

1 stations and getting them up in the next couple of years,  
2 and we are confident in the commitment of the auto  
3 industry to actually bring these cars to market if that  
4 infrastructure materializes.

5 CHAIRMAN WEISENMILLER: Yeah, I mean, you've  
6 heard that and I've heard it, they've made that in the  
7 legislative context. So, again, I think at this point  
8 it's gone from the projections of our staff and the ARB  
9 staff that if we do this, something will happen, real  
10 tangible commitments from that industry.

11 MR. CROWFOOT: Yeah, that's our understanding  
12 and we likely have auto companies in the room. I mean,  
13 the more -- we're confident in their commitment, but  
14 certainly the auto companies should feel comfortable  
15 explaining that commitment to any interested policy  
16 maker.

17 MS. SHARPLESS: Yes. I'm a little lost, I've  
18 been flipping through the pages trying to find -- and I  
19 know it's someplace in the report -- but on the current  
20 Investment Plan, where are we in terms of meeting the  
21 target of 68 stations? And is that total investment by  
22 118, I mean, to pay for the stations? Or is it a cost  
23 share? How does that work?

24 CHAIRMAN WEISENMILLER: I was going to say  
25 we're not at 68 by any means now.

1 MS. SHARPLESS: What are we at?

2 MR. MCKINNEY: I think that the current count  
3 is -- and correct me if I'm wrong, ARB representatives --  
4 I think we had seven stations in the pipeline funded  
5 through the Air Resources Board, the initial funding  
6 wave. We have 10 in development that I discussed  
7 earlier, that's 17 at full build-out from the current \$29  
8 million solicitation, that's 18 -- I'm not the math guy,  
9 I'm glad other people do the addition here -- that gets  
10 us to, say, two-thirds of the way to 68, assuming or, say  
11 dependent on, if we continue \$20 million for hydrogen  
12 station funding, we can assume about \$1.5 to \$1.8 million  
13 per stations is our cost share. The private sector needs  
14 to put up another 25 to 35 percent. So we have another  
15 two and a half years of funding through here. That gets  
16 us pretty close to 68.

17 MS. SHARPLESS: If we continue to fund in every  
18 Investment Plan the amount that's being recommended?

19 MR. MCKINNEY: Right, at the currently proposed  
20 \$20 million per year.

21 MS. SHARPLESS: And that also assumes that  
22 somewhere the private sector is putting in equal share,  
23 50 -- is it a 50/50 share?

24 MR. MCKINNEY: No, I think currently -- correct  
25 me if I'm wrong, John Butler -- 35 percent match is what



1 we're looking for from the private sector on the  
2 solicitation? Thank you.

3 CHAIRMAN WEISENMILLER: Well, the other issue  
4 that certainly they've raised is the operating cost.

5 MS. SHARPLESS: Yes.

6 CHAIRMAN WEISENMILLER: I guess actually, just  
7 going back for a second, Wade, it would probably be good  
8 if you will remind people where they can find the  
9 Governor's Action Plan? Unfortunately, I don't think we  
10 have it in the package, but just so that's on their --

11 MR. CROWFOOT: Thank you. So anybody that  
12 wants to read the Governor's Action Plan can either  
13 Google 2013 ZEV Action Plan California, or go to the  
14 Governor's Office of Planning and Research Website, which  
15 is opr.ca.gov. We envision this to be a living document,  
16 this is the first edition that benefitted from very broad  
17 stakeholder input. Over time, as the ZEV market evolves,  
18 we intend to update the Action Plan.

19 CHAIRMAN WEISENMILLER: Any other questions  
20 from the Advisory Committee for Wade, in particular?  
21 Either in the room or on the phone? Okay -- sure, go  
22 ahead.

23 MR. STAPLES: Yeah, my name is Paul Staples  
24 with HyGen Industries. I'm looking here at the chart  
25 here for the funding activity in your Investment Plan and

1 I see that hydrogen fuel infrastructure to date, you only  
2 have four projects to date. Okay? That's what it says  
3 here in the document, and that's in four years of --  
4 since this program has started, okay? You know, what I'm  
5 seeing is I'm seeing a very slow reaction to this whole  
6 effort with the automobile companies and I see some  
7 (indiscernible) --

8 CHAIRMAN WEISENMILLER: Thank you. At this  
9 point, again, we're looking for Advisory Comments.  
10 Certainly if you can provide -- you know, just provide on  
11 topic, so I was going to ask staff to provide a better  
12 page reference for you on the number, but then we'll have  
13 to take our lunch break and encourage everyone to go see  
14 the bus. So could you provide a better reference?

15 MR. MCKINNEY: Great. Thank you, Chairman.  
16 Yeah, so the reference is to slide 5, and just so you  
17 appreciate how to read this, \$22 million invested, five  
18 awards, but within those awards are multiple stations,  
19 so, for example, with the Linde LLC award, there are two  
20 active stations, and with the Air Products award, there  
21 are 10 active stations. So that should be read as 12 and  
22 not four.

23 MR. STAPLES: Okay --

24 MR. MCKINNEY: Mr. Chairman, also we have  
25 Bonnie Holmes-Gen with the American Lung Association, who

1 has a scheduling constraint for this afternoon and she  
2 would like to make some remarks prior to lunch.

3 CHAIRMAN WEISENMILLER: Sure. Please, go  
4 ahead.

5 MR. MCKINNEY: Bonnie, are you queued up?

6 MS. HOLMES-GEN: Sorry, it was the mute button  
7 again. Can you hear me all right?

8 MR. MCKINNEY: Very well, thank you.

9 MS. HOLMES-GEN: Okay, great. Thank you so  
10 much, Chairman. I appreciate this opportunity to make a  
11 few early comments because of my scheduling issues.  
12 First of all, I just wanted to acknowledge and applaud  
13 the tremendous amount of work that's gone into this plan,  
14 this Investment Plan. I really appreciated the  
15 opportunity to be involved with this Advisory Committee  
16 over the past five years and I have definitely felt that  
17 each plan has gotten better, and we're now at the point  
18 where we're able to really see, as was mentioned earlier,  
19 more concrete benefits of specific projects that have  
20 been funded by these investment monies. We've seen over  
21 29,000 advanced technology vehicles and equipment, as you  
22 noted, over the years of funding, and this includes, of  
23 course, electric-drive, natural gas, and a broad range of  
24 technologies, but this is tremendous progress forward.  
25 And I felt that each plan, there's been more integration

1 between our air quality and greenhouse gas reduction  
2 goals and planning, and I see that in this plan and very  
3 much appreciate it. And I appreciate the previous  
4 presentations from Mr. Ayala, Mr. Crowfoot. And from the  
5 American Lung Association perspective, I can't underscore  
6 enough the importance of taking the full advantage of  
7 these monies to make sure that we are getting on and  
8 staying on this glide path as was discussed earlier, to  
9 meet our air quality and our greenhouse gas reduction  
10 goals and to be on that path outlined in the Air  
11 Resources Board vision document.

12           And from our perspective, we need to put, again  
13 in this plan, a key priority on funding the clean  
14 alternative fuels that are going to be the longest or  
15 more sustainable fuels to help meet those air quality and  
16 greenhouse gas reduction goals and, of course, that means  
17 a key priority on Electric-Drive and Fuel Cell Vehicles.  
18 And as we know from the vision document, the 90 percent  
19 reduction in emissions that we need by the mid 2030's to  
20 meet our air quality goals, it's a really big list. And  
21 that's why we need to really make sure that these funds  
22 are, again, getting those electric and hydrogen fuel cell  
23 vehicles and technology on the road.

24           And this of course is all grounded in our great  
25 concern to improve public health in California, and

1 that's of course our key objective here. And we don't --  
2 I know there's not a lot of ability to go over health  
3 impacts in the Investment Plan, but that is such a huge  
4 motivation for why we are doing all of this and I hope we  
5 could eventually include more information on the health  
6 impact of the transportation fuels in California, and the  
7 fact that we are still suffering from heart attacks and  
8 strokes, increased hospitalization, asthma attacks, other  
9 chronic illness, delayed lung development in children,  
10 all of these health impacts stemming from burning of  
11 fossil fuels in California, and mainly in the  
12 transportation sector, of course, are adding billions of  
13 dollars in health and medical costs, and economic costs  
14 every year. And so it's a huge pressure on our economy  
15 and one that we can help to resolve by getting cleaner  
16 fuels on the road. So as we move into this investment  
17 plan, we are looking to make sure that we have sufficient  
18 funding, of course, for advancing the hydrogen fueling  
19 infrastructure and getting ready, as we discussed, for  
20 the vehicles that the car manufacturers have committed  
21 they were going to put on the roads. And we do agree  
22 that the need for acceleration of hydrogen funding and  
23 the \$20 million that's put into this plan is appropriate  
24 to get us closer to that goal, the 68 stations, and on  
25 towards to the 100 station goal. We're also concerned to

1 make sure we have sufficient funding for Electric Vehicle  
2 charging and for Electric Vehicles and Plug-In Electric  
3 deployment incentives, and for Plug-In Electric Vehicle  
4 readiness. And we're also very concerned about achieving  
5 transformation in the medium- and heavy-duty sector and  
6 moving toward electric and other cleaner fuels in that  
7 sector. We greatly appreciate the presentation on the  
8 Proterra buses, this is a great achievement for  
9 converting to cleaner fuels, cleaner heavy-duty buses,  
10 and improving air quality in the San Joaquin Valley, so  
11 I'm really glad to hear about that presentation. And of  
12 course, we need to get to this transformation in the  
13 medium- and heavy-duty sector, not only to contribute to  
14 our statewide goals for air quality and greenhouse gases,  
15 but to get those near term impacts for communities that  
16 are already suffering because they're living near these  
17 hotspots, communities that are suffering higher levels of  
18 asthma attacks and chronic illness and premature deaths  
19 because of those diesel emissions.

20           So I just wanted to outline some of those key  
21 issues of concern for us. We are in general agreement  
22 with the Investment -- with the suggested amounts in the  
23 Investment Plan, and we'll provide more comment as we  
24 move forward, I know there's additional time to produce  
25 some written comments. But again, can't underscore the

1 importance from our perspective moving forward to make  
2 sure we have strong Plug-In Electric and Hydrogen fueling  
3 infrastructure and technologies on the road to meet those  
4 air quality and GHG reduction goals, and to ensure we're  
5 on the task of the ARB Vision Document. Thanks so much  
6 for that time to comment.

7 CHAIRMAN WEISENMILLER: Okay, thank you very  
8 much. Any other comments or questions? Again, let's  
9 take our lunch break. We'll be back at 1:00. And again,  
10 we encourage everyone to visit the bus.

11 (Break at 12:05 p.m.)

12 (Reconvene at 1:17 p.m.)

13 CHAIRMAN WEISENMILLER: Okay, let's roll.

14 MR. MCKINNEY: Okay, we're going to begin the  
15 Advisory Committee discussion. We are going to go line  
16 by line down the funding table that is up on the public  
17 screens.

18 The way we'll conduct this part of the meeting  
19 is that we'd like to keep comments to the topic at hand.  
20 First, we will recognize Members of the Advisory  
21 Committee seated here in the room, and then we will go to  
22 Advisory Committee Members on the phone. Following that,  
23 we will take public comments up to three minutes from the  
24 public on this point of discussion.

25 Please fill out a blue card and take it to

1 Charles Smith. Charles is sitting by the laptop running  
2 the WebEx and he will bring them up here and we will  
3 organize a discussion that way.

4 CHAIRMAN WEISENMILLER: Okay, so let's start.

5 MR. MCKINNEY: Okay. Do we have Advisory  
6 Committee Member comments on the Staff Proposal for \$23  
7 million in Biofuels Funding? And if I could ask you to  
8 hold up your -- so, Joe Gershen.

9 MR. GERSHEN: Hi. Joe Gershen with the  
10 California Biodiesel Alliance. Yeah, I just wanted to  
11 point out that at the Biofuels Workshop we had back in  
12 January, there was pretty much across the board agreement  
13 from the stakeholders that putting all the biofuels into  
14 one silo didn't make sense; we really wanted to lobby  
15 hard for the fact that each of these biofuels needed its  
16 own category, that was really important.

17 This obviously looks pretty good here, but if  
18 you look at the 2011 IEPR Benefits section, the metrics  
19 there show that biodiesel provides 34.7 percent of the  
20 program benefits, but again we're only getting 4.8  
21 percent of the funding. So if you look at it on a  
22 category-by-category basis, biodiesel is quite  
23 underfunded.

24 MR. MCKINNEY: Any other Advisory Committee  
25 comments on Biofuels? Jananne.



1 MS. SHARPLESS: Yes. I was just looking at the  
2 way, on the chart on page 4 of the report, it does do a  
3 break-out, I believe, of the categories. But then it  
4 appears that -- I don't know whether those break-outs  
5 happened as a result of the solicitations they got, the  
6 grant solicitations they got, or whether it was designed  
7 that you apportioned it that way. Could you just explain  
8 how, you know, it says "Biomethane production, Projects  
9 to Date, 13, at \$15.1 million; Gasoline Substitutes, 10  
10 projects at \$26.4; and Diesel Substitutes at \$21 million  
11 for 11 projects." Did that -- did you break them out  
12 into those categories? Or did they result from the types  
13 of solicitations you got? How did you decide how that  
14 worked?

15 MR. MCKINNEY: Yes. So everybody is following  
16 the discussion, so Table ES-1 on page 4 of the Investment  
17 Plan, this shows cumulative awards to date in these  
18 different categories. We started out having them broken  
19 into silos, or segmented as Joe Gershen is now  
20 recommending. And for the very first one, I honestly do  
21 not recall how biomethane was so competitive, but it was  
22 much to our surprise, and I don't know if there's  
23 somebody else on our staff who remembers that, but biogas  
24 really jumped out ahead, and I think Charles can clarify.

25 MR. SMITH: If memory serves, we had our first

1 major solicitation was focused specifically on biomethane  
2 production, and then, since then, we have had biofuel  
3 production solicitations that included allocations for  
4 all of three categories, but it was a specific dollar  
5 amount for each category that was reflective of previous  
6 years' Investment Plan allocations.

7 MR. MCKINNEY: We then attempted an experiment  
8 because the feedstocks are becoming more fungible, and by  
9 that I mean they can be used in all three of the fuel  
10 production processes, so to produce biodiesel renewable  
11 diesel, ethanol, cellulosic ethanol, or biogas, we opened  
12 them up and got rid of the kind of internal divisions,  
13 and now I think the majority of the comments from  
14 stakeholders, especially in the biofuels arena, is that  
15 having that open competition may not be appropriate, so  
16 staff is open to that.

17 MS. SHARPLESS: So it's been a learning process  
18 and you have reacted now to what you've seen in the  
19 solicitations and you're reacting, too, to what the  
20 industry is telling you?

21 MR. MCKINNEY: And that's the whole philosophy  
22 of our program, is to respond to the market --

23 MS. SHARPLESS: Okay.

24 MR. MCKINNEY: -- with the market.

25 MS. SHARPLESS: So this draft will maybe appear

1 in its final version with the categories? With the  
2 divisions?

3 MR. MCKINNEY: So typically something like that  
4 is what we do at the solicitation level and not here at  
5 the Investment Plan level.

6 MS. SHARPLESS: I see.

7 MR. MCKINNEY: But, again, that is something  
8 we're taking under advisement. The next and final draft  
9 will be a Commission document, so the Commissioners and  
10 Advisors will have a major role in helping make that  
11 decision.

