

STATE OF CALIFORNIA - THE RESOURCES AGENCY  
BEFORE THE  
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 9th Street  
Sacramento, California

Tuesday, December 4, 2012  
10:00 A.M.

Reported by:  
Kent Odell

## APPEARANCES

COMMISSIONERS

Carla Peterman, IEPR Lead Commissioner

Robert B. Weisenmiller, Chairperson

COMMITTEE MEMBERS

Alberto Ayala, California Air Resources Board

Tim Carmichael, California Natural Gas Vehicle Coalition

Will Coleman, Mohr Davidow Ventures

\*Will Barrett, American Lung Association, designee for  
Bonnie Holmes-Gen

Tyson Eckerle, Energy Independence Now

Lesley Garland, Western Propane Gas Association

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

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

Ralph Knight, Napa Valley Unified School District

Jack Michael, Recreational Boaters of California

John Shears, Center for Energy Efficiency and Renewable  
Technologies

Jananne Sharpless, Member at Large

Eileen Tutt, California Electric Transportation  
Coalition

\*Justin Ward, California Fuel Cell Partnership (courtesy  
of Toyota Motor Corporation)

Clark Williams, CalRecycle, designee for Howard Levenson

## APPEARANCES (CONT.)

STAFF

Randy Roesser, Deputy Director, Fuels and Transportation Division

Leslie Baroody

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

Jim Bartridge

Charles Smith, Program Manager, Investment Plan

Andre Freeman

Also Present (\* Via WebEx)

Public Comment

Colleen Quinn

\*Paul Staples

Kitty Adams

\*Russ Teall

Mel Assagai

Jon Van Bogart

Bill Williams

\*Christopher Perkins

Chris Mertens

Sachu Constantine

Jessica Rowley

Stephen Crolius

Richard Lowenthal

## APPEARANCES (CONT.)

Also Present (\* Via WebEx)

Public Comment

\*Ed Pike

Esther Perman

Evan Edgar

\*Frank Ziegler

Jamie Hall

Neilesh Mutyala, Seo

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

1  
2 DECEMBER 4, 2012

10:05 A.M.

3 COMMISSIONER PETERMAN: All right, everyone  
4 seems to be settling down in the room here so we're  
5 going to get started to keep on schedule.

6 Good morning everyone, I am Commissioner Carla  
7 Peterman, Lead Commissioner for Transportation at the  
8 Energy Commission. Welcome to today's workshop on the  
9 Draft 2013-2014 AB 118 Investment Plan.

10 This will be the first of two Advisory Committee  
11 meetings to discuss the Investment Plan. We look for  
12 input from you from this meeting for our first draft  
13 that must go to the Legislature in January.

14 As staff --

15 (WebEx interruption)

16 COMMISSIONER PETERMAN: Hi. Welcome.

17 As staff will explain, we'll be looking for  
18 comments very soon. This is not your only time to  
19 comment on the plan. Indeed, comments are welcome after  
20 the due date. But by that date, if you provide  
21 comments, then staff will have the opportunity to  
22 consider them and incorporate them into a draft before  
23 we submit it to the Legislature in January.

24 After that plan is submitted we'll continue to  
25 accept comments and there will be a revised plan

1 released in the spring, where we'll have another  
2 Advisory meeting and solicit any additional comments.

3           And then we will adopt the plan in order to  
4 spend the money in the next fiscal year.

5           First, let me say thank you to staff for the  
6 tremendous amount of work that went into getting this  
7 plan together. Indeed, staff's worked very hard to get  
8 the plan ready for now, so that we can hear your  
9 comments.

10           I think that staff's efforts were helped by the  
11 Advisory Committee meeting we had in September. In that  
12 meeting we had presentations from Advisory Committee  
13 members on the latest and greatest in their technology  
14 and infrastructure spaces, and that information was  
15 useful in formulating this plan.

16           I'm joined here by Chair Weisenmiller and so  
17 I'll ask him to offer some additional comments.

18           I'll just add a comment that we continue to  
19 enjoy and support managing the AB 118 program. We've  
20 seen a tremendous amount of successful investment in  
21 alternative fuels, technologies and vehicles. And, you  
22 know, I've had the opportunity to see a number of these  
23 projects over the last year and we really are making  
24 headway in terms of transforming the sector.

25           And again, we look forward to your comments and

1 participation today.

2 CHAIRPERSON WEISENMILLER: Yeah, I'd like to  
3 thank everyone for their participation today. I think  
4 the 118 program is very important to the State; it's  
5 helping us address the transportation issues. And, so,  
6 certainly, we welcome your feedback on how to do this  
7 better.

8 COMMISSIONER PETERMAN: So, before we go to  
9 staff's presentation let's do a round of introductions.  
10 And just by way of further introduction to those who  
11 haven't attended one of these meetings before, the  
12 program has an Advisory Committee that represents,  
13 again, the different sectors that participate in the 118  
14 program. And the Advisory Committee members,  
15 particularly, are helpful in terms of providing  
16 additional comments for us as we move forward with the  
17 plan.

18 They're all seated around a horseshoe table  
19 here. And as we go through the different funding  
20 categories we'll get feedback from the Advisory  
21 Committee members, first.

22 Depending on how much public comment there is on  
23 a particular topic, we'll try to take that comment with  
24 the topic. But if there's a tremendous amount, we'll do  
25 the public comment towards the end, as it's on the



1 agenda.

2 So, with that I'll turn to my right.

3 MR. ROESSER: Good morning. I'm Randy Roesser,  
4 I'm the Deputy Director of the Emerging Fuels and -- the  
5 Fuels and Transportation Division, in which the Emerging  
6 Fuels and Transportation Office falls under, and the AB  
7 118 Program. So, good morning everyone.

8 MR. MC KINNEY: Jim McKinney, Program Manager  
9 for the Alternative Renewable Fuel and Vehicle  
10 Technology Program.

11 COMMITTEE MEMBER ECKERLE: I'm Tyson Eckerle,  
12 Executive Director of Energy Independent Now, a  
13 nonprofit focused on transportation policy.

14 COMMITTEE MEMBER DESIGNEE WILLIAMS: Clark  
15 Williams with CalRecycle. I'm here on behalf of Howard  
16 Levinson today, who sends his regrets he's not able to  
17 join you in person.

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

20 COMMITTEE MEMBER TUTT: Eileen Tutt with the  
21 California Electric Transportation Coalition.

22 COMMITTEE MEMBER KNIGHT: Ralph Knight, Napa  
23 Valley Unified School District.

24 COMMITTEE MEMBER AYALA: Thank you. Good  
25 morning, my name is Alberto Ayala. I'm here

1 representing the Air Resources Board. It's my first  
2 meeting. I'm replacing Tom Kincaid, who's retiring, as  
3 many of you know, so I'll be the new Deputy Executive  
4 Officer. And I just want to say it's a real pleasure to  
5 be here. Thank you.

6 COMMITTEE MEMBER GARLAND: Lesley Garland,  
7 Western Propane Gas Association.

8 COMMITTEE MEMBER KAFFKA: Steve Kaffka,  
9 California Biomass Collaborative and UC Davis.

10 COMMITTEE MEMBER SHARPLESS: Jan Sharpless,  
11 former Chair of the Air Resources Board and former  
12 Commissioner of the Energy Commission.

13 COMMITTEE MEMBER MICHAEL: Jack Michael  
14 representing Recreational Boaters of California.

15 MR. BARTRIDGE: Jim Bartridge, Energy  
16 Commission.

17 MS. BAROODY: Leslie Baroody, Energy Commission.

18 COMMITTEE MEMBER CARMICHAEL: Sorry I'm late;  
19 Tim Carmichael with the Natural Gas Vehicle Coalition.

20 COMMISSIONER PETERMAN: Great thanks. Now,  
21 we'll turn to the program status update.

22 Oh, pardon, excuse me, we do have some AB 118  
23 members who are participating by phone, if you'd like to  
24 identify yourselves.

25 COMMITTEE MEMBER WARD: Justin Ward.

1 COMMISSIONER PETERMAN: Can you say that again?

2 COMMITTEE MEMBER WARD: Hi, this is Justin Ward,  
3 the Chair of the California Fuel Cell Partnership and  
4 Advanced Program Manager for Toyota.

5 COMMISSIONER PETERMAN: Great, thanks. Is there  
6 anyone else on the line?

7 MR. GRUBER: Good morning, this is Paul Gruber,  
8 Program Manager for the STEPS Program at UC Davis.

9 MS. QUINN: Good morning, this is Colleen Quinn  
10 with Charge Point.

11 COMMISSIONER PETERMAN: Any other -- great, so  
12 I'm just asking for anyone who's on the Advisory  
13 Committee right now. And for those who also are on the  
14 phone we appreciate you being here and we look forward  
15 to you from public comment.

16 So, are there any other Advisory Committee  
17 members on the phone?

18 MR. BARRETT: Hi, this is Will Barrett with the  
19 American Lung Association. Bonnie Holmes-Gen wasn't  
20 able to join today, so I'm on the phone.

21 COMMISSIONER PETERMAN: Thanks Will.

22 All right, well, Advisory Committee members who  
23 are on the line, I'll do my best to remember to turn to  
24 you for comments during particular sections, but don't  
25 be shy to alert Charles if you want to make a comment,

1 as well.

2 So, we're now turning to Mr. McKinney.

3 MR. MC KINNEY: Good morning and, again, welcome  
4 to the December 4 Advisory Committee meeting for the  
5 ARFVTP.

6 A few housekeeping items, first. Let's see, if  
7 you're not familiar with this building, we have rest  
8 rooms immediately out here. And we have a snack bar,  
9 the Café Rendezvous up on the terrace.

10 In the event of an emergency please stay calm,  
11 exit the building out through the side doors here and  
12 reconvene over in the park that's kiddie corner from us,  
13 and when we get the all-clear signal you may return.

14 So, I'm going to give what we call the program  
15 status report but, first, a quick review of the agenda.

16 We are now at 10:15, Program Status Update. And  
17 then Charles Smith, Project Manager for the Investment  
18 Plan, will walk us through the proposed funding levels.

19 We will then turn to the Advisory Committee  
20 meeting for a discussion. Lunch; continue the  
21 discussion, and then have public comment at 2:00 p.m.

22 So, I thought I'd start out today with one of  
23 the articles from *The New York Times* yesterday. If you  
24 didn't hear, in Doha Qatar the Climate Convention  
25 negotiations are continuing. And there was a little

1 news; global CO2 emissions continue to set records. So,  
2 in 2011 it was up three percent from the previous year.  
3 2012 emissions are schedule or predicted to go up  
4 another 2.6 percent from that.

5           The scientists who track these things say we are  
6 rapidly approaching that critical tipping point, which  
7 is two degrees Celsius net change or 3.6 degrees  
8 Fahrenheit.

9           Kind of mixed news is that U.S. emissions have  
10 been down about 9 percent since '05, but this is largely  
11 attributable to our weak economy and the very low prices  
12 of natural gas and coal switching. So, we have an  
13 increasing number of coal plants retiring, being  
14 replaced with natural gas.

15           The impact of good programs such as this, and  
16 our colleagues at the Air Board, it's not quite clear  
17 that those can be measured, yet, in an includable scale.

18           But that's the news and that's why we're doing  
19 this.

20           I forgot to do the slide. So, we're now at year  
21 five of our 7.5 year program. Through our Investment  
22 Plans across five fiscal years we've allocated \$450  
23 million to date.

24           We've awarded \$300 million in project awards and  
25 we've passed the 150 mark for the number of projects.

1           Our program staff are very busy working on  
2   invoicing, developing agreements, and developing the  
3   next set of solicitations and I'll talk more about  
4   those.

5           I just wanted to walk through some of the major  
6   awards since our last meeting here. The way these  
7   series of slides read is that the top bar, so in this  
8   case alternative fuel production, that's the cumulative  
9   amount allocated and awarded to this part.

10          So, this includes biomethane, diesel  
11   substitutes, or biodiesel renewable diesel, and then  
12   gasoline substitutes which include cellulosic ethanol  
13   and green gasoline.

14          So, we just announced the round two awards in  
15   this area. For biogas we have three additional  
16   commercial scale and pilot awards to Tulare County,  
17   Environ, and a company called Blue Line.

18          As a friendly reminder, all of the biogas  
19   projects use waste-based resources, either the organics  
20   out of MSW waste streams, or other remains from food  
21   processing or agricultural activities.

22          It does have one of the lowest CO2 equivalent  
23   levels so about 9 to 11 grams CO2 per mega joule for the  
24   carbon intensity value.

25          Biofuels continues to be over-subscribed so we

1 have far more projects that pass in the merit funding,  
2 and we have more of those than we do actual funding  
3 levels.

4           The same with diesel substitutes, we awarded two  
5 more big projects. These are commercial-scale projects.  
6 Buster Biofuels and Eslinger, both of those are  
7 producing advanced generation renewable diesel,  
8 biodiesel from waste-based feed stocks, primarily use  
9 cooking oils and tallows.

10           There are 15 additional projects that passed,  
11 but we couldn't fund due to a lack of funds in this  
12 area.

13           For gasoline substitutes, a couple of more  
14 awards, so the Mendota Energy Beet Consortium down in  
15 the Mendota area, the San Joaquin Valley, they were  
16 awarded funding for a pilot plant production, so  
17 evolving from feasibility phase to a pilot.

18           And Zechem, I think out of the Bay Area, that's  
19 going to be our first green gasoline, so that's our  
20 first drop-in fuel on the gasoline side or ethanol side.  
21 We've had several of these for renewable diesel. And  
22 that's critical because it minimizes the need for  
23 alternative or parallel infrastructures.

24           Turning to all fuel infrastructures, we're at  
25 \$66.8 million cumulative thus far. E85 stations, we've

1 got grant contracts out for more than 200 stations, but  
2 that market is slow and construction build-out is slower  
3 than we had anticipated.

4 Biodiesel infrastructure, this is primarily bulk  
5 tankage storage so you can get product, biodiesel  
6 products close to where diesel is mixed and distributed  
7 from the racks.

8 Electric vehicle charging, we've passed the  
9 5,000 EVSC mark with that, \$20.6 million cumulative, and  
10 these are being installed at a good clip throughout the  
11 State by many of our grantees.

12 Hydrogen stations, this is kind of an old number  
13 and it does not reflect the recently released \$29  
14 million solicitation that was put out. Those proposals  
15 are due in mid-January. We expect another 18 to 19  
16 stations out of that solicitation.

17 Turning to the vehicle categories, as we  
18 discussed last time our advanced medium-duty, heavy-duty  
19 technology demos we were able to fund all the way  
20 through the list of the awardees. And those final  
21 projects that we could fund are the Transpower Class 8  
22 all-electric truck used for drayage operations in the  
23 Southern California ports.

24 Volvo has a PHEV Class A truck which is pretty  
25 interesting.



1           And then Artisan Industries has a natural gas  
2 hybrid. And again, these are all Class 8 tractors  
3 targeted for the port operations and drayage in Southern  
4 California.

5           Our light-duty EVs, those are our transfers to  
6 ARB and I think we'll hear a little bit more about that  
7 later.

8           The next line, the electric vehicles, this  
9 represents the \$4 million we put into this area about a  
10 year ago, so those are the 155 Class 6 package delivery  
11 trucks from companies like Smith Electric and Electric  
12 Vehicles International.