12 CHAIRMAN WEISENMILLER: Again, today we're  
13 looking for comments; we're certainly not going to reach  
14 conclusions.

15 MS. SHARPLESS: Yeah. So I think in reaction  
16 to, you know, a person like me looking at the information  
17 that I've read, it's important for me to understand how  
18 you got to where you were and I think that getting  
19 through a process, learning in that process, and finding  
20 out what's happening in the market to inform how you deal  
21 with the next step, I would embrace that. I would  
22 support that.

23 MR. GERSHEN: I agree with that. Joe Gershen  
24 again. I agree with that and, you know, as I've said  
25 before and I know you've heard me say it before, that our

1 primary concern with respect to this Revised Staff Draft  
2 Investment Plan Update is that objective metrics have  
3 still not been utilized to evaluate proposed budget  
4 allocations. We brought this up at the last three  
5 Advisory Committee meetings --

6 CHAIRMAN WEISENMILLER: Yeah, although again, I  
7 think part of the responsibility of policymakers is to  
8 not to work through some simple algorithm, but look to  
9 policies. I know in the greenhouse context, one of our  
10 utilities, and I guess you can guess some nuclear plant  
11 is now operating, but say if you're just looking at  
12 greenhouse gas stuff, we should just look at large hydro  
13 and nuclear --

14 MR. GERSHEN: Yeah --

15 CHAIRMAN WEISENMILLER: -- and blow away all  
16 the State's policy preferences, and that's not going to  
17 happen.

18 MR. GERSHEN: And I understand that. It just  
19 seems that there is quite a big disparity, at least in  
20 the biodiesel industry and the renewable diesel industry,  
21 that the diesel substitutes, if you will, that there was  
22 quite a huge disparity.

23 MS. SHARPLESS: If I could just follow-up. The  
24 alternative fuel and the biofuel is an important, I  
25 think, category from the standpoint of meeting the goal

1 that hasn't been talked about too much today, but maybe  
2 it's because it's just so assumed here at the Energy  
3 Commission, and that's meeting the goal to reduce the use  
4 of petroleum. So if you're going to meet that goal, this  
5 category would seem to be real important. And how you  
6 divide those different categories within that large  
7 category, I don't know; I haven't seen the information of  
8 which horse you ride faster to get there.

9 MR. GERSHEN: Well, it's in the 2011 IEPR  
10 Benefits section and so, you know, if you look at that  
11 then, you know, the other big goal I would guess in the  
12 Low Carbon Fuel Standard is to lower carbon, and so  
13 that's part of what we're looking at. And so it's really  
14 a poly fuel solution, which I think we've done a pretty  
15 good job at here, but --

16 MS. SHARPLESS: Okay.

17 MR. MCKINNEY: Okay. Tim Carmichael.

18 MR. CARMICHAEL: Thank you. Just two comments  
19 and this is -- the first one is not at all against  
20 biodiesel, but just to note that one of the reasons that  
21 the CEC has been keen on biomethane is the carbon  
22 intensity of that fuel is so low. ARB estimates it to be  
23 the lowest or second lowest, depending on what chart  
24 you're looking at. And that was definitely part of the  
25 thinking for funding those projects here in California to

1 produce more of that fuel.

2           The second thing, just a thank you to the  
3 staff. You, Jim, mentioned it in your presentation, but  
4 my organization and my members were the primary pushers  
5 to allow a landfill biomethane project to be funded in  
6 the future, even if other pre-landfill projects are  
7 prioritized, and we greatly appreciate that shift and we  
8 think it makes sense, and there may well be a good  
9 project that comes forward in the next year. So thank  
10 you for that.

11           MR. MCKINNEY: And I would just add to that, in  
12 terms of very low carbon values, there is now a carbon  
13 negative pathway for high solid anaerobic digestion, so  
14 that's really important. Dr. Ayala?

15           DR. AYALA: Thank you. First, I want to  
16 acknowledge the Energy Commission, we very much  
17 appreciate at the Air Board the opportunity to continue  
18 to collaborate on the Investment Plan, and we fully  
19 support the proposal. In the area of alternative fuel  
20 production, because the heavy-duty sector is so important  
21 for us in terms of air quality and greenhouse gas  
22 emission reductions, we support the allocation; but I  
23 need to underline that we do need options in renewable  
24 heavy-duty vehicle substitute fuels. And in that arena,  
25 diesel substitutes become critically important for us,

1 again, because when we forecast what we're going to do to  
2 meet the goals in the heavy-duty sector, specifically,  
3 the technology solutions look very different and diesel  
4 substitutes are going to be absolutely critical. So I  
5 just want to put that in the record. Thank you.

6 MR. MCKINNEY: Okay, I think we will now turn  
7 to Advisory Committee members on the phone. Charles, do  
8 we have anybody who wants to speak on this topic?

9 Okay, Chairman, with that we'll afford the  
10 public an opportunity to comment on this if there are any  
11 speakers, again, a blue card is appreciated. I show none  
12 on this topic. Any speakers on the phone who would like  
13 to speak to the biofuels funding allocation as proposed  
14 by staff?

15 MR. STAPLES: I would be glad to.

16 MR. MCKINNEY: Mr. Staples?

17 MR. STAPLES: Yes. I am -- you know, I'm not a  
18 biofuel fan, okay? I really think that spending any  
19 money on it is a waste, okay? I mean, especially being  
20 that since biofuels are not sustainable and can never  
21 supply more than 10 percent of our energy needs, I'm  
22 surprised that there's any funding at all, so  
23 congratulations to the biofuel lobby, you've done a real  
24 good job of retaining biofuels and ethanol, as well as  
25 biomethane, as a major effort here. I mean, again, to

1 have this money from hydrogen in the first place, which  
2 was originally allocated \$40 million a year for  
3 infrastructure, when you break down biofuels for 20-30  
4 years now, I think it's -- nothing significant, and it  
5 never will, okay? That's my opinion, so thank you very  
6 much on that. I do have something else to say on  
7 hydrogen and fueling infrastructure if that's --

8 CHAIRMAN WEISENMILLER: That actually is not on  
9 the table right now. That will be the next item, but  
10 thank you. Let's move on to the next category.

11 MR. MCKINNEY: Okay. Can you identify  
12 yourself, please?

13 MR. SCHIAVO: I'm Pat Schiavo and I represent  
14 CR&R, Inc. And CR&R is a large garbage hauler which has  
15 about 700 trucks, heavy-duty trucks in its fleet, serves  
16 about 2.5 million accounts in 45 cities in Southern  
17 California. With \$4.5 million from CEC in grant money  
18 and about \$15 million invested by the hauler, we're going  
19 to put online an anaerobic digestion plant due to be  
20 completed probably late next summer 2014. It will serve  
21 about 70 trucks with biomethane and then, if that's  
22 successful, which we hope it will -- we're anticipating  
23 it will be -- we're looking at probably tripling that  
24 output in another 200 plus trucks being served.

25 The other thing I'd like to mention is there is



1 a passage of AB 341 last year, which is trying to up the  
2 diversion rate to 75 percent statewide. The only way to  
3 get there is going to be through organics -- use of  
4 organics in anaerobic digestion facilities and compost  
5 facilities, so I'd anticipate there is going to be a lot  
6 more biomethane production as a result of that, as well  
7 as coupled with AB 32, and there is organics legislation  
8 in the hopper right now which is also going to be  
9 promoting the use of food waste and green waste.

10 MR. MCKINNEY: Thank you. And Mr. Chairman, we  
11 have Russ Teall on the WebEx who would also like to speak  
12 to Biofuels.

13 CHAIRMAN WEISENMILLER: Oh, that would be  
14 great.

15 MR. MCKINNEY: Russ Teall.

16 MR. TEALL: Great. Thank you very much. And  
17 thank you to staff for the tremendous effort that you've  
18 put into this. This is no easy task and doing the  
19 allocations over the years has taken some tweaking, but I  
20 think we're starting to get there. As you know, we do  
21 integrated projects involving biomethane, ethanol and  
22 biodiesel, and I support Joe's comments in terms of the  
23 metrics, that's not a be all end all, I think that's not  
24 the sole criteria that we should be using, but I think  
25 it's an indicator and it should be taken into

1 consideration along with the other policy parameters. So  
2 I would urge the staff to make the effort this year to do  
3 that sort of analysis, based on the 2011 IEPR analysis.  
4 And I would like to also agree with Tim Carmichael's  
5 assessment as to why this is so important. And, you  
6 know, we know that this program is under attack from  
7 different areas and will be up for reauthorization and I  
8 think it's very important. And I've been very gratified  
9 to see the different fuels and vehicle infrastructures  
10 and the environmental groups working together on this,  
11 but I think that part of the credibility of the program  
12 will revolve around being able to at least point to the  
13 metrics and say that they were taken into consideration.  
14 Thank you.

15 MR. MCKINNEY: Great. Thank you, Russ. It  
16 looks like we have one more speaker on Biofuels. Rebecca  
17 Boudreaux from Oberon Fuels. Would you like to comment?

18 MS. BOUDREAUX: Actually, I just had a -- so  
19 I'm happy to wait until the end.

20 MR. MCKINNEY: Okay, great. Thank you. We'll  
21 hold you until the end. Okay, Chairman, I think that  
22 concludes our comments on the Biofuels funding proposal.

23 We'll turn now to Infrastructure funding. And  
24 then, Esther, I see you have a blue card and we will get  
25 to you as we go through this discussion.

1           The first line item is a \$7 million proposal  
2 for electric charging infrastructure, so Members of the  
3 Committee?

4           MS. TUTT: Thank you, Jim. Eileen Tutt with  
5 the California Electric Transportation Coalition. I just  
6 have a couple comments. We submitted written comments,  
7 but they weren't incorporated, so I just want to let you  
8 know that I do think it's important to recognize that the  
9 NRG grant doesn't cover a lot of areas of the state where  
10 there's likely to be electric vehicles, including places  
11 like Santa Barbara, that are in IOU service territory,  
12 but aren't covered by the NRG agreement. So I'm not --  
13 I'm appreciative of the money and I think \$7 million is a  
14 good amount, but I want you to be aware that I don't want  
15 to exclude IOU service territories outright just because  
16 there are parts of the IOU service territories that  
17 aren't covered. So if that modification could be made to  
18 the report, I'd really appreciate that.

19           Also, I have a couple of questions as  
20 clarification questions. On slide 5 of the staff -- I  
21 don't know if we can get to that or not, but I had some  
22 comments on the staff presentation and I didn't want to  
23 interrupt the presentation, I wanted to do it during this  
24 timeframe. But on electric drive, on slide 5, Jim, you  
25 laid out \$25 million for infrastructure and \$35 million

1 for heavy-duty vehicles, but that's only \$60 million and  
2 there's \$123 million shown here, so I wasn't sure where  
3 the other \$63 approximately million was being spent.

4 MR. MCKINNEY: Right.

5 MS. TUTT: And maybe this is just too  
6 aggregated, but I find this -- I find this a little -- it  
7 just -- optically I find it a little misleading, so I  
8 don't like this setup, but I just want to understand  
9 what's in those numbers because over half of it wasn't  
10 accounted for.

11 MR. MCKINNEY: Yeah. So, Charles, if you could  
12 pull up slide 7, please, or Andre? And I appreciate the  
13 confusion there because I was verbally going through a  
14 lot of different parts of the electric drive funding.  
15 But this chart here, I think, shows it more clearly. So  
16 electric drive, the main components are EVSE funding,  
17 medium-duty and heavy-duty advanced technology vehicles,  
18 which I think I pegged at about \$35 million aggregate,  
19 and then manufacturing. And in manufacturing, you get  
20 battery development, component development, assembly line  
21 development, and that covers both light-duty, medium-  
22 duty, and heavy-duty electric vehicle applications. So  
23 I'm referring to the bar chart that's on the next page.

24 MS. TUTT: Yeah, no, I see that. I didn't  
25 realize it also included -- electric drive also included

1 manufacturing. Again, I think this particular table, I  
2 understand the desire to aggregate, but to me  
3 manufacturing is very different than vehicles and  
4 infrastructure. Anyway, that was my -- thank you for the  
5 clarification.

6           And I had one more just question about -- oh,  
7 Alberto, I hope we can get a copy of your slides. I  
8 thought the presentation was very good, it was very  
9 helpful to me and it's not the first time I say it, but I  
10 found that I need to see things three or four times  
11 before I get it. But I'm just going to reiterate for all  
12 the CARB folks here that I think that when these  
13 scenarios are put out with hydrogen and electricity and  
14 Plug-In Hybrids, I think it tends to give the impression  
15 that CARB favors a particular fuel over another, or can  
16 foresee what the future is going to hold out to 2050; and  
17 I've said this before, but I think it's better to look at  
18 sort of zero miles being driven, rather than pick  
19 technology types and then recognize we support the \$20  
20 million for hydrogen, we think we need that  
21 infrastructure very badly, and I think this is the way to  
22 do it, so we're not opposed to that. But when it's put  
23 out like that where it looks like you're going to predict  
24 what that mix is going to look like out to 2050, it  
25 creates some problems for us, so it would be easier to

1 look at it as just sort of zero miles traveled that's  
2 needed, and then these are the technologies that can  
3 provide the miles of travel needed, and then look at it  
4 that way. So I think it's less divisive to do it that  
5 way and I'm just going to put it out there because I know  
6 we've talked about it before. Thank you.

7 CHAIRMAN WEISENMILLER: Could we post the ARB  
8 presentation on the website here for following up so that  
9 it will be available? Sure, okay.

10 MR. MCKINNEY: Any other Committee Member  
11 comments on the EVSE funding proposal? John Shears for  
12 Joe Gershen, I guess.

13 MR. SHEARS: Eileen, could you just clarify  
14 what you mean by the zero miles, it's part of a  
15 discussion that I've recently been in, so I'm not quite  
16 sure of what you're --

17 MS. TUTT: Yes. When Dr. Ayala showed the  
18 chart that had out to 2050, it had hydrogen vehicles,  
19 battery electrics, plug-in hybrids, and it broke it down  
20 by technology type, rather than by, you know, just not  
21 stating technology type, just stating that we need this  
22 many miles traveled that are zero emission vehicles.

23 MR. SHEARS: Oh, you mean zero emission miles.

24 MS. TUTT: Zero emission vehicle miles, yeah.  
25 Oh, sorry John, yeah. So instead of deciding which

1 technology mix and running a bunch of scenarios so that  
2 it looks like, you know, you can mix all the technologies  
3 together, I think -- I don't think anybody can predict  
4 what's going to happen in 2050, and I think you could end  
5 up with plug-in hybrids using sustainable biofuels for  
6 that matter, especially in the heavy-duty sector. So I  
7 don't think anybody can predict that, and I don't have --  
8 I certainly don't have a crystal ball. So that's what  
9 I'd like to see is less technology because Air Boards  
10 know not to pick technology, rather to set standards, and  
11 I just think we should carry that through here, as well.

12 DR. AYALA: Just to emphasize a point, and I  
13 know we'd be more than happy to provide the information  
14 that we presented today in addition to any other  
15 information that could be useful. We fully agree. What  
16 we're trying to do with this scenario analysis that is  
17 included in this Vision 2050 exercise that was referred  
18 to earlier is simply to lay out very clearly what a  
19 challenge we have, and what it really is going to take to  
20 get us there because, to the extent that we all agree  
21 that we need significant reductions in greenhouse gases,  
22 and massive improvement in air quality, what we're trying  
23 to do is convey the point that we're trying to get there  
24 not with incremental innovation, but it's really going to  
25 be whole system transformative technology. And if you

1 want to present it in terms of zero emission miles,  
2 technology choices, fuel choices, we can certainly take  
3 comments. And we want to make the information the most  
4 useful to all of you so long as we can retain the key  
5 message, which is it's really going to take  
6 transformation of the transportation sector.