13           Natural gas trucks continue to move briskly. We  
14 are very interested in the low prices and seemingly  
15 firming up confirmation, if I may say that, for natural  
16 gas supplies here in the United States, so this is  
17 something we want to talk about more in the future.

18           Propane vehicles continue to move at a fairly  
19 modest level.

20           On the manufacturing sector, we also were able  
21 to put more money into this, continue funding down the  
22 award list; so Motive Power, their all-electric drive  
23 train for medium-duty and heavy-duty trucks, and then  
24 two new companies to us, Treksa and Vantage who do  
25 electric vehicle components chassis and complete

1 vehicles.

2 Emerging opportunities, so this is the Cal-Tech,  
3 UC Berkeley, I think LBL Fuel from Sunlight award, and  
4 then Air Force Electrification.

5 Workforce training, we continue to put money  
6 into this and, you know, having a trained, educated  
7 workforce that can work on these vehicles and fuels is  
8 critical to a clean vehicle future here in California.

9 We are very pleased with the progress of the  
10 Employment Training Panel and EDD as they continue to  
11 fund healthy numbers of training programs.

12 And then our market and program support  
13 category, so EV readiness grants we're up to nine of  
14 those thus far.

15 Our fuel standards work, so this is for hydrogen  
16 fueling standards and biodiesel fueling standards,  
17 that's CDFA, Division of Weights and Measures is doing  
18 for us, that continues to advance.

19 Sustainability studies, those contracts with UC  
20 Davis, and the US Forest Service, UC Berkeley, that Bill  
21 Kinney manages, continue apace, and other technical  
22 assistance grants which you see here.

23 We have now executed each of these major  
24 agreements and we're very pleased with the caliber,  
25 scope and depth of technical support we're going to be

1 getting.

2           The first is with the National Renewable Energy  
3 Lab, Mark Milena, who came out of UC Davis, is the  
4 principal investigator and project manager for that.  
5 They're going to be helping us on near-term technical  
6 support, so technology and market assessments, PEV  
7 planning support, they're already digging in and helping  
8 us develop the Statewide Infrastructure Plan for PEVs,  
9 and benefits report support.

10           The UC Davis Next Steps Program, at the  
11 Institute for Transportation Studies, just down the  
12 freeway here, a great series of studies, some of the  
13 highlights PEV consumer behavior, biofuels investment  
14 strategies, California case studies. We really need to  
15 understand what's happening in California with the  
16 biofuels markets. How can we continue to incentivize  
17 and spur commercial scale production for these advanced  
18 technology, low carbon, sustainably produced fuels?

19           And then, finally, the RAND Corporation, so Dr.  
20 Lloyd Dickson is the program manager for that. And this  
21 is going to be the program scale assessment that we've  
22 talked about for a number of years, so that is now up  
23 and running.

24           I forgot to mention that Professors Joan Ogden  
25 and Dan Sperling, at the ITS Next Step Program, are the

1 team leaders.

2 We kind of call this chart our score card, it's  
3 a way of checking in and seeing, you know, how are we  
4 doing? We throw out a lot of numbers whether, you know,  
5 numbers of stations, fuel production projects, vehicles.  
6 This helps us keep track, to see where we've been and  
7 how we're moving up.

8 I have mixed feelings about these numbers  
9 because on the one hand when you start from near zero  
10 figures the percentage increases are dramatic and we all  
11 feel good about that. If you look at it in absolute  
12 terms, remember, we've got a vehicle fleet that exceeds  
13 27 million, now, so 26 point something cars, a million  
14 plus trucks these numbers are tiny and we have a long  
15 way to go.

16 But some of the ones that we're especially  
17 pleased with, so on the EV charging area our '09-'10  
18 baseline was 1,270. We've now added over 5,200 chargers  
19 for there.

20 For E85 we went from 39 stations and, again,  
21 we've added 205 stations contracted for construction and  
22 that's more than a 400 percent increase.

23 The natural gas markets, that was already a  
24 healthy number of stations so our additions are more  
25 modest and we have scaled back funding because the

1 private sector believes they can do that effectively  
2 without public support.

3 Hydrogen, just with our previous round of  
4 funding we had, you know, more than doubled the number  
5 of stations in California and building on the leadership  
6 of the ARB, and the South Coast Air Management District.

7 Again, we're expecting at least 18 stations out  
8 of the current solicitation on the street.

9 Electric cars, that's really ARB and the CVRP  
10 domain. Trucks, I've already talked about.

11 And again, natural gas trucks we've added 1,200,  
12 so a 9 percent increase in that fleet and we see a  
13 tremendous potential, again, for natural gas trucks in  
14 California.

15 More recently, I've talked about some of these  
16 already, our recent solicitations, so medium-duty,  
17 heavy-duty trucks I've talked about that.

18 Hydrogen fueling infrastructure; so that was  
19 released November 19, proposals due January 17, more  
20 than two months to put those together, again we've got a  
21 cap at \$1.5 million so we're expecting 18 plus stations  
22 out of this nearly \$29 million solicitation.

23 This will cover 27 regions stemming from the  
24 Fuel Cell Partnership's road map in California.

25 And we've got special considerations for

1 renewable hydrogen and co-location with what we call  
2 non-road applications, so that means areas where they've  
3 already got hydrogen fueling for forklifts we see an  
4 opportunity to leverage that cost-effectively to fueling  
5 vehicles.

6           Here's our master schedule over the next, say,  
7 six to nine months. I've talked about a couple of these  
8 already.

9           Natural gas infrastructure, we expect a new  
10 solicitation in December.

11           Electric truck retrofits demonstrations; the  
12 electric truck market seems to move in kind of fits and  
13 starts. One of the initiatives from the industry and  
14 the Electric Leadership Council is a concept for  
15 retrofitting existing diesel trucks with all-electric  
16 drive trains, so that's something we're interested in  
17 funding and pursuing.

18           Charging infrastructure, the next batch of money  
19 will come out in winter, January/February.

20           Commercial scale biofuels production, another  
21 \$9.3 million slated for the spring.

22           Regional planning and Centers for Alternative  
23 Fuels, we also expect to get those out in the spring.

24           And then our Natural Gas Voucher or Propane  
25 Vehicle Deployment Program's also ongoing through the

1 springtime.

2           A couple of other important updates, just to set  
3 our program in context, the Vision for Clean Air that  
4 was developed and released by ARB, South Coast, San  
5 Joaquin Air Quality Management District and USEPA, you  
6 know, we already knew it was going to be tough meeting  
7 the 2020 targets and 2050 targets for GHG reductions.  
8 This adds a very stringent overlay for NOX reductions,  
9 up to 80 percent in the most constrained air basis by  
10 2023. So, that's an additional impetus for good work.

11           The Zero Emission Vehicle Action Plan that was  
12 released in September, and through the leadership of  
13 Leslie Barody and Lindsay Tanamoto, here, we are  
14 working to support that with the Infrastructure Plan.  
15 Those targets, one million PEVs by 2020, one and a half  
16 million by 2025.

17           LCFS credit discounting; some of you may know  
18 this was approved at the last Business Meeting. This is  
19 to review and possibly modify the funding restrictions  
20 under Section 3103 of our program regulations. We  
21 expect to get those workshops going in early 2013.

22           Biofuels Workshop early in 2013, Natural Gas and  
23 Zero Emission Truck Workshop winter/spring. This is  
24 kind of a new initiative for us, but we really want to  
25 understand what's happening with the ZEV trucks, natural

1 gas trucks, how far can natural gas take us when it's  
2 mixed with renewable natural gas? Is this a viable  
3 alternative pathway to renewable diesel or clean diesel?

4 And then a friendly reminder; our Next Benefits  
5 Report will be completed with the 2013 Integrated Energy  
6 Policy Report so it's a statutory requirement.

7 That concludes my presentation, Program Status,  
8 so I can take clarifying questions if that's okay with  
9 Commissioner Peterman. But, please, just clarifying  
10 questions, only.