7 MR. MCKINNEY: John.

8 MR. SHEARS: Yeah. I guess the challenge is  
9 because the scenarios are basically -- and this gets to  
10 the metrics issue and what are appropriate metrics, and  
11 when are you getting the serious arm waving versus when  
12 can you do credible crystal balling -- and so the  
13 challenge is showing, given our understanding of the  
14 state of the technologies today and the trajectory for  
15 the development pathways for those technologies, what the  
16 life scenarios are going to look like. You know, I agree  
17 with you 100 percent, Eileen, you know, we're looking out  
18 40 years, lots of things could shift, lots of ground.  
19 You know, if we have serious breakthroughs in batteries,  
20 many of which actually would make the batteries look more  
21 like fuel cells and how they operate, that picture should  
22 shift a bit. So I agree and I'm sensitive to how we sort  
23 of broach this turf around ZEV vehicles.

24 I just want to mention that CARB is not the  
25 only body that's done this kind of scenario work and,



1 when you look at scenario work that's been done anywhere  
2 else in the world, in the UK, the Kane review of low  
3 carbon cars and through the U and elsewhere, the  
4 scenarios tend to come out looking relatively similar.  
5 But that again is a snapshot based on our current  
6 understanding of today's technology and the likely near-  
7 term pathways for the development of those technologies.

8 I think the challenge for the CEC staff and the  
9 CARB staff is how to clearly explain what's going on, you  
10 know, by also being sensitive to the limitations. But  
11 the take home message is that we really need to transform  
12 the on road, and even off road, which we really haven't  
13 been talking about much, the transportation system. So,  
14 thanks.

15 MR. MCKINNEY: Okay, let's turn to Committee  
16 Members on the phone. Do we have anybody, Charles? Is  
17 there anybody from the public here who has submitted a  
18 blue card, who would like to speak to this funding  
19 category? Is there anybody on the phone -- oh, Dave  
20 Almeida.

21 MR. ALMEIDA: Hi everybody. My name is Dave  
22 Almeida. I work with the California Center for  
23 Sustainable Energy. And I just wanted to bring up an  
24 idea I came across yesterday on a call that we had with  
25 Regional Planning Grant Awardees across the state,

1 focused on infrastructure deployment.

2           So we had a workshop that was organized by the  
3 Energy Commission and NREL a couple months ago and, as  
4 part of that, there was a discussion of how we can make  
5 infrastructure more cost competitive. There were a  
6 number of different strategies that came up from that,  
7 and so I just want to encourage the Energy Commission to  
8 kind of go back to that document and use that in future  
9 solicitations, especially for the current year and into  
10 next year, and to also look at some other types of  
11 strategies of investing as opposed to going straight to  
12 the technology provider. There are a number of  
13 strategies that was identified through those  
14 organizations, trying to make it so the end consumer  
15 would have more access to those investments. And so I  
16 encourage the Commission to look at that. Thanks.

17           CHAIRMAN WEISENMILLER: Actually, if there's  
18 any way you could submit written comments on our record  
19 that would sort of summarize that, that would be --

20           MR. ALMEIDA: Definitely, yeah. I can  
21 definitely do that. And building off of that call, CEC  
22 staff reached out to the folks that were on the line to  
23 come up with other strategies, so I'll follow-up with  
24 them and see if we can come up with more of a coalition  
25 response.

1           CHAIRMAN WEISENMILLER:  Although, again --  
2  that's good because what I'm looking for is something in  
3  the record that the Advisory Committee and everyone can  
4  look at and sort of understand the changes.  So that  
5  would be great if you could do that.

6           MR. ALMEIDA:  Okay.

7           MR. MCKINNEY:  Is there anybody from the public  
8  on the phone who wants to comment on the \$7 million  
9  proposed allocation for EVSE?  Hearing none, okay.

10           We will now turn to the hydrogen fueling  
11  infrastructure.  The staff proposed level is \$20 million.  
12  We'll open it to Committee discussion.  Can you identify  
13  yourself, please?

14           MR. BARRETT:  Sure, absolutely.  My name is  
15  Will Barrett, I'm a member of the American Lung  
16  Association, sitting in for Bonnie Holmes-Gen who wasn't  
17  able to stay for the whole meeting.

18           I just wanted to reiterate some of the points  
19  that Bonnie made earlier over the phone, that we are very  
20  supportive from a clean air and public health perspective  
21  of the \$20 million investment in the hydrogen  
22  infrastructure.  We think that this is a critical piece,  
23  along with the EV charging infrastructure, to really  
24  bring about the vision for 2050 to get the cleanest  
25  possible air for California residents to spur the market

1 and really move forward. So we do support the  
2 acceleration of the \$20 million investment in new  
3 hydrogen stations and thank you to the staff for all the  
4 excellent work that went into this.

5 MR. MCKINNEY: Great. Thank you. And before  
6 we go to the next question, Jananne Sharpless asked a  
7 really good question earlier this morning and, as I said,  
8 my public math is really bad, but over lunch I got it  
9 figured out. So in terms of what we buy for the amount  
10 of money spent historically and proposed for the future,  
11 cumulatively, so ARB has funded seven stations, we have  
12 funded 12; that puts us at 19. The current solicitation  
13 for \$29 million, we're assuming 18 stations for that;  
14 that puts us at 37. If you assume \$20 million a year for  
15 the next 2.5 fiscal years, that's \$50 million at \$1.8  
16 million contribution from the public per station; that  
17 gets us another 27 stations. So all things being go and  
18 optimal, that would put us at 64 at the end of this 7.5  
19 year program for hydrogen stations.

20 So any further discussion from the Committee?

21 MR. CARMICHAEL: This is Tim Carmichael. Just  
22 want to, well, first of all, organizations on record  
23 supporting legislation to renew this program, which  
24 includes locking in money for hydrogen, and we were part  
25 of discussions last year, you know, debating that. That

1 said, one of the things that I raised at the last  
2 meeting, which I think sparked some interest among some  
3 members, is this idea that we're not out of the woods  
4 yet, we don't -- if anyone tells you that this program is  
5 definitely going to be renewed by the Legislature they're  
6 lying to you. I would say we've got about 80/20 right  
7 now is my handicapping of the race. And one of the  
8 things that people are raising is the hydrogen funding.  
9 What I raised at the last meeting was, there are  
10 opportunities -- or there may be opportunities -- to find  
11 synergies between natural gas and hydrogen  
12 infrastructure. For those that aren't clear, most of  
13 hydrogen today is produced from a natural gas feedstock  
14 and natural gas stations for the most part are less  
15 expensive and able to pencil out with private funding in  
16 most scenarios right away. And so you can at least  
17 partially address some of the challenges faced by rolling  
18 out this hydrogen infrastructure.

19           And some of the nonprofit advocates for fuel  
20 cell vehicles in hydrogen approached me after the last  
21 meeting, I put them in touch with one of my members that  
22 is keen on this idea and sees at least one viable long-  
23 term scenario where natural gas transitions into hydrogen  
24 as a transportation fuel. But I've since heard from  
25 automakers that are also intrigued by this idea, and so I

1 want to raise it again. I think because of the size of  
2 the money that's needed, and by no means is this an  
3 argument against this level of investment, it's how do we  
4 do it in as fiscally responsible a way, or how do we lay  
5 the groundwork to give it the greatest chances of  
6 succeeding. And I think the CEC might want to be part of  
7 some conversations going forward of how this might work  
8 and, you know, maybe my personal views and a couple of my  
9 members are wrong, and that's not the way it's going to  
10 play out in the future, but I think there's some reason  
11 to think that it could be a good strategy to try and co-  
12 locate some of this infrastructure.

13 MR. MCKINNEY: Thank you, Tim. Steve Ellis,  
14 Fuel Cell Partnership.

15 MR. ELLIS: First of all, I'd like to thank CEC  
16 Commissioner and everyone for support of this Investment  
17 Plan and that we support this level of funding under this  
18 plan. We think that this is an appropriate amount of  
19 funding and goes a long ways towards sustainable  
20 transportation and the goals of the partnership and what  
21 we've set, specifically low carbon fuels and inclusive of  
22 the other fuels, and even as Tim just mentioned, to find  
23 synergies with other fuels such as biofuels and, of  
24 course, natural gas industry infrastructure for co-  
25 locating.

1           You know, there's a lot always said on the  
2 hydrogen and fuel cell side of things and still various  
3 aspects of it called into question. Certainly, the  
4 automakers are on track to bring these vehicles to  
5 commercial market in the timelines that have been stated.  
6 As I said earlier, I wear the Fuel Cell Partnership cap  
7 mostly today, but also on behalf of Honda. We are in  
8 meetings daily toward these goals.

9           And as an industry, the Fuel Cell Partnership  
10 Roadmap, the plan for 68 stations toward the 100 -- and I  
11 think Jim put it very well, which is this level of  
12 funding towards 68 being necessary to get it to that  
13 almost tipping point where the baton can be tossed to the  
14 private investors, to then kind of wean itself off of the  
15 public funding, will be critical and that 100 number,  
16 plus or minus, is the goal to achieve.

17           And we're doing our part to bring these  
18 advanced ultra low carbon vehicles to market, certainly I  
19 think it's becoming more apparent, you know, the things  
20 that are obvious are they are zero emission, they run on  
21 an alternative fuel, all of these goals that people want  
22 to achieve, it does sometimes call into question when you  
23 hear references to natural gas as to feedstock, sometimes  
24 leaning to the negative side when in reality, and I think  
25 it was stated very clearly earlier today, that carbon

1 emissions are generally 60 percent or better from that  
2 point, even with that as a feedstock. The beauty is that  
3 we do have the diversity of feedstocks to use.

4           So we have the potential to have a broad class  
5 of vehicles that supply the needs of the public of  
6 California, whether it's inside the cities, those that  
7 want to use larger vehicles to throw the family in for  
8 recreational activities like skiing in our beautiful  
9 state's mountains, or other activities, so the vehicle  
10 platform diversity is a key component of this.

11           And I think on the question of fuel cost,  
12 clearly all of the people in the industry bringing  
13 hydrogen to market have clearly stated that this can be  
14 cost competitive with gasoline, maybe not initially, but  
15 anything at those low volumes is often saddled with a  
16 higher cost. And it can reach fuel price parity as has  
17 been stated earlier with comparable 3- mile per gallon  
18 mid-size sedan on a cost per mile basis.

19           So we're supportive of this plan and appreciate  
20 the efforts. What is almost most important is there is  
21 that certainty. As I was quoted in a slide earlier  
22 today, we know what we can do, but the uncertainty is on  
23 the infrastructure side. We don't have control of that.  
24 But the two are intrinsically linked and it's critical to  
25 our success. So I just wanted to make those comments.



1           I will say, in regards to what Tim stated,  
2 there is a difference -- and now I'll wear the Honda hat  
3 -- because we've introduced natural gas vehicles to the  
4 fleet side of the business back in 1998 and transitioned  
5 to a retail consumer focus, and our efforts are paying  
6 off. But I'm bringing that up only because I think the  
7 model that the natural gas vehicle has experienced and  
8 profited from over the last 20 years really has been a  
9 fleet-based model. And in saying that, the vast  
10 difference is that all of the station work that we're  
11 doing with hydrogen fuel cell vehicles is toward retail  
12 consumer outlets at existing gasoline stations and that  
13 model -- well lit, convenient, a model that allows people  
14 to mimic exactly what they do with a gasoline vehicle  
15 today, with the look and feel. And that hasn't been the  
16 case and is currently not the case, with a few exceptions  
17 on the natural gas side. So I think the opportunity is  
18 there, as Tim says, to find synergy and build that  
19 together, but they are two different models that we've  
20 experienced up to this date. Okay? Thank you.

21           MR. MCKINNEY: Thank you, Steve. Any other  
22 members of the Committee here want to comment on  
23 hydrogen? Chris Shimoda?

24           MR. SHIMODA: I'd just like to back up some of  
25 the comments of Steve and Tim, that from my understanding

1 of the initial hydrogen fuel cell truck technology,  
2 you're really looking at more of the fleet fueling  
3 scenarios, so if you were going to be looking at the two  
4 private passenger vehicle fueling infrastructure versus  
5 where the initial truck technology is going to fit, you  
6 are looking more fleet rather than -- I know that there  
7 are some private entities looking at like an over the  
8 road natural gas highway, that's more that retail model  
9 in the heavy-duty sector, so just to back up what Steve  
10 is saying, I think it is somewhat of a separate project.

11 MR. MCKINNEY: Jananne Sharpless.

12 MS. SHARPLESS: There's not much more that I  
13 can add to this, other than the fact that I guess I have  
14 a much clearer picture of the drivers of this money and  
15 why you're putting so much into the hydrogen category.  
16 Having sat in that seat before, of course, I know how to  
17 worry, and I'm sure there is a bit of worry that goes on  
18 everyday in how this is going to play out. But I guess I  
19 would just emphasize how important it would be -- and I'm  
20 not sure that this is something the Energy Commission can  
21 do, but how important it is to get the private sector  
22 players to commit to the fuel infrastructure. And at  
23 some point our hope would be that you would get critical  
24 mass and you would no longer need government subsidy to  
25 build infrastructure. I don't know that anybody at this

1 time knows whether that's 68 stations or 100 stations,  
2 whether that's how many millions of cars to assure  
3 investors that there will be a return on their  
4 investment, and that it's not a risk that won't be  
5 returned. So I guess I would just emphasize the point  
6 that, gee, where are those private sector partners? Are  
7 they in the room today? Thanks.

8 MR. MCKINNEY: Thank you, Jananne. Turning to  
9 Committee members on the phone, do we have anybody,  
10 Charles?

11 No. We've got a couple of blue cards from  
12 members of the public here. Again, I'm going to ask you  
13 to keep your comments to three minutes, keep it to the  
14 subject at hand. So Matt McClory and then Matt Forrest.

15 MR. MCCLORY: Hello. I'm Matt McClory. I'm  
16 with Toyota. And first I'd like to thank the Chair,  
17 Commissioner Douglas, the Advisory Board Members, and  
18 staff for all the effort that was done to bring the  
19 updated Investment Plan.

20 Toyota, we have a broad technology portfolio.  
21 Some of our key advanced technologies include short range  
22 EVs, Plug-In Hybrid Vehicles, and Fuel Cell Vehicles, and  
23 we think that each of these technologies has a place in  
24 the market.

25 In regards to my comments here today, I'd like

1 to comment on the hydrogen section. And at Toyota, we  
2 completely support the allocation that's been proposed,  
3 and we feel that this is a very critical and timely topic  
4 that needs attention towards -- in the case of Toyota and  
5 we know the other industry members, our launch that we  
6 have announced for Fuel Cell Vehicles for the retail  
7 market in the 2015 timeframe. At Toyota, we're closely  
8 following the status of the stations and we definitely  
9 appreciate all the effort that the state has provided for  
10 the former PON, the current PON, and the work that's gone  
11 into the Investment Plan. And one of the key things that  
12 we're looking at is trying to understand the status of  
13 the stations, so this is the phase that we're in right  
14 now prior to 2015, where the activity transitions from  
15 the development side to the kind of pre-sales side, where  
16 various many groups actually get kicked off and are in  
17 the process of getting dealers set up, getting regional  
18 facilities set up to support the rollout.