11 COMMITTEE MEMBER CARMICHAEL: Thanks Jim; Tim  
12 Carmichael here. Back to slide five, please.

13 You went through the top part of that slide and  
14 then mentioned some additional projects and I wasn't  
15 clear if those additional projects got us to the 9, 9  
16 and 8 or they're on top of the 9, 9 and 8?

17 MR. MC KINNEY: Yeah, good question, Tim. Yeah,  
18 these projects, so 1,826 all total, this is the number  
19 of projects that we have funded.

20 What I was trying to say is that say, for  
21 example, with biodiesel renewable diesel 15 additional  
22 projects passed, are meritorious, but we did not have  
23 enough funding.

24 On the biogas side there were six more that  
25 passed, but we didn't have funding.



1           And then there were a couple more on the ethanol  
2 side.

3           Yeah, Steve and then Lesley.

4           COMMITTEE MEMBER KAFFKA: Steve Kaffka. Jim,  
5 the LCFS credit discounting, can you just quickly  
6 describe what that means?

7           MR. MC KINNEY: Currently, in our program  
8 regulations we have a provision that requires grantees  
9 of the ARFVTP, if they go out and seek to trade or sell  
10 credits in the LCFS credit markets that they're required  
11 to discount the value of those credits in proportion to  
12 the grant award received from the Commission.

13           As I discussed at length at the Business  
14 Meeting, many of our stakeholders and grantees in the  
15 biogas, biofuels arena and, actually, this affects all  
16 alternative fuels, are very concerned about that. They  
17 recommended we reexamine that provision. That was  
18 approved, again, at the last Business Meeting.

19           So, staff workshops will begin next year.

20           COMMITTEE MEMBER GARLAND: Jim, on slide 11, the  
21 future funding opportunities, can you be any more  
22 specific about the natural gas and propane vehicle  
23 deployment, what "spring" means?

24           MR. MC KINNEY: Let me look to my right,  
25 gentlemen?

1           Okay, so Andre Freeman, who's heading up this  
2 part of our program, says that it's ongoing. So, as  
3 those monies are expended we'll start to cycle in the  
4 next fiscal year monies.

5           COMMITTEE MEMBER GARLAND: Okay. I think --  
6 well, if I could just make a comment about this, I think  
7 we all -- when I have met with staff over the past  
8 couple of months we've had some concerns about the  
9 propane side of the Incentive Program.

10           There's some obvious issues with just deploying  
11 the money. It's not for lack of trying to get rid of  
12 the money, it's the procedure that's slowing everything  
13 down.

14           If there's any way that we can expedite trying  
15 to revamp that Incentive Program to get that money on  
16 the street faster?

17           I realize that I'm sitting here with a lot of  
18 unused money that, frankly, I think we can use very  
19 quickly if we tweak the program so --

20           MR. MC KINNEY: Can I respectfully ask you to  
21 raise that again when we get into Advisory Committee --

22           COMMITTEE MEMBER GARLAND: Yes.

23           MR. MC KINNEY: -- discussion levels?

24           COMMITTEE MEMBER GARLAND: Yes.

25           MR. MC KINNEY: Thank you.

1           COMMISSIONER PETERMAN: Well, thanks for the  
2 comment and it will be good to raise it again later.

3           And I'll also ask when people speak to just  
4 identify yourselves for those on the phone.

5           MR. MC KINNEY: Any more clarifying questions  
6 form the Advisory Committee members?

7           COMMISSIONER PETERMAN: Check the phone.

8           MR. MC KINNEY: And can we check the phones?

9           Okay, I want to turn it over, now, to Charles  
10 Smith, our Project Manager for the Investment Plan.  
11 He's going to walk us through the rationale for the  
12 staff-recommended funding allocations for the '13-'14  
13 plan.

14          MR. SMITH: Thank you, Jim, thank you, Advisory  
15 Committee members for being here today.

16          I'd first like to briefly remind everyone why  
17 we're here. This staff draft is the first draft of the  
18 '13-'14 Investment Plan Update. And this document, once  
19 adopted, will form the basis for allocating program  
20 funds to future solicitations and agreements.

21          We anticipate a total of \$100 million to be  
22 available in the next fiscal year.

23          As for timing, this is our schedule for  
24 developing the 2013-14 Investment Plan. We're moving up  
25 our request for comments on this draft to December 11th,

1 a week from today. This is to help us achieve our goal  
2 of providing a revised draft by January 10th, in time  
3 for the release of the Governor's budget.

4           However, we will be continuing to receive  
5 comments on the Investment Plan throughout the plan's  
6 development.

7           After releasing a revised draft in January we're  
8 looking at February for our next Advisory Committee  
9 meeting and after that we will issue a Lead Commissioner  
10 Report and that report will go to a Commission Business  
11 Meeting for approval next April or May.

12           This next slide highlights some of the primary  
13 foundations for our funding allocations. This includes  
14 a lot of the analyses that were done during the  
15 development of previous Investment Plans that are still  
16 applicable to the coming fiscal year.

17           We've also incorporated the input from our  
18 recent September Advisory Committee meeting, as well as  
19 other industry input.

20           And, finally, we also looked to the Vision for  
21 Clean Air document and the Governor's ZEV Action Plan,  
22 which Jim mentioned earlier.

23           I'd now like to walk everyone through the  
24 contents of the Investment Plan. I'll try to be brief  
25 since most of the materials here are covered in greater

1 depth in the Investment Plan, and which is available  
2 online.

3 The draft Investment Plan includes a \$23 million  
4 allocation for biofuel production and supply projects.  
5 We expect this --

6 COMMISSIONER PETERMAN: Charles, I'm going to  
7 ask you to speak a little bit louder or closer to the  
8 microphone.

9 MR. SMITH: Oh, sorry.

10 COMMISSIONER PETERMAN: Thank you.

11 MR. SMITH: Is this better?

12 COMMISSIONER PETERMAN: Yes.

13 MR. SMITH: Okay, sorry about that.

14 We expect this category to have a significant  
15 role in meeting the State's 2020 LCFS target and will  
16 continue to have significant market potential as long as  
17 internal combustion engines represent the majority share  
18 of in-State vehicles.

19 This category has also been a significant area  
20 of interest in our solicitations, with more than 130  
21 proposals requesting over \$400 million for in-State  
22 projects, so significant potential remains.

23 As with the previous years, we expect to allow  
24 multiple fuel types to compete under this category, with  
25 a preference for fuels that can utilize existing

1 infrastructure and vehicle stocks.

2           We'll continue to favor waste-based feedstocks,  
3 which have very low LCFS carbon intensity values and we  
4 will be disallowing funding for projects that utilize  
5 edible corn feed stalks, in line with the recently  
6 passed AB 523.

7           We've also identified here a pair of questions  
8 that we are specifically seeking your feedback on. The  
9 first relates to identifying the proper focus for our  
10 program between commercial production projects versus  
11 pre-commercial projects.

12           The second relates to how we can better ensure  
13 the market viability of biofuels production within the  
14 State. We're interested in hearing your perspectives  
15 here and also in the upcoming Biofuels Workshop that Jim  
16 mentioned, which is scheduled in January.

17           Moving now to fueling infrastructure, the first  
18 allocation here is \$7 million for plug-in electric  
19 vehicle, or PEV charging infrastructure.

20           As the number of PEVs within the State increases  
21 each year, we need to support charging infrastructure  
22 that can keep up with these vehicles.

23           The State's settlement with NRG will provide  
24 significant infrastructure installations and we will be  
25 prioritizing our own funding to focus on areas and

1 applications that will not be served by this settlement.

2           We will also continue to focus our charging  
3 opportunities primarily on workplaces, on multi-unit  
4 dwellings and on fleets.

5           And, finally, we will consider funding for  
6 projects that are related to PEV infrastructure, such as  
7 improving the interoperability of charging  
8 infrastructure and other, similar EVSC projects.

9           Next, we have allocated \$20 million to support  
10 the expansion and growth of hydrogen fueling  
11 infrastructure. Major automakers have identified 2015  
12 to 2017 as a major growth period for fuel cell vehicles.  
13 However, the infrastructure needs to be available to  
14 make these vehicles attractive to prospective customers.

15           At present, the number of currently funded and  
16 expected stations is not sufficient to meet a target of  
17 68 stations by the end of 2015.

18           Our current solicitation may provide upwards of  
19 15 to 20 new stations and the proposed funding  
20 allocation here would be enough to support an additional  
21 10 to 15 stations.

22           We'll continue to focus on high-priority station  
23 locations, as well as supporting the development of  
24 higher capacity stations in line with the customers'  
25 needs.

1           Now, moving to natural gas fueling  
2 infrastructure, we are providing \$1.5 million towards  
3 this category. This amount is smaller than the vehicle  
4 side of our natural gas funding, but that's where our  
5 focus is for this Investment Plan, on the vehicle side.

6           We've seen the private market making it possible  
7 to finance this infrastructure independent of our own  
8 funding, which is encouraging.

9           However, some entities, such as school districts  
10 and public transit entities, may have difficulty in  
11 accessing this kind of financing and this is where we  
12 expect our program can make an important difference in  
13 converting fleets from diesel and gasoline to natural  
14 gas.

15           This slide is a brief break down of some of the  
16 infrastructure types not proposed for funding in this  
17 draft Investment Plan.

18           Briefly, for propane infrastructure, we didn't  
19 find significant demand for program funding in a  
20 previous solicitation.

21           For E85 fueling infrastructure, we've made  
22 significant investments here already. Given the current  
23 difficulty of E85 to compete on equivalent pricing  
24 against gasoline, as well as the -- wanting to avoid the  
25 risk of undercutting our 200 previously funded stations



1 by adding more outlets before demand can fully  
2 materialize, we decided not to propose additional  
3 funding in this draft.

4 For biodiesel infrastructure we have also been  
5 under-subscribed in our recent solicitation for this  
6 category, and we also wanted to avoid funding any  
7 projects that might already be undertaken by new private  
8 investment, as well as any projects that would be done  
9 for purposes of LCFS compliance.

10 However, in all of these cases we will be  
11 continuing to monitor these areas and evaluate future  
12 funding needs as appropriate.

13 Shifting now to vehicles, our first allocation  
14 is \$12 million to support natural gas vehicle  
15 deployment. Continued interest in natural gas vehicle  
16 incentives has been apparent in our Vehicle Buy-Down  
17 Program, which Jim mentioned earlier.

18 We've also seen significant private investment  
19 in natural gas trucks due to their fuel savings.

20 However, the market for these is not yet self-  
21 sustaining and more can certainly be done to expand  
22 fleets' early interest in adopting natural gas trucks.

23 We're also interested in learning whether and  
24 where we can reduce our per-vehicle incentive levels and  
25 whether to continue our current buy-down program or

1 develop a new approach.

2           We've also allocated \$5 million as backup for  
3 the Clean Vehicle Rebate Project to support light-duty  
4 plug-in electric vehicles. The Clean Vehicle Rebate  
5 Project, or CVRP, is administered by the Air Resources  
6 Board.

7           In case of over-subscription, this funding can  
8 help expand consumer interest for PEVs beyond the early  
9 adopters and encourage the introduction of additional  
10 models of PEVs into California.

11           These vehicle incentives will continue to be  
12 important to consumers until lifecycle vehicle costs can  
13 approach parity with conventional vehicles.

14           These incentives are also an integral part of  
15 the Governor's ZEV Action Plan and more than 10,000  
16 incentives have been issued by the CVRP so far.

17           Next, we have allocated \$15 million to support  
18 the demonstration of medium- and heavy-duty vehicle  
19 technologies. Such projects might involve, for  
20 instance, hybrid electric technologies, full  
21 electrification, fuel cell technologies, advanced  
22 natural gas engines, and other project types that  
23 support the goals of this program.

24           The "Vision for Clean Air" document outlines  
25 aggressive scenarios for meeting air quality and GHG

1 emission targets in the medium- and heavy-duty sector.  
2 To help meet these targets, new technologies need to be  
3 proven among a wide array of vehicle types and  
4 applications.

5 As in previous years, this allocation will  
6 continue to be open to multiple fuels and technologies  
7 to the extent that they can support the program's goals.

8 The successful demonstration of new technologies  
9 in this field can be followed by the vehicle deployment  
10 incentives offered by the ARB's HVIP, in the case of  
11 hybrid and zero emission vehicles, and by the Energy  
12 Commission's own buy-down program in the case of natural  
13 gas vehicles.

14 I'll also briefly go over other vehicle types  
15 that were not proposed for funding in this draft.

16 There remains funding for propane vehicles in  
17 our buy-down program, based on previous year's funding.  
18 So, right now we are not proposing additional funding,  
19 but we are continuing to evaluate current and future  
20 incentive needs.

21 We also previously provided funding for the  
22 deployment of electric trucks. This was done by  
23 providing a higher incremental incentive through the  
24 ARB's HVIP. However, since then the ARB has adjusted  
25 the HVIP on its own to include a higher incremental

1 incentive for zero emission vehicles. So, we will be  
2 continuing to observe these incentives, but there  
3 doesn't seem to be an immediate need for our  
4 involvement.

5 Moving from vehicles, we have allocated \$3  
6 million to our emerging opportunities category, with a  
7 more narrowed focus on leveraging Federal cost sharing.

8 We've seen several exciting opportunities in  
9 this area, ranging from R&D into fuels from artificial  
10 photosynthesis, to vehicle electrification on Air Force  
11 bases, including evaluations of vehicle-to-grid systems.  
12 And we're certainly interested in other opportunities to  
13 leverage future Federal cost sharing projects as well.

14 We have also allocated \$10 million to  
15 manufacturing projects within the State. As the State  
16 continues to emerge from recession, we still need to  
17 translate California's inherent advantages in R&D in  
18 patent development and in venture capital into  
19 sustainable economic growth.

20 Through this category we can more directly link  
21 economic development with the expansion of the new  
22 technologies and products that will help the State meet  
23 its clean energy goals.

24 Moving now to workforce training and  
25 development, we have allocated \$2.5 million in this

1 initial staff draft.

2           These funds will primarily be used to continue  
3 valuable existing programs that we have in coordination  
4 with the Employment Training Panel and the Employment  
5 Development Department, as well as to assess the need  
6 for additional programs.

7           And one area of interest that we've expanded on,  
8 more specifically, is to look at how our program can  
9 support returning Veterans through our workforce  
10 training, as well.

11           Finally, regional readiness and planning, we've  
12 allocated \$1 million for this category. There are  
13 several areas that this funding could be useful for,  
14 including building on and expanding the series of, I  
15 believe, ten Regional Readiness Grants that the Energy  
16 Commission has put out for PEVs.

17           This funding could also help support a statewide  
18 PEV planning effort.

19           And, finally, to expand what has been a PEV  
20 focus in readiness and planning to include additional  
21 alternative fuels in the future.

22           These are also categories that we have not  
23 proposed funding for in this initial draft, including  
24 Centers for Alternative Fuels. We've had several  
25 projects propose interest to us, but we're still trying

1 to gather information on how to objectively solicit and  
2 select projects from among those that are proposed.

3           Given previous funding, we're not proposing any  
4 additional funding at this time.

5           And finally, with regard to sustainability  
6 studies, this has been an ongoing area of interest for  
7 us but we have not identified any specific needs for the  
8 coming fiscal year.

9           If needed, funding for sustainability studies  
10 might be pulled from the most relevant allocation. For  
11 example, biofuels in the instance of feedstock  
12 sustainability studies, manufacturing perhaps as it  
13 applies to vehicle manufacturing and sustainability  
14 concerns there, as well.