19 But the fundamental question right now that we  
20 have is the number of stations that are going to be  
21 available, so it's definitely something that we're paying  
22 critical attention to. And the thing I'd like to  
23 underscore is that the actual number of vehicles that  
24 Toyota would be able to bring out is going to be directly  
25 correlated to the number of stations and the locations of

1 where those stations are. So I just want to kind of  
2 underscore that it's definitely something that we're  
3 paying attention to.

4           At Toyota, we basically are in our fourth year  
5 of a demo program where we've deployed over 100 vehicles  
6 in the U.S. and the majority of them are in California,  
7 it was basically our fifth-generation Fuel Cell Vehicle,  
8 and it was given to many different customers. And that  
9 experience has validated the performance of the vehicle.  
10 And we feel that the technology is viable to come to  
11 market and be able to provide an alternative zero  
12 emission vehicle technology choice that can replace  
13 light-duty vehicles and heavy-duty vehicles of convention  
14 powertrains. So we really think of this as, you know, a  
15 key pathway for us as part of our internal roadmap. So  
16 with that, I'll close.

17           CHAIRMAN WEISENMILLER: Thank you.

18           MR. MCKINNEY: Great. Thank you, Matt.

19           Jananne Sharpless.

20           MS. SHARPLESS: Can I just ask a question of  
21 Toyota? When you roll out your vehicles, are you going  
22 to be offering more than one model?

23           MR. MCCLORY: We haven't announced the various  
24 models at this point. The only announcement that we did  
25 make in the December 2011 Tech Auto Show is that it would

1 be sedan-based, but there are other developments for  
2 future platforms, we just haven't announced the timing  
3 with that yet.

4 MS. SHARPLESS: Okay, so you're serving your  
5 customer base and you're finding out who might be the  
6 likely market, early market?

7 MR. MCCLORY: That's correct. And it's all  
8 basically time phased, so just as you saw in 2001 for the  
9 U.S., the first hybrid powertrain was in a Prius, in a  
10 small sedan, and that eventually scaled and evolved into  
11 multiple platforms, SUVs, other types of larger vehicles.  
12 So we see that that's the same roadmap for Fuel Cell  
13 Vehicles. There's no limitation on the size of the  
14 vehicle that you can put a Fuel Cell powertrain in. And  
15 as the chart that was shown a little bit earlier by the  
16 ARB, actually the cost increased to have greater driving  
17 range when you have a larger vehicle as a smaller  
18 increment than other technologies, and so that's why we  
19 see as a zero emission technology option, it has the most  
20 promise to be able to scale to a wide range of vehicles.  
21 Thank you.

22 MR. MCKINNEY: I'd like to turn to Tyson  
23 Eckerle who is a member of the Advisory Committee on the  
24 phone. Tyson? I don't know if you're speaking, we can't  
25 hear you. Okay, we'll come back to you later, Tyson.

1 Bear with us. Let's see, continuing with the public  
2 audience in the room, Matt Forrest.

3 MR. FORREST: Hello, everyone. My name is Matt  
4 Forrest and I'm with Mercedes-Benz Research & Development  
5 North America.

6 I would like to voice our support for the CEC's  
7 proposal to invest \$20 million into hydrogen  
8 infrastructure in the Investment Plan. As you may know,  
9 Mercedes-Benz has over 50 regular everyday customers  
10 paying for our -- leasing our Fuel Cell Vehicle in the  
11 Los Angeles area at this time. And as we go through and  
12 survey these customers from time to time, the  
13 overwhelming feedback is that they intend to buy or lease  
14 one of these vehicles when they come onto the market in  
15 the 2015 to 2017 timeframe. And that's even knowing that  
16 presently available to them, there's only about five to  
17 six stations that they have at their disposal. They're  
18 very very committed to this technology. Therefore, we  
19 feel that that proposed investment in hydrogen  
20 infrastructure is necessary to see the market with  
21 stations in order to support both our present and our  
22 future customers, as well as reach the State's air  
23 quality goals. Thank you.

24 MR. MCKINNEY: Thank you. So, Charles, I'll  
25 wait for your signal when Tyson is available. James

1 Provenzano, I believe on the phone?

2 MR. PROVENZANO: Yes. Thank you. This is  
3 James Provenzano and I'm President of Clean Air Now. And  
4 being a public advocacy organization for the goal of  
5 protecting the public's health from air pollution, I want  
6 to second everything the American Lung Association has  
7 said. And I appreciate very much the presentation from  
8 the Air Resources Board and the Governor's Office.

9 I want to thank the CEC for their support for  
10 hydrogen and for ZEV technologies, in general; but one  
11 can make the argument that due to the great potential  
12 hydrogen energy technologies have in protecting public  
13 health and the environment, you could make the argument  
14 that it is sorely underfunded at this level. So we want  
15 to keep on keeping on with hydrogen.

16 And I personally don't understand the pushback  
17 on the Air Resources Board presentation. The ARB has  
18 done their homework, as have the OEMs, they know what  
19 works now. Things could change in the future, but we  
20 need to get on the road to achieve our 2050 goals, and  
21 hydrogen fuel cell electric vehicles play a key role in  
22 that, and so we need to start on the road, no pun  
23 intended, now with these technologies. And the OEMs have  
24 done their homework, as has the governments and countries  
25 of Germany and Japan and Korea and Canada, and they're



1 going forward with large programs to support the  
2 infrastructure to support hydrogen fuel cell powered  
3 vehicles. So I just want to thank the CEC for keeping  
4 hydrogen in the game and I know you will be pleasantly  
5 rewarded when you see the fruits of the hydrogen economy  
6 bear fruit in the not too distant future. So, thank you  
7 so much.

8 MR. MCKINNEY: Thank you, Mr. Provenzano.  
9 Tyson Eckerle -- did you want to respond? Okay, Alberto.

10 DR. AYALA: Thank you for the comment on the  
11 phone. I just want to clarify if I may, I apologize if I  
12 didn't make the point clearer. Absolutely, there is no  
13 pushback from the Air Resources Board. We need Zero  
14 emission Vehicles and I think I stated already that Fuel  
15 Cell Vehicles play a very clear role, so I just want to  
16 make that point clearer.

17 MR. PROVENZANO: Oh, no, I'm sorry, I was  
18 misunderstood. No, the pushback towards your  
19 presentation. I appreciate what the ARB is doing and I  
20 support it 100 percent on what you're saying; it was -- I  
21 was hearing some comments, some pushback on what you were  
22 saying in your presentation from some people that are  
23 present, that's what I meant. That just surprised me  
24 that there was pushback on your comments.

25 MR. MCKINNEY: Eileen.

1 MS. TUTT: So this is Eileen Tutt, and I'm  
2 actually not sure if you're referring to my comments with  
3 the California Electric Transportation Coalition, but I  
4 actually think that I support this recommendation, I  
5 support the \$20 million, my comment had nothing to do  
6 with this Committee, and it was Alberto's presentation on  
7 looking out to 2050. I think that it is very difficult to  
8 predict what the vehicle mix is going to look like in  
9 2050, and what I was suggesting is that, rather than try  
10 to lay out various technological solutions or scenarios,  
11 that we would just say we need to get to zero. It sends  
12 exactly the same message. And the technologies that we  
13 have today are hydrogen and electricity and possibly  
14 biofuels that are zero. So what I was trying to do was  
15 to try to be more technically -- I think it's dangerous  
16 to try to predict what it's going to look -- what vehicle  
17 mixes are going to be in 2050, and when Mr. Shears tells  
18 me that everyone agrees on the mix, that just makes me  
19 think that they're all using the same consultant or  
20 something because no one can say what it's going to look  
21 like in 2050, so I think the CARB presentation was  
22 extremely well done. I think it's just fine to look at  
23 scenarios, I just think that if you're going to do that,  
24 then you have to put up more than one scenario, and that  
25 there's a way to send the same message without like

1 breaking it out by technology type, so I never meant to  
2 criticize CARB, who basically raised me professionally.

3 MR. PROVENZANO: Mr. Commissioner, may I make  
4 one comment related to one of Eileen's comments, that is  
5 related to the metric question with the cost of the  
6 infrastructure?

7 MR. MCKINNEY: I'm sorry, we had a hand ahead  
8 of the phone speaker here. I think John Shears wanted to  
9 comment.

10 MR. SHEARS: I was just going to make an  
11 observation to CARB's -- like CARB is the parent and us  
12 the siblings, rival siblings going after, you know, who  
13 is going to win out in the end, because CARB likes both  
14 EVs and Fuel Cell Vehicles, so...

15 MR. MCKINNEY: And to the speaker on the phone,  
16 we've got a queue for phone comments on this subject, so  
17 if I could ask you to hold your comments until I  
18 recognize you?

19 MR. PROVENZANO: Oh, okay. So this is James  
20 again. I never got --

21 MR. MCKINNEY: Oh, I'm sorry. Okay, a follow-  
22 up comment then. Okay, go ahead.

23 MR. PROVENZANO: Yes, well, Eileen made the  
24 comment about zero miles traveled and I agree with that,  
25 and an interesting metric might be, what is the cost-

1 effectiveness of the ZEV infrastructure on the zero miles  
2 traveled that are supported by the capital expenditures  
3 towards that infrastructure. That might be an  
4 interesting metric. That's all I wanted to say.

5 MR. MCKINNEY: Great, thank you. Sorry for the  
6 confusion there. Tyson Eckerle, are you available now?

7 MR. FREEMAN: It looks like we're unable to  
8 because of technical difficulties. He just wanted to  
9 voice his strong support of the hydrogen allocation as it  
10 is in the Investment Plan today.

11 MR. MCKINNEY: Okay. I was going to say,  
12 Tyson, I'll give you one more pitch, and then it's three  
13 strikes, so we'll have to take your comments in writing.  
14 Little League is starting, yeah, okay.

15 Okay, Steve Ellis, did you have a comment?

16 MR. ELLIS: Yeah, wearing kind of the Honda hat  
17 here for a moment. And hearing the discussion and  
18 Eileen's great points about the scenarios in the future,  
19 certainly I think no automaker has that great crystal  
20 ball, especially with technologies that we are certainly  
21 all recognizing have great risks into the future; yet, at  
22 the same time, I think of two things, one is that it may  
23 be shown that way as a result of what I'll say is a need,  
24 a need because with these technologies that have evolved  
25 literally just in the last five to 10 years, there's

1 still a lot of question, a lot of misunderstanding, a lot  
2 of belief, as we've heard over the years, of which one  
3 will win, that kind of thing. So I think when you, as  
4 others have said in the room, and clearly from Honda's  
5 standpoint, we believe a portfolio of technologies is  
6 critically necessary, yet in this case all those out at  
7 the end being electric drive and zero emission, I think  
8 it's not harmful, so to speak. Time will tell what that  
9 slices of the wedge will look like, and I think we would  
10 be flawed to believe that what we see there today is  
11 locked in stone. But at the same time, I think there's  
12 a time and place for everything and I think it is healthy  
13 to see that these are clearly identified separately,  
14 given the fact that there's in this horserace which of  
15 the technologies provide these valuable benefits, and  
16 when the answer is all three, and the portfolio is  
17 needed, it's not harmful to show them as is seen today.  
18 So I just wanted to add those comments to it.

19 MR. MCKINNEY: Great. Thank you, Steve. I  
20 want to turn to Steve Douglas. I don't know if you're in  
21 the room?

22 MR. DOUGLAS: Thanks. Steve Douglas with the  
23 Alliance for Automobile Manufacturers. And I'll be  
24 quick. We represent 13 car and light truck  
25 manufacturers. We support the \$20 million funding for

1 hydrogen infrastructure. We're committed to fuel cell  
2 vehicles and there's some thought that maybe this is just  
3 a science project; we did a survey, the automobile  
4 manufacturers have spent over \$10 billion on developing  
5 Fuel Cell Electric Vehicles that's 10,000 million. We  
6 have over 2,000 scientists and engineers working on Fuel  
7 Cell Vehicle development and launch today, so we're  
8 committed to it.

9           I think I'd point out that Fuel Cell Vehicles  
10 are a little bit unique, they're not like Battery  
11 Electric Vehicles for one primary reason, and that's that  
12 without this infrastructure in place, there is no  
13 vehicle, there is no future. And there is no future for  
14 light-duty vehicles, nor heavy-duty, or any others. And  
15 the other unique aspect is I think Fuel Cell Vehicles do  
16 translate the technology that works on a light-duty  
17 vehicle, works on a medium-duty vehicle, it works on  
18 buses, tractors, trailers, so if we succeed in this area,  
19 and if we invest in this area, we think it translates  
20 across the board. Thanks.

21           MR. MCKINNEY: Thank you. Turning back to the  
22 phone, I want to recognize Paul Staples with HyGen.

23           MR. STAPLES: Thank you very much. I  
24 appreciate it. Yes, a couple real quick things. First  
25 of all, in answer to why so much for hydrogen, okay,

1 somebody brought that up. Well, for the last 40 or 50  
2 years, we've been investing into alternative fuels with  
3 no real change happening, and no real big improvement in  
4 any other technology sector to take the place of the  
5 internal combustion engine. The fuel cell vehicle, fuel  
6 cell development in the '90s in the last 10 years have  
7 moved so fast, okay, because of the development of the  
8 technology where it started out with, that they're ready  
9 for prime time in just 10 years, in the last 10 years  
10 since the government has started putting money into  
11 hydrogen. That is the reason. That is the reason  
12 because it's the most viable, it's the most sustainable,  
13 it's the cleanest, and it solves the problem. So that's  
14 the answer to that question.

15           As far as the funding that you guys are doing,  
16 I must say, I would like it to be the original \$40  
17 million, but you know, you don't always get what you  
18 want, so I'm happy that you made a significant increase  
19 over the last couple of years, and so I thank you for  
20 your work and your consideration. And I think that it's  
21 a viable amount, okay? Like I said, I think we should do  
22 more, but it's a viable amount and it's something that is  
23 participatory by others. So that's number one.

24           Finally, there was a Governor's rep up there,  
25 and I had a question for him. I've got the --

1           CHAIRMAN WEISENMILLER:  Actually, unfortunately  
2  he's not here right now.

3           MR. STAPLES:  Oh, okay.

4           CHAIRMAN WEISENMILLER:  But I'm sure you --  
5  certainly you can get it on the record, but if you wanted  
6  to ask him directly, it's just following it up with him.

7           MR. STAPLES:  Okay, yeah.  I would, I would.  
8  Well, the only question was, is 100 percent renewable  
9  carbon-free hydrogen going to be the preference as it  
10 should be and reflected in future RFPs, okay?  The  
11 preference, not just incentive, but the preference, okay?  
12 No one has come out and said, "We want to fund renewable  
13 hydrogen because renewable hydrogen has not been getting  
14 any air play and any funding, so we want to fund  
15 renewable hydrogen.  So this RFP is going to be  
16 preference for renewables, but if no one shows up with  
17 renewable, we will fund the other alternatives, as well."  
18 But that's the thing that I wanted to ask because that's  
19 what I understood came out of that meeting with the  
20 Governor's Office, is that there's a preference for the  
21 renewable side.  So that was one question I had for him.  
22 And let me see, that's pretty much it because that's  
23 really where we want to go.