15           This final slide is the funding summary table  
16 from the Investment Plan, which summarizes all of our  
17 proposed funding allocations for the initial staff  
18 draft. And again, this is just the initial staff draft  
19 which is still open to discussion and reconsiderations.

20           And that concludes my presentation, thank you.

21           COMMISSIONER PETERMAN: Thank you, Charles.

22           Let me first note that we've been joined by  
23 Advisory Committee Member Will Coleman. Thank you for  
24 joining us.

25           In terms of next steps, in terms of soliciting

1 feedback, let me recommend that we walk through the  
2 funding categories on this slide and we'll first get any  
3 comments or questions from our Advisory Committee  
4 Members.

5 Please, just turn over your name placard if you  
6 have a question, but we can all see each other so we'll  
7 just turn to folks, accordingly, and we'll take it from  
8 there.

9 So, starting with the alternative fuel  
10 production category and particularly the biofuel  
11 production and supply category; any comments or  
12 questions from the Advisory Committee?

13 Joe?

14 COMMITTEE MEMBER GERSHEN: Hi, Joe Gershen here.  
15 I was just wondering on the alternative fuel production,  
16 the biofuel production and supply, why those aren't  
17 broken out into different biofuel categories? I think  
18 that would be helpful.

19 And, also, if they're scored according to their  
20 merits are they -- is that taken across the board or is  
21 it taken on an individual category basis or sub-category  
22 basis?

23 MR. MC KINNEY: Good question, Joe, Jim McKinney  
24 here. The reason we consolidated these categories one  
25 or two years ago, a couple, one is the technology.

1 We're finding the feedstocks available in California,  
2 whether they're waste-based resources, algae or  
3 dedicated energy crops, they're getting more fungible,  
4 so that means they can be used in all of the process  
5 technologies.

6 We also found it increasingly difficult to  
7 justify kind of these small allocation categories, how  
8 much for biogas, how much for biodiesel, how much for  
9 ethanol.

10 We thought it made sense, again, to consolidate  
11 these, let the technologies and feedstocks compete on  
12 their merit, so that's the justification for why we're  
13 doing it this way.

14 COMMITTEE MEMBER GERSHEN: But are they actually  
15 competing on their merit? We actually analyzed them and  
16 it looks like they're not being scored according to  
17 their merit because you'll see some of the -- there's  
18 obviously a -- it was mentioned in one of the  
19 presentations that there was a lot of over-subscription  
20 for the biodiesel category and the diesel substitutes  
21 category and yet, if you look at them side by side many  
22 of them that got passed over scored higher than some of  
23 the other categories.

24 So, it seems like it would be helpful to break  
25 those out, again, and then score them -- and then look



1 at what they actually score at and then award according  
2 to that. It seems that's done in all the other  
3 modalities, so why not do it in the biofuels?

4 COMMISSIONER PETERMAN: Thank you for that  
5 comment. I think, as Mr. McKinney noted, there are some  
6 tradeoffs between further sub-categorization, but you're  
7 comment will be considered.

8 COMMITTEE MEMBER GERSHEN: Thank you.

9 COMMITTEE MEMBER SHARPLESS: Yeah, I need a  
10 little more explanation to, I guess, react. I'm not  
11 quite sure when you have an over-subscription, this  
12 might get along to Joe's point as well, when you have an  
13 over-subscription and then you have another solicitation  
14 do the folks who qualify once, but there was inadequate  
15 funding, automatically get put back in the pool? And  
16 are they at the top of the list or do they have to  
17 compete with new proposals?

18 MR. MC KINNEY: The way we've handled this thus  
19 far is that it varies by category. And some of the  
20 decision factors are what is the state of the  
21 technology?

22 So, do we think that those companies and  
23 proposals that, say, had competitive scores, but were  
24 not high enough on the list to receive funding, is that  
25 the best available technology and use of those

1 feedstocks on the market?

2           If so, we may choose to allocate money from the  
3 subsequent -- or the fore-coming year into that or issue  
4 a new solicitation, so that's part of the decision  
5 factors going into that.

6           COMMITTEE MEMBER SHARPLESS: So, if I could just  
7 maybe drill a little further. So, when somebody  
8 qualifies, but doesn't get awarded because there's not  
9 adequate funding, when you have the next solicitation  
10 you go back and look at those proposals, and you see  
11 what the status of the technology in the market is at  
12 the time?

13           MR. MC KINNEY: Correct. So, we had a Biofuels  
14 Workshop this summer. We're proposing another one for  
15 January. It's a very active technology area. We're  
16 very pleased with the number of new companies active in  
17 California.

18           As we've reported in past discussions and  
19 Investment Plans, the waste-based resources alone, on a  
20 technical basis could produce over 2 billion gallons of  
21 very low-carbon renewable fuels.

22           So, it's a very important activity area but,  
23 again, it takes this kind of constant checking in to  
24 assess the state of the technologies.

25           COMMISSIONER PETERMAN: I'll also add the point,

1 too, I think it also depends on whether staff believes  
2 the next solicitation should be designed any differently  
3 than the previous one, as well.

4 COMMITTEE MEMBER SHARPLESS: So, if there had  
5 been adequate money, the consideration of whether the  
6 technology was ready or was the best, they still would  
7 have been funded, it's just the fact that you ran out of  
8 money?

9 MR. ROESSER: Correct. I think it would be --  
10 this is Randy Roesser. To drill down, right, to what  
11 you're asking I think is --

12 COMMITTEE MEMBER SHARPLESS: Yeah.

13 MR. ROESSER: -- when there is a new  
14 solicitation released, then the old solicitations do  
15 have to reapply, the proposers, we don't go back and  
16 refund.

17 What Jim was referring to early on, I believe,  
18 is that where we put out solicitations where we put up  
19 to a certain amount of money may be available, it  
20 depends if there are additional funds available that we  
21 can go back and add some additional funds to an existing  
22 solicitation and go further down the list if there are  
23 really, highly scored projects that warrant trying to  
24 find other monies.

25 But in answer to your specific question, if a

1 new solicitation is released then all bets are off, the  
2 proposers all have to submit and compete on a new round.

3 COMMITTEE MEMBER SHARPLESS: But it is an  
4 indicator to you, as the Commission and you, as the  
5 staff, that this is a high interest level. The fact  
6 that you mentioned there was 130, I believe that you  
7 said did not receive funding, is an indication that in  
8 this category if there was more money that there would  
9 be a lot of activity happening here to possibly meet the  
10 goals?

11 COMMISSIONER PETERMAN: And I'll make the  
12 general observation that there is excess demand in  
13 almost every category and so this one was particularly  
14 highlighted.

15 But the -- and the term "ran out of money" is  
16 probably a little bit inaccurate because there's an  
17 allocation, based on a plan that the Commission has  
18 approved, and then when there's no longer funding in  
19 that category available then staff looks to see are  
20 there opportunities in the future, trying to balance the  
21 allocation with where we see the demand.

22 COMMITTEE MEMBER SHARPLESS: Okay, because --

23 COMMISSIONER PETERMAN: Jim McKinney, I think  
24 you had a question -- your comment?

25 MR. MC KINNEY: Yeah, again, I hope we're

1 answering your question.

2 COMMITTEE MEMBER SHARPLESS: Well, the reason  
3 why I'm asking the question is the two questions that  
4 you had at the bottom. You know, should it be a mix of  
5 focus on commercial production or pre-commercial  
6 projects and I couldn't quite figure out where you are  
7 on that issue right now.

8 And also, to ensure market viability, it would  
9 seem the questions that I'm asking are trying to get to,  
10 you know, part -- partially answer that question. Where  
11 are you now, what's driving you now and why are you  
12 asking this question?