24           Someone else said how long before we will be  
25 able to get off of government funding and support for it.



1 Well, as soon as the automobile companies get enough of  
2 them systems on the road to where the stations become,  
3 again, a return on the investment, which will not happen  
4 shortly, it will take about five years, okay? My  
5 estimates show about five years from the time they start  
6 rolling these vehicles out to the time that we start  
7 doing it, and that's not bad at all when you consider it  
8 a fact that the government built the interstate highway,  
9 the government built the TVA and Hoover Dam and rural  
10 electrification, you know, that's what you need because  
11 you don't have a private sector willing to risk. As far  
12 as the risk is concerned, yes, people will risk money  
13 investing in it if they can see a cash flow and if they  
14 can see funding coming out, return on investment. If  
15 they can show over it -- I mean, there are several  
16 companies -- Mazuma Capital, Balboa Capital, several that  
17 I have spoken to that are more than willing to come in  
18 and start funding the financing and leasing the systems  
19 once they can see a track record of vehicle sales and  
20 fuel sales. That's when it's going to happen. Okay,  
21 enough said. Thank you very much.

22 CHAIRMAN WEISENMILLER: Okay, thank you.

23 MR. MCKINNEY: Great. Let's see, Alex Keras,  
24 are you available on the phone from General Motors?

25

1           MR. KERAS: Hi, Jim. It's Alex Keras from GM.  
2 I'll keep this brief because I agree with many of the  
3 comments that have been stated previously, but we believe  
4 the Investment Plan matches actually quite well with GM's  
5 sort of overall portfolio approach to advance technology  
6 and advance technology vehicles, we do believe it strikes  
7 a balance between meeting short term goals such as  
8 electrification and natural gas vehicles, as well as a  
9 support for CVRP, which we feel is crucial, but also with  
10 the longer term and the midterm goals as we're talking  
11 about right now with hydrogen. We feel that the funding  
12 for hydrogen aligns very well with the strategic goals of  
13 the State, the California Fuel Cell Partnership's  
14 Roadmap, as well as the Action Plan that we just heard  
15 from Mr. Crowfoot. So we all are basically repeating the  
16 same message, but the infrastructure is the critical path  
17 right now to reaching the goals of both the State and  
18 getting these vehicles on the road. Thank you.

19           MR. MCKINNEY: Great. Thank you, Alex. I  
20 think that concludes all the blue cards we had for public  
21 comment on this line item. Any last comments from the  
22 Committee Members? Okay, thank you for a good  
23 discussion.

24           Let's turn now to Natural Gas Fueling  
25 Infrastructure and the staff proposal is \$1.5 million.

1 Any comments from the Committee? Do we have  
2 any committee members on the phone who would like to  
3 comment? I have no blue cards, but are there any members  
4 of the public in the audience who would like to comment?  
5 And I'm going to assume no public comment on the phone?  
6 Okay, very good.

7 In terms of Infrastructure, E85 is not proposed  
8 for funding, but it is in this category. Esther Perman  
9 from Propel, I think you wanted to comment?

10 MS. PERMAN: Hi. Esther Perman with Propel.  
11 One of two companies in this industry, so not a large  
12 lobbying presence, sorry it's just me talking about E85.

13 E85 has previously been funded and is zeroed  
14 out in this draft, as well as the last draft, so I just  
15 wanted to basically state our preference that it goes  
16 back in, or at least that there's a strong signal that it  
17 will return in future plans, and also just say that I  
18 think at the last meeting I had submitted comments with  
19 some figures about E85 and carbon reductions and where  
20 we're at, and those were not reflected in the last draft.  
21 So I wanted to make sure that those get into the draft  
22 this time.

23 Just a quick update on Propel. We're now at, I  
24 think, 36 stations opening, three in construction right  
25 now and one will be open tomorrow, so we're moving

1 quickly, once again back up to speed, and plan on  
2 continuing to move that fast.

3           So we are actually meeting the goals of the  
4 grants, the previous grant that we're working under, and  
5 those are both the E85 and biodiesel stations. I believe  
6 we're at about 70 million pounds of CO<sub>2</sub> reduced so far  
7 among all our customers, and you can actually check what  
8 that exact number is on our website.

9           We're also with those stations bringing  
10 advanced biofuels to consumers through both our algae  
11 biodiesel test trial and then future renewable diesel and  
12 cellulosic test periods. So E85 is a really useful way  
13 to bring in those advanced biofuels involved. So I just  
14 wanted to reemphasize that. We're not yet to the point  
15 where we can be self-reliant, or reliant on private  
16 funding, so support from the State continues to be really  
17 important to both our investors and our continued growth  
18 plans.

19           So I just wanted to reemphasize again the  
20 comments that I submitted last time have some new numbers  
21 on E85 price to gas that are more updated than the 25  
22 percent -- or, actually, I think this draft says 5-15  
23 percent reduction in prices -- we're actually much higher  
24 than that, at a level that is significantly better to  
25 consumers. So I would appreciate if those were brought

1 into the draft, as well as some new test numbers from I  
2 think the L.A. County Sheriff that talk about what actual  
3 miles lost per gallon really is with the vehicles that  
4 they were testing. So, again, those are going to be  
5 lower than the 25 percent loss, so just updated numbers.

6 I wanted to reemphasize that we are a growing  
7 company with growing demand from consumers with existing  
8 flex fuel vehicle technology and really making a  
9 difference right now and planning to continue doing that,  
10 but need more State support. So, you know, just a signal  
11 that this funding will continue even if it's paused now,  
12 but it will continue later on. So, that's my points.  
13 Thanks.

14 MR. MCKINNEY: Great. Thank you, Esther. So I  
15 think that concludes discussion on Natural Gas Fueling.

16 We're now going to turn to the Vehicles  
17 category. So for Natural Gas Vehicle Incentives, the  
18 staff recommendation is \$12 million.

19 Are there any comments from the Advisory  
20 Committee Members?

21 MR. CARMICHAEL: Just briefly. Tim Carmichael  
22 with the Natural Gas Vehicle Coalition. This is  
23 consistent with the last few years of funding. We think  
24 it's very valuable in helping get more of these vehicles  
25 on the road, and we appreciate the staff's

1 recommendation.

2 MR. MCKINNEY: Thank you, Tim. Chris Shimoda.

3 MR. SHIMODA: I'd also like to support  
4 continued funding for this category. What you're seeing  
5 right now in the commercial truck sector is that a lot of  
6 your second generation, not first mover kind of fleets  
7 are looking at natural gas. These are the kind of fleets  
8 that are going to need some kind of incentive money to  
9 make this work, so I continue to support this.

10 MR. MCKINNEY: Thank you, Chris. Let's see, do  
11 we have any Committee members on the phone who would like  
12 to comment on this funding item? Oh, there you go. Hi,  
13 Ralph.

14 MR. KNIGHT: I just want to say again, great  
15 job to see the funding coming along. I think that, you  
16 know, the school bus is alive and well out here and I  
17 think that I'm getting ready to deliver a \$2 million  
18 project application to the Air District tomorrow that  
19 includes natural gas, along with other vehicles, too, but  
20 again, I think natural gas is a viable use for us in the  
21 school bus, it's a good clean fuel, price is right, and  
22 everything to keep us alive. And I think the more  
23 support that we can do for that the more we're going to  
24 keep the buses on the road and keep the kids out of the  
25 cars.

1           MR. MCKINNEY: Right. Thank you, Ralph. Any  
2 public comment here in the room? Charles is there any  
3 public comment on the phone? Oh, Dave Almeida.

4           MR. ALMEIDA: Hello everybody, again. David  
5 Almeida with California Center for Sustainable Energy.  
6 So first off, we support the investment in the natural  
7 gas program, but our comments are more focused on the  
8 actual way that the program is designed right now.

9           Starting in 2012, we launched a pilot program  
10 at the San Diego International Airport where we funded --  
11 we created a technology neutral metrics-based incentive  
12 program for ground transportation providers at the  
13 airport. And part of that program was to look at other  
14 incentives that are available to spread the adoption of  
15 alternative fuel vehicles. And working with ground  
16 transportation providers there, we realized that the  
17 majority of those providers had never heard of the buy  
18 down program, and those that are aware of it did not know  
19 how to access funds, and they did not know where to go to  
20 go through that. So we reached out to some of our  
21 networks in the Clean Cities Program, specifically East  
22 Bay Clean Cities, and they sent out an informal survey to  
23 Northern California Municipal Fleets. And the more than  
24 12 responses they got from their fleets realize that,  
25 again, they did not know about this program, they didn't

1 know how to access these funds, and some of the very  
2 similar issues that we've seen in San Diego.

3           So we put out another request to fleets across  
4 the state and received close to 12 responses, and we've  
5 submitted this to the docket. We've seen that there's  
6 consistent challenges. The knowledge of the program, a  
7 majority of these fleets, again, did not know about the  
8 program. When they did know about it, they didn't know  
9 how much funding was available, they didn't know where to  
10 go to access these vehicles.

11           And we also identified that the way that the  
12 program is structured right now where the funding goes to  
13 the manufacturer or the dealership, it causes some  
14 challenges with getting to the end user.

15           Some of the other challenges that we saw were  
16 related towards, again, the incentive distribution,  
17 timing of funding, program design, as well as perception  
18 that the total incentive was not received by the end  
19 user. And in some cases, we see that there are some  
20 examples anecdotally that this was not being done.

21           So we submitted these comments to the docket.  
22 We would like to work with the Energy Commission to try  
23 and figure out ways that we can fix this program, and we  
24 can remedy some of these challenges. And we're here and  
25 available to provide any sort of answers to your



1 questions.

2 CHAIRMAN WEISENMILLER: Okay, thank you. And  
3 12 represents what sample size? I mean, how many fleets  
4 are there?

5 MR. ALMEIDA: So we sent it out to about 45  
6 fleets across the state and then we received written  
7 responses from 12.

8 CHAIRMAN WEISENMILLER: Okay, thanks.

9 MR. MCKINNEY: Tim.

10 MR. CARMICHAEL: I can follow-up with staff,  
11 but I remember this concern about, you know, were the  
12 purchasers of the vehicles getting the incentive funding,  
13 or the benefit of the incentive funding coming up a few  
14 years ago, and it's my understanding that CEC implemented  
15 a paper trail to show or prove that the incentives were  
16 actually getting to the purchaser of the vehicles. You  
17 know, don't need to answer off the cuff, but it would be  
18 nice to know if that system is in place because that's my  
19 understanding and that was something that we talked  
20 about, I want to say, three or four years ago.

21 MR. MCKINNEY: Yeah, so I think, as most people  
22 appreciate, Andre Freeman is managing our Buy Down  
23 Program and we are having some pretty serious staff level  
24 discussions about possible remedies and what are some of  
25 the challenges right now with the current program.

1           Were there any other comments on this funding  
2 category?

3           MR. PROVENZANO: Yeah, this is James Provenzano  
4 with Clean Air Now. First, I have a question for staff.  
5 Of the \$12 million, is that broken up between heavy-duty  
6 and light- and medium-duty?

7           MR. MCKINNEY: No, it's not. Andre, do you  
8 want to expand on that answer, please?

9           MR. FREEMAN: There were previous investment  
10 plans that did have breakdowns by vehicle size and also  
11 breaking out school bus funding separately, however,  
12 we're now having that as a single line item, and then  
13 we'll determine break-outs as we release new  
14 solicitations for that funding.

15           MR. PROVENZANO: Okay, well, Clean Air Now in  
16 essence is in support of funding for natural gas  
17 vehicles. As the South Coast Air Quality Management  
18 District's MATES Studies point out, the big inventory as  
19 far as risk of contracting comes from air pollution, the  
20 portion we have to go after is, of course, the heavy-duty  
21 diesel. And so if we can displace heavy-duty diesel,  
22 we're all in support of that.

23           And also, the other question is related to all  
24 the categories, has there been any money put towards fuel  
25 cell electric drive train, R&D, or anything other than

1 hydrogen fueling stations? Has there been funding for  
2 other aspects of the fuel cell puzzle?

3 MR. MCKINNEY: Yes, through our program we  
4 proposed funding for two fuel cell bus demonstrations, I  
5 think one fell off, and we are now at one. And that's  
6 Ballard Designs, and they're currently being funded.

7 MR. PROVENZANO: But nothing has gone to the  
8 OEMs as far as fuel cell electric drive train development  
9 monies?

10 MR. MCKINNEY: That's correct.

11 MR. PROVENZANO: They have not asked for  
12 anything. Okay. Thank you very much.

13 MR. MCKINNEY: Okay, and I have a card here, I  
14 think, from Ben Winter, Transfer Flow, who wanted to  
15 comment on this funding area.

16 MR. WINTER: I'm not sure if this is the right  
17 funding area, but I just wanted to kind of make a little  
18 pitch on the propane side of it. I heard very early on  
19 that the allocations of that funding was in question  
20 because it wasn't being used, and I know that on your  
21 staff level there is some -- there's an acknowledgement  
22 of some problems on the way it's being handed out, we're  
23 being capped out, and I have quite a few dealerships --  
24 we're an integrator, we're an installer, so we deal on  
25 the sales side of it and the installation of the propane

1 systems in rural areas, farming, fleets. And we're being  
2 capped off. So there are quite a few vehicles that were  
3 not able to actually convert under that funding, so --

4 MR. MCKINNEY: Can I just ask you to clarify  
5 what you mean by "capped off," please?

6 MR. WINTER: The level -- the amount of  
7 manufacturers that build propane systems in the state are  
8 far less than a CNG manufacturer that's been around a  
9 long time. Propane auto gas, direct injected, is a new  
10 technology. It's proven, EPA has about 700 different  
11 platforms that they can sell this on, and we're running  
12 on three or four because of ARB, and we're working with  
13 WPGA trying to get that level of certification opened up  
14 and bring that technology into California. We ourselves  
15 have over 170 Executive Orders through the State, so the  
16 process is well known to us, both OEM and aftermarket.  
17 And, you know, not to belabor it and talk too much about  
18 it, but the process is very different between EPA and the  
19 ARB and, you know, \$50,000 for a certification out of  
20 California, \$500 for in California, same technology.  
21 We're limiting our growth, so that's one area we're  
22 trying to work on, enlarge on that, and then we can use  
23 that incentive. So if there are any questions or  
24 anything like that, we just -- we ask you to really  
25 rethink to not take away those funds, but to look at

1 restructuring it and allowing us to use the funds without  
2 limitations.

3 MR. MCKINNEY: Great. Thank you for your  
4 comment. So I think that concludes discussion on this  
5 funding item.

6 I want to turn to Light-Duty Plug-In Vehicles.  
7 The staff recommendation is a \$5 million transfer to ARB  
8 in support of the CVRP Program, or Clean Vehicle Rebate  
9 Program. Eileen.

10 MS. TUTT: Eileen at Cal ETC. Just a quick  
11 clarification. We totally support this transfer because  
12 the funding for this program is absolutely essential.  
13 The market certainty when people are buying these cars  
14 and they're told you may or may not get an incentive?  
15 That harms the market. So thank you for doing this.

16 I just wanted to clarify, I thought it was \$4.5  
17 -- is it actually \$5 million? Or is it \$4.5?

18 MR. MCKINNEY: \$4.5 was last fiscal year.

19 MS. TUTT: Okay, thank you.

20 MR. MCKINNEY: The current proposal is \$5  
21 million.

22 DR. AYALA: And on that note, I just want to  
23 acknowledge the Energy Commission and specifically the  
24 action you took this morning at your business meeting to  
25 finalize the interagency agreement to transfer to ARB the

1 \$4.5 million. We obviously fully supported the  
2 allocation as presented. We ourselves are taking some of  
3 our internal funding and redirecting an additional \$6  
4 million, and this was really a good news story because  
5 the program is so overly subscribed, and this is exactly  
6 the kind of investment that we want to be making. So,  
7 again, I just want to express support for the program, as  
8 well as thank the Commission for helping us out.