13 MR. MC KINNEY: So that in a very general sense,  
14 a general state of the biofuels markets in California  
15 is, again, we have tremendous resources, we have  
16 tremendous technology potential whether it's Silicon  
17 Valley companies, or companies coming out of the San  
18 Joaquin Valley, or Algae Consortia like out of UC San  
19 Diego the potential is huge.

20 The markets, in our view, are not ready to  
21 support self-sustaining industries because they can't  
22 produce these fuels cheap enough to get down under the  
23 market clearing price for gasoline or diesel.

24 Subsidies can play a role but, again, we  
25 subsidize on the capital side and not ongoing

1 production.

2           The carbon markets are not mature yet, not the  
3 LCFS market, it's only at half a percent reduction  
4 statewide to date.

5           What's interesting to us is the Federal RFS-2  
6 credit levels for biodiesel is increasing and we think  
7 there's a correlation with the uptick in biodiesel  
8 production in California.

9           And Joe knows much more about this, than I. So,  
10 we're very hopeful that way.

11           We want to make sure we don't over-fund, get  
12 companies to invest a lot of capital and then sit idle  
13 while they wait for the markets to catch up with where  
14 they are.

15           So, it's a true balancing act and there's no  
16 perfect way to do this.

17           COMMITTEE MEMBER SHARPLESS: So, you just  
18 answered the question, right now you're sort of weighing  
19 on the commercialization side versus the pre-  
20 commercialization side because you don't want -- you  
21 don't want facilities sitting idle to wait for a market  
22 to come to them.

23           MR. MC KINNEY: The bottom line is fuel  
24 consumers will not buy a fuel that's more expensive than  
25 gasoline and diesel. And so you can make it more

1 cheaply, again, through different incentives, through  
2 the carbon credit markets, or some kind of other subsidy  
3 that some other states do. We choose not to do ongoing  
4 payment subsidies.

5 COMMISSIONER PETERMAN: And Jananne, I'll note  
6 that to date the program has supported both commercial  
7 and pre-commercialization, but staff is aware of  
8 tradeoffs with both and so looking for more feedback.

9 You know, Joe, you had another question or  
10 comment?

11 COMMITTEE MEMBER GERSHEN: Yeah, it just doesn't  
12 seem like this is being applied equally to all the  
13 categories. I mean, for example, in September during  
14 the Advisory Committee meeting I prepared and submitted  
15 a white paper for the record and in that we asked for  
16 objective, transparent and metric-based approach used to  
17 evaluating the funding priorities.

18 And it seems in this presentation that request  
19 is being completely ignored, so I'm just wondering.

20 And we've seen other folks, before I was on the  
21 Committee, ask the same question, so we're just  
22 wondering why are these -- why is staff not preparing  
23 these?

24 MR. MC KINNEY: So, again, Jim McKinney here.  
25 I'm not exactly sure, are you asking for some

1 adjustments within the biofuels category or between  
2 biofuels and other categories?

3 COMMITTEE MEMBER GERSHEN: I think both. You  
4 know, we'd like to see it across the board for all the  
5 different categories.

6 And I think that, you know, we see it within the  
7 biofuels but then on a broader level in all the  
8 different categories.

9 I mean you say that, you know, you can't -- you  
10 don't want to oversubscribe folks in biofuels, but is  
11 that not happening in -- you know, in waiting for the  
12 market to develop is that not happening in some of the  
13 other areas, as well?

14 MR. MC KINNEY: So, in terms of adjustments  
15 within biofuels, again, we've had a workshop, we're  
16 discussing it now. We'll have another workshop in  
17 January. We talked to you privately.

18 COMMITTEE MEMBER GERSHEN: Yeah.

19 MR. MC KINNEY: Very happy to continue those  
20 discussions.

21 In terms of macro allocations amongst  
22 categories, this is your opportunity to talk to other  
23 stakeholders about what is the appropriate funding level  
24 at this point in time for each category.

25 And I would just ask you to kind of direct that



1 conversation to other Committee members.

2 COMMITTEE MEMBER GERSHEN: Okay great, thanks.

3 COMMISSIONER PETERMAN: Alberto?

4 COMMITTEE MEMBER AYALA: Thank you. That was a  
5 perfect segue for the comment that I would like to offer  
6 on behalf of the Air Resources Board, again, this is  
7 Alberto Ayala.

8 In the area of fuel production we would like to  
9 reiterate a comment that was provided last time around.  
10 We would like to see a stronger commitment from the CEC  
11 to a strategic investment in the area of renewable fuel  
12 substitutes for the heavy-duty sector.

13 We think that this is critical, particularly in  
14 the area of the diesel substitutes. And, again, this is  
15 very consistent for the Vision for Clean Air document  
16 that you've referred to.

17 So, we would like to add that perspective to the  
18 comments that are being prepared right now.

19 COMMISSIONER PETERMAN: Thank you.

20 Steve?

21 COMMITTEE MEMBER KAFFKA: This is Steve Kaffka.  
22 I'd just like to make a comment about the distinction  
23 between commercial and pre-commercial fuel development.  
24 Certain kinds of transformation technologies are fairly  
25 straight forward and are in play, but even biodiesel

1 enterprises that are proposed that have ready-to-hand or  
2 obvious feedstocks take, sometimes, quite a few years to  
3 develop while the intermediate steps in technologies  
4 that are needed.

5           So, it's something of a vague or moving target  
6 what is a commercial and pre-commercial target and I  
7 think that there is a lot of judgment that has to be  
8 exercised, and analysis, and I think that the staff on  
9 the Energy Commission tries very hard to do that.

10           But I'm not sure that there's an absolute line,  
11 at least in my mind, between what you might call a  
12 commercial or near-to-hand, and longer-term technology.

13           Some things are clearly much more speculative.  
14 I think artificial photosynthesis is far more  
15 speculative than converting woody biomass to fuels.

16           But if you look at the experience of the EPA in  
17 the RFS-2 they've had to postpone, for a number of  
18 years, the cellulosic mandate based on DOE and other  
19 kinds of projects that were set at much higher levels  
20 than have actually appeared.

21           So, that boundary line between commercial and  
22 pre-commercial is a very difficult one to finesse in my  
23 view.

24           COMMISSIONER PETERMAN: Thank you.

25           Any other -- any Advisory Committee members on

1 the phone with a question or comment about the biofuel  
2 production and supply category?

3 Any public comment in the room on this topic?

4 We have one comment, Mr. Carmichael.

5 COMMITTEE MEMBER CARMICHAEL: Thank you. I'd  
6 just add a thought. The staff is well aware and I just  
7 wanted to make sure other Committee members are aware  
8 that legislation passed this summer which over time is  
9 going to limit imports of biomethane into the State,  
10 with an eye towards fostering the growth of biomethane  
11 production within the State.

12 So, there's a lot of effort being made in  
13 different agencies, different groups to advance  
14 biomethane in the State and, yet, we have a long ways to  
15 go.

16 You know, to a comment that Jim made earlier  
17 about the differential in prices, just to give one  
18 example to highlight this, you can sell natural gas at  
19 the pump, natural gas coming out of the ground, fossil  
20 fuel natural gas at the pump for about \$2.00 a gallon.

21 Biomethane renewable natural gas, my number  
22 might be a month or two out of date, but recently it was  
23 \$9.00. And if you sell it for less than \$9.00, you're  
24 probably going to lose money.

25 So, that differential I think highlights how

1 much progress we have to make. And even if your price  
2 point target is gasoline or diesel and you say it's  
3 \$4.00, we're still more than double with the biomethane  
4 production in-State, we're not doing it at scale.

5 And so I want to mention that legislation and  
6 speak complimentarily about how much California is doing  
7 to advance this, but I also want to recognize that we  
8 still have quite a ways to go with biofuel and  
9 biomethane production within the State.

10 And to me, that supports at least this much  
11 funding going into all fuel production for the  
12 foreseeable future.