9 MR. MCKINNEY: Okay, any other comments from  
10 Advisory Committee Members? Charles, do we have any  
11 Committee Members on the phone? I have no blue cards.  
12 Are there members of the public who want to speak to this  
13 item? Anybody on the phone who would like to speak to  
14 this item?

15 Okay, very good. We'll continue on down the  
16 list here. Medium- and Heavy-Duty Advanced Vehicle  
17 Technology Demonstration. The staff recommendation is  
18 \$15 million. Comments from Committee Members? Tim  
19 Carmichael.

20 MR. CARMICHAEL: I'll defer to Mr. Knight.  
21 I'll follow him.

22 MR. MCKINNEY: Mr. Knight.

23 MR. KNIGHT: Tim. Again, I want to say thank  
24 you for that money in the heavy-duty vehicle sector.  
25 Again, we're applying tomorrow for hybrid electric

1 propane, so, I mean, we're doing a little bit of  
2 everything out there that there is. And I guess the more  
3 support that we can do, you know, I want to thank  
4 everybody, the PHIV vouchers that are out there is  
5 helping support that so that we can be able to do that to  
6 go to our hybrid systems and the electric bus. We hope  
7 to bring the second electric bus here to California, to  
8 get it in and get it up and get it going in very quick  
9 fashion, and I think that it's going to be a big success,  
10 too.

11 MR. CARMICHAEL: I just want to echo some of  
12 those comments and say that this is a very important  
13 piece of this program. For those that haven't looked at  
14 what you funded in the past, there are some very cool  
15 technologies and combination of technologies. You should  
16 be giving more to natural gas projects, but this is -- as  
17 a package, it's very defensible. You know, whatever  
18 technology you're interested in, there's some angle that  
19 is being supported by this line item and it's I think an  
20 incredibly valuable portion of the program overall.

21 MR. MCKINNEY: Eileen.

22 MS. TUTT: Thank you. This is Eileen at Cal  
23 ETC and I just want to say that I think this is a  
24 critical funding source and one of the things, as we go  
25 forth and defend this program in the legislative process,

1 this funding really really benefits low income and  
2 minority communities and for many members of the  
3 Legislature that's very important, certainly for my  
4 organization that's very important. So as we invest in  
5 these heavy-duty demonstration technology programs, there  
6 is a very clear advantage to the low income and minority  
7 communities. And I didn't include this in my written  
8 comments, but I think it might be worthwhile noting in  
9 the document and just considering that as -- I don't like  
10 too many metrics -- but certainly this one really does  
11 specifically benefit those most vulnerable. And I  
12 appreciate the amount of funding here. Thank you.

13 MR. MCKINNEY: Are there any Committee Members  
14 on the phone -- oh, Ralph, please.

15 MR. KNIGHT: One thing I forgot to bring up  
16 with this, I think that this opens the door to allow us  
17 to look at kits to repower buses because we not always  
18 can afford to go out and buy something shiny and new.  
19 So, I mean, to take that old bus and repower it, to be  
20 able to put it back on the road as an electric bus? That  
21 is not a farfetched thing. We're seeing some examples  
22 that are going to be hitting the roads here very shortly  
23 over the next 45 days or so, so I think that we need to  
24 keep that door open to be able to do that.

25 MR. MCKINNEY: Did we have a Committee -- oh,



1 Chris Shimoda.

2 MR. SHIMODA: Yeah, I also wanted to voice  
3 support for this particular section. I think the  
4 narrative section in the full report is very good. The  
5 basics are that a lot of the technologies for the on road  
6 heavy-duty sector are not where they need to be, so we'd  
7 like to see more support for R&D on this.

8 MR. MCKINNEY: Do we have any Committee Members  
9 on the phone, Charles?

10 Okay, turning to blue cards in the room,  
11 Dipankar Sarkar from South Coast.

12 MR. SARKAR: Thank you very much, Jim. Good  
13 afternoon. Thank you for giving me the opportunity to  
14 provide my testimony. My name is Dipankar Sarkar and I'm  
15 the Technology Demonstration Manager at the South Coast  
16 Air Quality Management District.

17 We have worked closely with CEC over many years  
18 and we are very appreciative of the grants and support  
19 that we have received in the area of clean technologies,  
20 especially in the areas of near zero and zero emission  
21 technologies, which includes natural gas, hydrogen, and  
22 electric vehicle charging infrastructure.

23 The development and deployment of these  
24 technologies is important to us so that we can meet  
25 Federal Clean Air Standards. Our District has provided

1 cost sharing for fueling infrastructure, including  
2 hydrogen stations, and we'll continue to do so in the  
3 future.

4           In the South Coast Air Basin, oxides of  
5 nitrogen and particulate matter emissions from medium-  
6 and heavy-duty vehicles contributes significantly to the  
7 overall basin emissions, and are in the top 10 emission  
8 categories. We support and appreciate CEC's revised  
9 Investment Plan to significantly increase the funding for  
10 demonstration projects in the medium- and heavy-duty  
11 vehicle categories. Thank you.

12           MR. MCKINNEY: And let me just say on behalf of  
13 staff, we deeply appreciate the collaboration we have  
14 with the South Coast Air Quality Management District on  
15 these subject areas. Bill Elrick, Fuel Cell Partnership.  
16 This is the category you identified, right?

17           MR. ELRICK: This is, surprising. Bill Elrick,  
18 the California Fuel Cell Partnership. What I wanted to  
19 do was in this category raise for future consideration  
20 fuel cell and hydrogen applications there are on the road  
21 and out there, locomotives, Class 8 trucks, transit  
22 buses, just to name a few, and on this last one, transit  
23 buses, wanted to submit following up to our light-duty  
24 roadmap last year, we have available now the roadmap for  
25 fuel cell electric buses in California. We want to

1 formally submit it to the docket, we'll do that  
2 electronically, as well. And what this is, similarly,  
3 this is the pathway to commercialization of fuel cell  
4 electric buses in the State of California.

5           The strategy is focused on two centers of  
6 excellence within the state. These are locations where  
7 we're looking at having deployment of 40 fuel cell  
8 electric buses in each location. They would have the  
9 supporting infrastructure, the maintenance facilities, 12  
10 years of operation, and these will help meet the DOE and  
11 the DOT 2016 targets that have been laid out on  
12 performance, durability, and cost. And these targets  
13 that we're looking to hit with these centers of  
14 excellence are the last targets to hit before full  
15 commercialization. So these are really important to  
16 bridge us from R&D and demonstration to that last three  
17 before we can be one-on-one competitive with existing  
18 technologies today.

19           I think I want to also point out that this  
20 supports the Governor's Action Plan that we heard about  
21 this morning, where it also calls out in 2020 public  
22 transit ZEV -- zero miles public transit. So we're happy  
23 that these are all coalescing around the same time. And  
24 if it pleases, I'm sure we could give a more detailed  
25 presentation on the subject in the future, but we'll

1 submit this to the docket and just wanted to have it  
2 there for future consideration.

3 MR. MCKINNEY: Great. Thank you, Bill. Mr.  
4 Wiley or Willey, did you want to speak now? Or did you  
5 want to wait until later? Because I think you were  
6 covering a couple of topics. Okay, we'll save you for  
7 then, thank you. Okay, were there anymore comments? I  
8 don't have any more blue cards for this category.  
9 Anybody else on the phone? Okay, let's keep moving here.

10 Switching now to Emerging Opportunities and  
11 Federal Cost Sharing, the staff recommendation is \$3  
12 million. Any comments from Committee members? John  
13 Shears.

14 MR. SHEARS: Yeah, I'm not so sure if it's so  
15 much of an emerging as it is an existing opportunity, and  
16 I understand comments were submitted by colleagues on the  
17 first draft of the Investment Plan, and it's related to  
18 exploring the possibility of setting up a tire efficiency  
19 program, given all the work that's been done federally  
20 and in Europe. And I know the Energy Commission has done  
21 a lot of work on tire efficiency, so whether as part of  
22 this Investment Plan, or the future Investment Plans, I'm  
23 just wondering if the Energy Commission is open to  
24 considering exploring that as a sub-program within this.  
25 It's got broad support within the environmental community

1 and it looks like it's -- there are products on the  
2 market right now that are marketed by the manufacturers,  
3 you know, to improve fuel mileage, etc. etc., so it's a  
4 low hanging fruit, there's an opportunity there to  
5 potentially gain some tons of emissions reductions as a  
6 result of a program like that.

7 MR. MCKINNEY: Okay. Thank you, John. Let's  
8 see, any other comments from Committee Members on  
9 emerging opportunities?

10 MR. BARRETT: This is Will Barrett with the  
11 American Lung Association. It's an idea that we're  
12 looking into, as well and will continue to work and  
13 evaluate with our colleagues in the environmental  
14 community that John mentioned.

15 MR. MCKINNEY: Okay, thank you. Charles, do we  
16 have anybody on the phone? No. I have two blue cards  
17 here. The first is from Chris Perkins of SkyTran. Are  
18 you present or on the phone?

19 MR. PERKINS: Good afternoon. Can you hear me?

20 MR. MCKINNEY: Very well. Please proceed.

21 MR. PERKINS: Yes. I'm Chris Perkins and I'm  
22 Executive Vice President with SkyTran, Inc. We're  
23 developing an automated electric vehicle PRT system at  
24 the NASA Ames Research Center in Silicon Valley. We  
25 support continued funding of the emerging opportunities

1 category because we think the program is wisely included  
2 in this category because it's essential, I think, to  
3 bringing transformational disruptive technologies like  
4 ours to market.

5           Currently, we're in advanced discussions with  
6 the Federal Transit Administration about funding a  
7 demonstration of SkyTrans' Automated Electric Vehicle  
8 System. Our question is, has a process been put in place  
9 to consider potential matching opportunities like this  
10 with FTA?

11           MR. MCKINNEY: We are continuing to evaluate  
12 these types of requests on a case-by-case basis and we  
13 are working with our Commissioners to develop a more kind  
14 of formal review system. But I will say -- and Chairman  
15 and Commissioner Douglas, chime in as well -- that one of  
16 the goals of this program was for it to be flexible in  
17 this funding category, to be available to meet DOE  
18 solicitations. So in that sense, we wanted to be  
19 somewhat flexible.

20           MR. PERKINS: Okay, and when you say D -- how  
21 about DOT through FTA?

22           CHAIRMAN WEISENMILLER: Well, that part again  
23 is sort of a detail we'll get to, but I think the major  
24 thing that we're looking for, you know, from time to time  
25 certainly people will approach us and say, "I'm

1 submitting something to the Federal Government, and is  
2 there a potential for a match?" And at that point the  
3 question becomes, how do we evaluate, you know, there may  
4 be five different proposals in California, and typically  
5 this is sort of a last minute thing, so we're not quite  
6 in a way to evaluate which of those five to say yay or  
7 nay to. So at least in other programs, what we've tended  
8 to say is go forth, do good things, and if you get the  
9 Federal match, come back to us, and try to go in that  
10 direction. But certainly, again, this is an area -- we  
11 have funded at least one project under this category, but  
12 again, it is certainly a very well known California  
13 institution having -- actually a couple -- having pretty  
14 innovative technology that ultimately was selected by the  
15 Feds.

16 MR. PERKINS: I see. Okay. Well, then I  
17 guess, as you say, it's a case-by-case basis, then?

18 CHAIRMAN WEISENMILLER: Yeah.

19 MR. MCKINNEY: Great. Thank you for your  
20 comment. Tim, did you have a comment here? I'm watching  
21 the clock for you. How many -- how much time do you  
22 need? Okay. Let me take one more public comment and  
23 then we'll turn to you. Ed Pike, Energy Solutions.

24 MR. PIKE: Hi. My name is Ed Pike and I'm the  
25 Transportation Lead for Energy Solutions, a California

1 energy efficiency company for those of you who don't know  
2 me already. And we've seen how building energy  
3 efficiency programs, you know, many of which the CEC has  
4 of course been a leader in developing, have really  
5 transformed the residential building, or commercial  
6 building sector, including the end use buildings, and  
7 really been a leader at the national and the  
8 international level.

9           And Energy Solutions believes that well-  
10 designed transportation incentive programs focused on the  
11 application of advanced technology for the end use  
12 vehicle fleet can similarly transform the market. For  
13 example, incentivizing energy efficient advanced  
14 technology for passenger vehicle replacement tires is one  
15 opportunity, as mentioned by several folks at the table,  
16 and I appreciate that. With the AB 32 Scoping Plan, it  
17 calls for three million metric tons of greenhouse gas  
18 reductions from energy efficiency replacement tires and  
19 engine oil and, you know, ARB has always done really  
20 impressive important programs in a lot of areas on  
21 transportation, and I think this could potentially help  
22 get the ball rolling in this area, as well. And so tire  
23 energy efficiency, again, that's one very promising  
24 opportunity to use better technology in the existing  
25 fleet; engine oil is another opportunity that seems



1 promising to take a look at.

2           And I think there's an opportunity to focus on  
3 -- to potentially target disadvantaged communities  
4 because they're more likely to be using older vehicles  
5 running on replacement tires, for instance, to be more  
6 cost sensitive and receptive to a potential incentive  
7 program. And of course it could be applied statewide  
8 eventually, as well, like the many successful programs  
9 that the CEC and PUC and utilities and others have been  
10 instrumental in having California be a leader on.

11           So we just wanted to encourage consideration of  
12 this idea for -- I don't know if it would fit best under  
13 Emerging Opportunities or Advanced Technology Vehicles,  
14 looking at the end use vehicle fleet, but that seems like  
15 a really good opportunity to help move the market  
16 forward, look for opportunities to leverage other  
17 potential funding sources in addition to AB 118. And so  
18 thank you for the opportunity to provide comments. We  
19 did have some formal comments with additional details  
20 that we submitted earlier, and I'm also happy to take any  
21 questions that you have.

22           MR. MCKINNEY: Okay, thank you very much. Tim  
23 Carmichael has to leave at 3:00, so he wanted to comment  
24 on a few more line items, I believe.

25           MR. CARMICHAEL: Thank you very much, Jim,

1 members of the Committee. A couple things. We're  
2 supportive of the rest of the line items on the chart.  
3 But I wanted to raise two issues that haven't been  
4 raised, or one has been touched on. But in the Executive  
5 Summary, the Plan references the Governor's Zero emission  
6 Vehicle Program and the Clean Air Vision document. A  
7 couple people have mentioned that, you know -- have  
8 talked about it, but not quite as directly as this -- if  
9 you read the Governor's Zero emission Action Plan  
10 objectively, I believe the weakest link is heavy-duty  
11 goods movement transportation. And it's a very important  
12 link. I'm not talking about numbers of vehicles, I'm not  
13 talking about funding, I'm talking about emissions in the  
14 State of California, heavy-duty trucks, locomotives,  
15 construction equipment, and it's a big piece of our  
16 problem.

17 And right now, and I'm not taking anything away from  
18 the Fuel Cell Partnership or other suggested investment  
19 strategies going forward, but right now we don't have  
20 solid zero emission technologies for those applications.  
21 And so I want to highlight that. I know ARB has talked  
22 about this and thought about this, I know some of the  
23 industry folks have, but I don't know that CEC has, and  
24 since you're referencing it in the beginning of this  
25 document, it's important for the staff to be aware, you

1 know, it's solid when it comes to light-duty vehicles,  
2 it's relatively weak when it comes to heavy-duty  
3 vehicles.

4           On the Clean Air Vision document, this is a  
5 small detail to some, but a big detail to my membership,  
6 and that is a draft document and it's not clear that ARB  
7 is going to finalize that document. If you want to  
8 continue to reference it, I would ask you to just call it  
9 a draft document and, you know, I'll put that in my  
10 written comments, but I'm raising it now because it's out  
11 there in a lot of forums, and it's really not a finalized  
12 document given a lot of comments that were received in  
13 the fall. So that's one issue.

14           The second issue is on a completely different  
15 plane. We have two new Commissioners coming in and I  
16 know sometime this spring, you've got to make a decision  
17 who is going to be the lead on transportation, but I  
18 wanted to raise right now that, from my vantage point, it  
19 really makes sense for one of the two of you to be the  
20 Lead Commissioner through the finish of this plan because  
21 you've had the benefit of sitting through these  
22 discussions and presentations, whereas the other members  
23 haven't. And so whether or not you're going to be a  
24 transportation lead going forward for this plan, I really  
25 think it makes sense for one of you two to kind of carry

1 the torch to the end of this plan, and I wanted to make  
2 that pitch in public because I think the other  
3 Commissioners should be thinking about that, and I want  
4 you guys to be thinking about it, as well.

5 CHAIRMAN WEISENMILLER: No, it's a good point.  
6 I mean, in the area of siting cases, one of the things  
7 which we try very carefully to do, and obviously with  
8 two-person committees in siting, people come and go, and  
9 we always try to have the Commissioner or Commissioners  
10 who are going to be writing the final decision to have  
11 been at the evidentiary hearings.

12 MR. CARMICHAEL: Thank you. And I apologize  
13 for having to leave early today.

14 CHAIRMAN WEISENMILLER: That's fine.

15 MR. CARMICHAEL: Thank you.

16 MR. MCKINNEY: Thank you, Tim. Okay, going  
17 back to Emerging Opportunities, I also have a blue card  
18 for Dave Almeida.

19 MR. ALMEIDA: Hi, everybody. So I'll be very  
20 quick. I don't know if this fits within the Emerging  
21 Opportunities, but I wanted to bring it up. We have  
22 recently submitted comments about a strategy to spur  
23 adoption of hybrid and alternative fuel vehicles within  
24 the State's taxi fleet, and so this is building off of  
25 that pilot project that I spoke about previously in San

1 Diego where we were able to see an increase from zero  
2 percent to 30 percent in hybrid adoption, in less than 10  
3 months because of an incentive program focused on those  
4 folks.

5           This is technology that is commercially  
6 available; however, we haven't seen it being adopted  
7 within taxi fleets because there are a number of issues  
8 related towards the increased cost of these vehicles and  
9 some barriers to financing.

10           We were able to remedy a lot of those through  
11 education and outreach to a lot of these stakeholders.  
12 Since administering that program, we've built a coalition  
13 of taxi operators, cities, airports, and other ground  
14 transportation providers throughout the state. And we  
15 have through that coalition built a proposal which we  
16 submitted to the docket, which outlines a three-year  
17 strategy with a marginal incentive of around \$1,500 per  
18 vehicle. And this is to really spur this adoption on  
19 these vehicles out of the 9,000 taxis that are available  
20 right now.

21           We see that this could have -- it's a shovel-  
22 ready project and could be implemented within the next  
23 few months, and we can see almost immediate reductions  
24 within greenhouse gas pollution, as well as criteria  
25 pollution.

1           But the other aspect of this is there is huge  
2 economic benefit. Most taxi operators earn around  
3 \$30,000 per year, so the increase in fuel savings results  
4 in an average of around \$10,000 per year, so this is  
5 significantly increasing their take-home pay.

6           So I know that this is kind of a departure,  
7 investing within hybrid vehicles, but I encourage the  
8 Commission to review the proposal.

9           CHAIRMAN WEISENMILLER: Okay, thanks. Let's  
10 move on.

11          MR. MCKINNEY: Thank you, David.

12          For Manufacturing, the staff recommendation is  
13 \$10 million. Is there any discussion by the Advisory  
14 Committee?

15          MR. STAPLES: Is there any way I can make a  
16 comment before I have to leave?

17          MR. MCKINNEY: I'm sorry, who is speaking  
18 please?

19          MR. STAPLES: This is Paul Staples with HyGen  
20 Industries, it's on the last issue, Emerging  
21 Opportunities.

22          CHAIRMAN WEISENMILLER: If you make a very  
23 brief comment, just keep it to a minimum?

24          MR. STAPLES: Okay, I will. Paul Staples with  
25 HyGen Industries. The last gentleman that was up who

1 spoke about there's really nothing viable for heavy-duty  
2 vehicles, I would say take a look at Vision Motors.  
3 Maybe what we could do is find a way to put some funding  
4 in for hydrogen fueling for heavy-duty vehicles. They  
5 take a lot more quantity of fuel and it takes a bigger  
6 system to put in than what will be starting out with  
7 these systems that we're putting in, so maybe that would  
8 be a way to deal with the fuel cell electric trucks.  
9 These are similar tractor trailer trucks that can carry a  
10 load of anything that a regular diesel truck can carry,  
11 and the only thing is that fueling operations, they go  
12 into any one of these stations that are out there now and  
13 they can take pretty much all of what they produce, you  
14 know, whether it be renewable or what's being delivered.  
15 So that's the approach that I think is worth dealing with  
16 for heavy-duty vehicles. And to that, I leave the rest  
17 of you and I'd just like to make one quick statement  
18 about workforce training -- increase it. They are going  
19 to need --

20 CHAIRMAN WEISENMILLER: Thank you.

21 MR. STAPLES: -- well-trained students in  
22 colleges and engineers to be able to --

23 MR. MCKINNEY: Thank you, Mr. Staples.

24 MR. STAPLES: -- to handle maintenance and  
25 operations. Thank you very much and you have a good day.

1 Bye-bye.

2 MR. MCKINNEY: And just to clarify for the  
3 record, fuel cell drive medium-duty and heavy-duty trucks  
4 are eligible, they were eligible for the last  
5 solicitation and will continue to be eligible going  
6 forward. Let's see, I think we were discussing  
7 manufacturing and there were no comments in the comments  
8 from Committee Members. Committee Members on the phone?  
9 Members of the public present here? Any members of the  
10 public on the phone, Charles?

11 Okay, turning to Workforce Training and  
12 Development, the staff recommendation is \$2 million.  
13 We'll start with Peter Cooper.

14 MR. COOPER: Yes, so thank you for this time.  
15 ETP really supports -- we appreciate the work of your  
16 staff on this issue, and it's been a little bit  
17 complicated and we support the recommendation for \$2  
18 million.

19 One of the things that is mentioned in the  
20 Draft document is possible funding from Prop. 39. We  
21 think that's still very much in question, where that's  
22 going, so I'll give you some comments off line via email  
23 about how we might want to rephrase that so it does  
24 reflect that this funding from Prop. 39 is not for sure,  
25 it's still in question.



1           And then I also just wanted to mention that one  
2 of the difficulties we've had with marketing the funding  
3 availability, the 118 funding dollars, is that each year  
4 we have to get spending authority to encumber contracts  
5 and enter into new contracts. This usually takes between  
6 four and six months, and so this has really hurt our  
7 ability to bring more contracts in through our process.

8           So what we've done is we're engaged in what's  
9 called a Budget Change Proposal. And we are proposing  
10 that \$3 million -- well, that ETP is giving spending  
11 authority for \$3 million of 118 funding on an ongoing  
12 basis so that at least we have that base amount, and we  
13 can go ahead and be in the field talking to employers and  
14 bringing in contracts to our monthly panel with that \$3  
15 million. And then if there's more later, that's good,  
16 but if not at least we can keep the pipeline open.

17           So I just want to let you know we're working on  
18 that, there's going to be a budget hearing next week and  
19 this will be brought up in that context. We don't expect  
20 any opposition to it; it makes a lot of sense for the \$3  
21 million continuous spending authority. So that's all I  
22 have to say at this time.

23           MR. MCKINNEY: Great. Thank you, Peter. Anne.

24           MS. MCMONIGLE: Hi. Anne McMonigle, California  
25 Labor Federation. I definitely second what Peter just

1 said and again would like to express our thanks for the  
2 projects we've been able to undergo, we have three major  
3 training projects going with the Sacramento Transit  
4 Authority, the Santa Clara Transit Authority, and with  
5 the Transit Authority in Los Angeles.

6 But my question is more for the staff. I know  
7 that in the last Investment Plan, that money was given to  
8 EDD, which I think they then gave out to the Community  
9 College Centers of Excellence to do a job scan and I was  
10 wondering where the status of that was and if it was  
11 available for us to access now, or when it will be  
12 available?

13 MR. MCKINNEY: Let me look here. John, do we  
14 know the status? Okay, so we'll get back to you with  
15 that.

16 MS. MCMONIGLE: Great.

17 MR. MCKINNEY: Thanks for the question. Any  
18 other comments from Advisory Committee Members? Members  
19 on the phone? Okay, I think turning to the public here,  
20 Chad Willey with Phoenix Hybrid.

21 MR. WILLEY: Thank you. Good day, ladies and  
22 gentlemen. My name is Chad and I'm from Phoenix Hybrid  
23 Electric. We're a new company just, well, general  
24 partnership. We just started two weeks ago to repair and  
25 convert Class 1 through Class 8 vehicles.

1           Clean Tech, which started in August of last  
2 year and ended in December of last year, December 28th,  
3 was the first ever CEC authorized electric vehicle  
4 technician course, and it was a success, we had 40  
5 graduated students and most of them were mechanics,  
6 engineers, and I was an architectural engineer and  
7 mechanical engineer who went through the course.

8           I wanted to thank the CEC for giving that money  
9 for our school and allowing us to convert a Porsche and a  
10 Jaguar, so we got to work with the automatic transmission  
11 and the manual transmission, and figure out how to do a  
12 direct drive so we don't have to worry about any of that.

13           MR. MCKINNEY: So just to clarify, you're  
14 saying that you're a beneficiary of some of the training  
15 money that we put out there. Is that --

16           MR. WILLEY: Yes, sir.

17           MR. MCKINNEY: That's great.

18           MR. WILLEY: The training gave me all the  
19 information and knowledge to be able to ask the correct  
20 questions of the industry and the Internet to, you know,  
21 find the real answers to our problems. So that's the  
22 whole problem -- if you don't know the questions to ask  
23 in an industry, you'll never find the answers and  
24 understand what the answers are when you do find them.

25           This training taught Jordan and I, like I just

1 said. We also wanted to acknowledge our teacher, Mr.  
2 Lloyd Tran, he's an engineer out of NASA and is in the  
3 Nanotechnology Division working on the air battery, which  
4 that should surpass any energy than any current battery  
5 has or any other biofuel that we currently use besides  
6 gasoline and something else that he said -- ammonia, I  
7 think it was.

8           Anyways, this training has allowed us to for  
9 the last six months talk to different EV manufacturers  
10 across the world and across the United States, and we've  
11 developed a kit that can be applied to any Class 1  
12 through Class 8 vehicle. We've also made contracts with  
13 a company in Pomona that delivers ion batteries for a  
14 super cheap price. We put together a plan that can  
15 convert 20 Class 8 vehicles every eight months, ramping  
16 up every 10 vehicles every year up to five years, where  
17 we'll be doing 300 vehicles a year, converting Class 8  
18 vehicles.

19           Currently, Jordan is working on a liquid air  
20 oxygen turbine-based self-contained energy source so we  
21 can charge our batteries while we need to, or we can  
22 charge up, so we're hybrid electric, if you will.

23           We feel that more money needs to be given  
24 towards the training and development taking it out of  
25 hydrogen. Anything that we have to create using

1 electricity is a wasted step, and we should just stick  
2 with what we have now and \$2 million for future  
3 development of hydrogen would be fine. We need a better  
4 infrastructure for the current EVs that are out in the  
5 market and the future one million vehicles that we're  
6 going to put out on the market.

7           Jordan and I have tried to start to talk to  
8 mechanics in the field and start to try to do some kind  
9 of a compatible deal that we're using our technology to  
10 train mechanics to use the high voltage electricity,  
11 which is mainly the killer, so we need money to go out  
12 and do the infrastructure. We only have 30 people now,  
13 so we need hundreds in the future. So we would like \$10  
14 million taken out of hydrogen, \$5 million put down into  
15 the workforce and training development. Also, we need  
16 money to --

17           CHAIRMAN WEISENMILLER: Actually, could you  
18 speed it up?

19           MR. WILLEY: Oh, sorry. Also, we would need  
20 some kind of infrastructure to do the first responder  
21 corps, so if there's an accident with electric or hybrid  
22 vehicle, somebody from our team would go out there and  
23 just charge the battery so the fire truck guys wouldn't  
24 get electrocuted. So there's a bunch of different fields  
25 that need to be thought about within the training and

1 development, and that's why we need more money. Thank  
2 you. Appreciate everything you guys are doing. And  
3 everybody else who is in the industry that's doing  
4 anything for the planet, we're all for it, and we'll help  
5 in any way we can.

6 CHAIRMAN WEISENMILLER: Great. Thank you.

7 MR. MCKINNEY: Great. Were there anymore  
8 comments in the room or on the phone on workforce  
9 training?

10 Okay, let's turn to Market and Program  
11 Development. And \$1.5 million is the staff  
12 recommendation for Regional Alternative Fuel Readiness  
13 and Planning. Are there any comments from Committee  
14 Members?

15 MS. TUTT: Thank you, Jim. Eileen at Cal ETC.  
16 I think this is one area that is very underfunded. I  
17 will say that, as we deployed electric vehicles, the  
18 regional money from the Energy Commission and the DOE  
19 made all of the difference. Actually making sure that  
20 local government is prepared to support the  
21 infrastructure needed for these vehicles is pretty  
22 critical. The money was oversubscribed; I know this  
23 because I know people who didn't get the money, I didn't  
24 read it in the report. But we do need more, especially  
25 if we're going to add hydrogen and we're investing \$20

1 million in new hydrogen stations, we have to provide  
2 money to the local governments to help them prepare and  
3 get ready for the deployment of those stations, as well.  
4 And so we're still working on -- I mean, electricity is  
5 available everywhere, everybody is familiar with it, you  
6 can plug it in at home, you can plug it in at work, all  
7 that kind of thing, it's there. But I will tell you that  
8 the local government outreach and the funding from the  
9 Energy Commission, and the funding from the Department of  
10 Energy made all the difference for Plug-In Electric  
11 Vehicles. And I believe now this pot has been expanded  
12 so it's not just for electric vehicles, it's also for all  
13 alternatives, and I'm just going to say I think -- we  
14 said in our comments, I think we asked for \$3 million --  
15 I'm glad you put an additional .5, but this is not going  
16 to be enough money and local governments are going to be  
17 absolutely critical as we deploy more electric vehicles  
18 and hydrogen infrastructure.

19 MR. MCKINNEY: And just to sort of clarify for  
20 everybody, so you're recommendation in your docketed item  
21 was \$3 million? Right. Thank you. Any other comments  
22 from Committee Members? On the phone? Are there members  
23 of the public? I've got a blue card for Dave Almeida.

24 MR. ALMEIDA: I think we just support it, and I  
25 would echo Eileen's comments, there's a great deal of

1 need for greater funding. Thanks.

2 MR. MCKINNEY: Any members of the public on the  
3 phone?

4 Hearing none, we will now turn to General  
5 Comments. I have blue cards from Rebecca Boudreaux, and  
6 then Jamie Hall. And then Eileen Tutt.

7 MS. BOUDREAUX: Hi. I'm Rebecca Boudreaux,  
8 President of Oberon Fuels. And I just wanted to discuss  
9 our support of the biofuels production and the funding  
10 that's being offered there and also, as mentioned by Air  
11 Resources Board, the continuing challenge of creating  
12 diesel substitutes.

13 And our focus as a company is producing  
14 dimethyl ether, DME, as a diesel replacement and using  
15 renewable feedstocks such as animal food waste. And  
16 there are a lot of options that people are looking at,  
17 but this is very near term: we'll be producing fuel in  
18 May in the first phase of our project and the second  
19 phase will come on line next year.

20 So we just want to offer our support of that.  
21 And also, when discussing -- again, on the fuel  
22 production side, of how you define commercialization so  
23 there's some discussion on the projects where things are  
24 in the development stage, commercialization stage, and so  
25 forth, one of the things I want to point out is this



1 trend in fuel production of doing small scale distributed  
2 fuel production, so small scale is actually full scale,  
3 and so how we define commercialization is something that  
4 we have to address because, as this trend is emerging,  
5 because of things like climate change and some of the  
6 events that are happening with hurricanes, earthquakes,  
7 and everything is very large-scale, then these things get  
8 shut down when there are events like that.

9           So looking for how we define fuel production  
10 and what's commercialization stage is just something that  
11 we wanted to bring to the forefront and have that  
12 discussion now.

13           CHAIRMAN WEISENMILLER: Thank you.

14           MR. MCKINNEY: Thank you. Let's see, Jamie  
15 Hall.

16           MR. HALL: Thank you. I'm Jamie Hall, Policy  
17 Director for CalSTART. I just want to make some quick  
18 overarching comments and thank the staff and the Advisory  
19 Committee for their work to date.

20           This program is really critical for all of our  
21 State policy goals, and I like coming to these meetings  
22 because there are all these great success stories out  
23 there and it sort of reminds me of all the good stuff  
24 that we're accomplishing here. This is a crucial part of  
25 our overall climate and air quality policy mix in

1 California for both AB 32, Low Carbon Fuel Standard, Zero  
2 Emission Vehicle Program, and our Health-Based Air  
3 Quality Goals, as Bonnie mentioned earlier.

4 I know you've really got to deal with a lot of  
5 timelines and targets for different pollutants and a lot  
6 of different technology needs, and it calls for a very  
7 balanced portfolio approach, and we think that you're  
8 doing a good job balancing all these competing priorities  
9 in both near term and long term investments.

10 The plans have been getting better and better  
11 over time, as Bonnie mentioned earlier, and we've got  
12 natural gas and biofuels on sort of the near term  
13 opportunity side, very important for Low Carbon Fuel  
14 Standard. As Eileen has been mentioning, zero emission  
15 miles, really a key area to target, and we support all  
16 the investments that have been mentioned today. I just  
17 didn't want to get up again and again, sort of wanted to  
18 sum it all up at once; but the hydrogen investment, very  
19 important, as well as the electric vehicles.

20 The clean trucks and buses, there was broad  
21 support for that here today, we really think that's an  
22 important area and we've laid out as part of our CalHeat  
23 process sort of an investment roadmap for California in  
24 the truck space.

25 I agree with what's been said today about the

1 air quality benefits and sort of disadvantaged community  
2 benefits of those investments, and the Proterra bus that  
3 was outside, if anyone got to ride in it, that is an  
4 example of what we can do in a big vehicle. It's pretty  
5 cool.

6 Manufacturing and workforce training, very  
7 helpful to ensure that we've got in-state jobs and then  
8 the market development that we were just talking about,  
9 we support as well. So just across the board, it's a  
10 tough balancing act, we think you're doing a good job and  
11 that this process has been getting better and better over  
12 time. Thank you for the opportunity to participate.

13 MR. WARD: Good afternoon. I'm Peter Ward.  
14 I'm with Alternative Fuels Advocates. I've been -- I'm  
15 pretty familiar with the program, I was the Program  
16 Manager for three and a half years, it's good to see all  
17 the familiar faces again. And I've been sitting over  
18 there with my fellow exile. We've been in exile for  
19 about a year, but we're not longer there, and so I'm  
20 happy to be able to lend my voice to the process after  
21 waiting one long year -- but you're not anymore.

22 CHAIRMAN WEISENMILLER: A graduate, that's all.

23 MR. WARD: I will try and be brief. And I  
24 wanted to provide comments from kind of an overview  
25 standpoint from the experience that I have had as the

1 Program Manager and for the program.

2 I'm pleased to see that there's an awful lot of  
3 work still going into these Investment Plans and I think,  
4 you know, the staff is to be lauded for all the hours  
5 that they put in on this because it is unseen by this  
6 group, but it certainly happens on a day to day basis.

7 I'd like to speak on four different quick  
8 subjects. One is the metrics that was raised at the  
9 previous meeting. And I really strongly support that and  
10 did from the beginning of the program. I think we do  
11 have to have an intelligent way of allocating these funds  
12 forward. In looking back at the statutory requirements  
13 in AB 118, the top three goals were reducing petroleum,  
14 reducing GHG, and reducing criteria emissions in the  
15 short term. And the short term was emphasized for this  
16 program, not so much for the ARB's component to 118,  
17 which is more kind of research. We also have a research  
18 transportation program here in the former PIER Program.

19 I think it's really important that we stress  
20 those goals as we go forward, especially in this critical  
21 year for potential reauthorization, so that the  
22 Legislature sees we're staying to the goals that were in  
23 the original statute.

24 I've always thought from the beginning of my  
25 tenure here that it's quite important that we inform this

1 program as best we can, that means all sources of  
2 information come in and there are several that we are  
3 contracting with -- I still say "we," I'm really not part  
4 of the Energy Commission anymore, but I still feel that I  
5 am.

6           The U.C. Davis Next Steps, the U.C. Irvine  
7 STREET Program, these things are very helpful in  
8 informing the program and I think they should be leaned  
9 on. In addition, and maybe to a larger extent, the  
10 National Renewable Energy Laboratory fits hand and glove  
11 with many of the ideals that are set up for this program,  
12 and I think we could utilize that in many different  
13 areas, and that would also help with providing the  
14 metrics.

15           I hoped in the beginning of this program that  
16 we would be able to perform market assessments for each  
17 one of the fuels and vehicle technologies to see how they  
18 can progress, what is needed in each, and part of that  
19 would be a market risk analysis: are these vehicles and  
20 fuels going to reach fruition in the market? I really  
21 think that hasn't really been accomplished yet. I think  
22 any portfolio manager would be doing a risk analysis for  
23 all of these technologies right away, rather than just  
24 continuing on a path because we "need it," we need the  
25 goals to be achieved. If it's air quality or petroleum

1 reduction, those things are important, but I think we  
2 need to know whether or not our investments are actually  
3 going to manifest in a viable and productive commercial  
4 market.

5 I also think the program needs to maintain the  
6 transparency that it has enjoyed in the past.  
7 Allocations should be based on publicly available  
8 information and I note that there are some aspects in  
9 this Investment Plan that are not shared with the public.  
10 I'll have to mention one -- the hydrogen infrastructure  
11 allocation does not have the ARB-CEC survey of automakers  
12 to make sure that we have their trajectory of vehicle  
13 deployment correct. It has been omitted, it was in prior  
14 years, as a matter of fact, I asked that that be done  
15 right from the start so we could match our investment  
16 with the deployment of those vehicles.

17 I think all these things are very important  
18 right now, that we stay true to the statute, and to  
19 informing the program, and actually developing those  
20 metrics that have been mentioned by members Coleman and  
21 Gershen: this is the critical year for reauthorization.  
22 And I think we have to be able to defend this at the  
23 utmost level, and I think most of these things are going  
24 to be absolutely critical for us to gain reauthorization.  
25 It won't be a walkover in the Legislature, Super Majority

1 notwithstanding. So I'd just like to provide those  
2 observations, hope they're helpful, and if you have any  
3 questions, I'd love to answer them now, or be publicly  
4 available for any questions in the future. Thank you for  
5 your time.

6 CHAIRMAN WEISENMILLER: Thanks. Thanks for  
7 your comments.

8 MR. MCKINNEY: Mr. Chairman, we have one last  
9 blue card from Jordan Brandt, and then I'll turn to  
10 Advisory Committee Members, and then the Chair and  
11 Commissioner Douglas for closing comments.

12 MR. BRANDT: Yes. Hello. My name is Jordan  
13 Brandt from Phoenix Hybrid and Electric. I just want to  
14 thank you for your commitment to renewable energy and  
15 alternative transportation and all your hard work.

16 And I just wanted to share real quickly some of  
17 the information that I have found and some of the things  
18 that we're researching and that we would like to  
19 implement with our company. And so we have been  
20 researching ways to make gas micro turbines more  
21 efficient to use as range extending devices on hybrid  
22 electric vehicles, specifically for Class 7 and 8 semi-  
23 trucks. And we're also looking to address interstate  
24 travel as traveling over 200 to 300 miles, is a pretty  
25 big challenge for any existing fully electric vehicles

1 right now. And also, so what we're working on is called  
2 a combined cycle gas turbine, and it's basically much  
3 more efficient than some of the existing ones now with  
4 the fuel that it does use, and also we're looking at  
5 using liquid oxygen as an oxidizer to increase the  
6 efficiency and also to achieve near zero emissions with  
7 these systems, and also with using the liquid oxygen,  
8 we're able to use basically any type of fuel, including  
9 waste oils without the need to convert it into biodiesel,  
10 so we can avoid that whole costly energy intensive  
11 process and use recycled motor and cooking oil. And  
12 also, you know, liquid oxygen is widely available, it's  
13 cheap, it's a renewable energy source, actually much more  
14 energy efficient -- up to about a 70 percent efficiency,  
15 making liquid nitrogen and liquid oxygen, and you get  
16 both at the same time.

17           And we would like to start with fleet trucks  
18 and work our way up, and this technology, it's not new,  
19 it just hasn't received much attention, and I think  
20 liquid oxygen, in particular, deserves a look at. And I  
21 think it would be a competitive technology that could  
22 actually be implemented in the very near future. And  
23 that's it. I'd be glad to answer any other questions  
24 anybody would have, I know it's a pretty complicated  
25 technology, so thank you again for your time.



1 CHAIRMAN WEISENMILLER: Thank you.

2 MR. MCKINNEY: Thank you. Any last closing  
3 remarks from members of the Advisory Committee?

4 MS. TUTT: Yes. I have one -- really, it's a  
5 question. The funding that -- there used to be a  
6 category or a subcategory for outreach and education, and  
7 I'm wondering, I actually think that's very important  
8 right now, and there's a tremendous need for it, so I'm  
9 wondering why that no longer is included in the funding  
10 categories, or is it buried within one of these  
11 categories? So that was my question, and then I have --

12 MR. MCKINNEY: No, we did have that in here.  
13 We have let a contract for outreach and marketing, I  
14 think the focus of that is a little different from what  
15 you're implying here, so I would ask that you kind of  
16 keep that comment current, whether it's in your docketed  
17 comments, or we're making note of that here.

18 MS. TUTT: Okay, it is in my docketed comments.  
19 But there's no new money for outreach and education. Is  
20 that correct?

21 MR. MCKINNEY: Correct.

22 MS. TUTT: Okay, because I think that that -- I  
23 will -- I've said it in my comments, I will say it again,  
24 but I think that's really important. And I just really  
25 want to thank the Chairman and Commissioner Douglas,

1 staff. I do think -- I've only been in this process for  
2 two years, unlike Bonnie, but I just -- I've seen  
3 tremendous growth and benefits that I was involved before  
4 I was on the Advisory Committee, so I think this is a  
5 very -- a good plan, a solid plan, a lot of thought,  
6 really appreciate the tremendous amount of time that your  
7 staff has spent with me and my members, so I can't thank  
8 you enough.

9 CHAIRMAN WEISENMILLER: Great. Thank you. Any  
10 other --

11 MR. SHEARS: Yeah, just wanted to finally get  
12 around to offering my kudos to the Energy Commission and  
13 the staff again for another fine effort in a program that  
14 includes everything with the kitchen sink and with all  
15 the tensions and compromises that go along with that, you  
16 know, and again great great drafting. You know,  
17 substantially minor revisions between the first draft and  
18 this draft, and I think it's a testament to how smoothly  
19 the program is running now, recognizing that we still  
20 have differences in perspectives around some of the  
21 funding priorities. So thanks again to everyone.

22 CHAIRMAN WEISENMILLER: Any Advisory Committee  
23 Members on the phone that would like to comment?

24 Okay, so with that, again, I'd certainly like  
25 to thank the Advisory Committee for their hard work on

1 this. As you know, certainly the challenges in the  
2 transportation space are huge, and this is really a drop  
3 in the bucket in terms of our funds, and it is very much  
4 a zero sum game as everyone comes in and says, "Well, a  
5 little more here." And then the question is, "Where does  
6 it come from?"

7           It was certainly encouraging to hear all of the  
8 detailed discussion of the hydrogen program and I think  
9 sort of generally a strong load of support there, and so  
10 again, I think everyone understands the basic mission to  
11 sort of get that -- again, we're trying to put forth a  
12 portfolio, we're trying not to put all our eggs in one  
13 basket, we're somehow in the portfolio trying to balance  
14 new term, long term, we're trying to balance the sort of  
15 greenhouse gas reductions, the sort of petroleum  
16 reductions, the air quality benefits, all the California  
17 economy benefits, so basically it's never going to be  
18 easy to come up with this. And I think as we look  
19 forward to the reauthorization, one of the things we're  
20 also doing in parallel this year is looking under the  
21 IEPR context at the benefits. So, again, trying to -- as  
22 we've talked about how this plan has really been stepped  
23 up over the years, again, going from the first benefits  
24 report, I think each year is important, two years is  
25 important to really flesh that out better and to make a

1 convincing case that these investments were worthwhile.

2 So, again, with that, Commissioner Douglas?

3           COMMISSIONER DOUGLAS: Well, I just wanted to  
4 join the Chair in thanking the Advisory Committee  
5 Members, as well, and the staff for their really good  
6 work. You know, it's not easy to be on the Advisory  
7 Committee, I know you get a lot to read, I know you have  
8 to take time out of your lives to come here and help us  
9 sift through these issues and it is a lot of work and we  
10 do appreciate it because it helps us a lot with coming  
11 out with a better product. And this was a bit of a trip  
12 down memory lane for me because I've been not attending  
13 these for a couple of years, but the issues are  
14 surprisingly similar, although I think as people have  
15 noted, there has been some movement since I was regularly  
16 attending these meetings.

17           So, anyway, with that, I'd again like to thank  
18 everybody, appreciate your time today.

19           CHAIRMAN WEISENMILLER: Okay, this meeting is  
20 adjourned. Remind people when you need written comments,  
21 if any?

22           MR. MCKINNEY: Sorry, say it again, Charles?

23           MR. SMITH: The 14th.

24           MR. MCKINNEY: March 14th, written comments are  
25 due.

1                   CHAIRMAN WEISENMILLER: Please, that's your  
2 next opportunity and final opportunity at least to  
3 comment on this before we get to the Business Meeting.

4                                   [Adjourned at 3:35 P.M.]

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