13 COMMISSIONER PETERMAN: Thank you, Tim.

14 Any public comment or question on this issue, on  
15 the phone?

16 Okay, and we'll also take public comment again  
17 at the end.

18 Okay, moving on to the next category, electric  
19 charging infrastructure, any comments from the Advisory  
20 Committee members?

21 Eileen Tutt.

22 COMMITTEE MEMBER TUTT: Eileen Tutt with the  
23 California Electric Transportation Coalition. I had  
24 sort of two related questions.

25 One, I don't -- is there a number for how much

1 this particular category was over-subscribed or an  
2 estimate?

3 I ask that because we've been working with the  
4 State of California on installing public -- installing  
5 workplace charging for both State employees and guests,  
6 visitors to State buildings and I know that we could  
7 easily go through \$7 million just next year. So, I'm  
8 just wondering -- just in the State, in the statewide  
9 effort.

10 So, I'm just wondering if there's any -- how  
11 much -- how over-subscribed has this category been?

12 COMMISSIONER PETERMAN: I don't know if there's  
13 another question --

14 COMMITTEE MEMBER TUTT: And then the other part  
15 of my question was in terms of the hydrogen fueling  
16 infrastructure do we have -- and this is related only  
17 because I just -- you know, I want to make sure that  
18 we're allocating, although I have no problem with the  
19 hydrogen money.

20 Do we know what the numbers are, what kinds of  
21 estimates of vehicles and the timeline for those  
22 vehicles, or does CARB have those numbers that they  
23 could share with the Committee?

24 Because I think, you know, that number does  
25 stand out and it would help all of us if we understood

1 what the automakers are saying they're going to produce  
2 and what timeline that justifies the expense, so that we  
3 can all defend it?

4 COMMISSIONER PETERMAN: Eileen, we'll come to  
5 the hydrogen infrastructure when we come to that topic.

6 On the electric vehicle infrastructure I don't  
7 know if staff has numbers available right now in the  
8 over-subscription. We don't, but we can get those to  
9 the Advisory Committee.

10 And this is helpful information as well for us,  
11 for our next Advisory Committee meeting in February, if  
12 there's data that the Advisory Committee members have  
13 some questions about or interested in seeing, that can  
14 be provided.

15 I will also note that I believe it was Jim, in  
16 his presentation noted there's going to be an Electric  
17 Vehicle Charging Infrastructure solicitation early in  
18 the winter, as well, which will not -- which will meet  
19 some of that need in addition to the \$7 million that's  
20 proposed here.

21 COMMITTEE MEMBER TUTT: Well, I guess my point  
22 is that I don't think this is enough money and you're  
23 probably not surprised by that.

24 But I'm basing that on just the State building  
25 effort which does not -- which the NRG settlement does

1 not cover.

2 COMMISSIONER PETERMAN: Thank you.

3 Jan?

4 COMMITTEE MEMBER SHARPLESS: Yes, I do realize  
5 that there was the NRG settlement that put other money  
6 on the table.

7 But aside from that lawsuit, is there other  
8 money on the table that's involved in funding the  
9 charging infrastructure for electric? Any other money?  
10 Is the CEC and the lawsuit money the only money on the  
11 table for this?

12 Do we know what the amount is?

13 COMMISSIONER PETERMAN: So, we'll get a comment.  
14 I don't think we can give rise to the specifics.

15 COMMITTEE MEMBER SHARPLESS: Okay.

16 COMMISSIONER PETERMAN: But, Leslie, do you have  
17 a comment?

18 MS. BARODY: In terms of EV infrastructure  
19 funding, you're saying is this the only funding  
20 available, including the NRG?

21 COMMITTEE MEMBER SHARPLESS: Yeah, I just  
22 wondered if there's any other money at the table.

23 MS. BARODY: Probably not at the State level,  
24 but at the Air Pollution Control District level  
25 sometimes there are additional funds.

1 COMMITTEE MEMBER SHARPLESS: Okay, so that's  
2 small?

3 MS. BAROODY: Yes.

4 COMMITTEE MEMBER SHARPLESS: Small in comparison  
5 to other investment opportunities. Okay.

6 COMMISSIONER PETERMAN: Yeah, I don't think we  
7 can say what the total other funding is available.

8 COMMITTEE MEMBER SHARPLESS: Because there is an  
9 issue about what kind of charging to put in these  
10 stations, right?

11 Whether you're doing fast charging or whether  
12 you're doing the kind of charging that we see in the  
13 residential. And I don't know how that's being resolved  
14 and how your money is being affected by that sort of  
15 uncertainty as to how you resolve that policy question  
16 and where those chargers are going to be placed.

17 But there's probably a blueprint, is there  
18 Eileen, that I'm unaware of, that deals with that  
19 question?

20 COMMITTEE MEMBER TUTT: Well, what I would say  
21 is that it depends and we do -- each utility, as well as  
22 the Energy -- the EPRI, the Energy Policy Research  
23 Institute, we've been working with the State of  
24 California and business, and what we do is we tend to go  
25 into a building and determine, for example for workplace



1 charging, how many people work there? Are they full  
2 time employees? Are they part-time employees? How many  
3 electric vehicle drivers do you have now? How many do  
4 you assume you'll have?

5 And that really determines the kind of charging.  
6 So, what we're finding, which probably isn't surprising  
7 to you, is that level one charging is great for places  
8 like airports, and work places, and home for that  
9 matter.

10 So, we need a mix and in terms of the DC fast  
11 charging there are a number of maps. There's two  
12 different maps that I know of, one that was done by  
13 Nissan, another that was done by UC Davis that shows  
14 sort of what we need statewide.

15 And the NRG settlement, I think is really making  
16 a dent in getting those stations in.

17 So, for fast charging it's a lot easier. For  
18 things like workplace charging or home charging it  
19 really just depends on what is needed in a particular  
20 location and every utility is very committed to working  
21 with their customers to make sure they get what they  
22 need to satisfy them.

23 But the nice thing about electric vehicles is  
24 that the charging options -- there's so much flexibility  
25 and so many options.

1           And so for whatever you need, you can pretty  
2 much get it.

3           COMMITTEE MEMBER SHARPLESS: So, you've said --

4           COMMISSIONER PETERMAN: And Jananne, I'll also  
5 note, too --

6           COMMITTEE MEMBER SHARPLESS: Oh, I'm sorry.

7           COMMISSIONER PETERMAN: -- just to clarify, that  
8 the program has supported level two charging, workplace  
9 charging --

10          COMMITTEE MEMBER SHARPLESS: Right.

11          COMMISSIONER PETERMAN: -- fast chargers,  
12 multiple-unit dwelling chargers.

13           I mean I think the -- to Eileen's point, staff  
14 has recognized that a mix is needed and that we have not  
15 saturated any of those markets to date.

16          COMMITTEE MEMBER SHARPLESS: Yeah. I guess I  
17 was just trying to, as an Advisory Committee member, try  
18 to figure out if I were to advise on the \$7 million  
19 where that puts us in the target who -- you know, and  
20 how far off are we from the target and what are the  
21 ramifications of that.

22           And I don't have a strong understanding of that  
23 so I can't comment on that.

24          COMMISSIONER PETERMAN: I'll have the final  
25 comment on that, which is with the Governor's Zero

1 Emission Vehicle Plan and a target for electric vehicles  
2 that gives us something to look towards in terms of  
3 what's going to be the expected demand and then what  
4 would be the sufficient charging.

5 And that's why staff has noted we're looking at  
6 a statewide charging infrastructure plan and working on  
7 that.

8 Are there any other questions or comments about  
9 the electric charging infrastructure?

10 Tyson, please.

11 COMMITTEE MEMBER ECKERLE: Great, thank you.

12 So, just one thing, you know, when you read the plan it  
13 talks very clearly about how the funding allocations are  
14 not a prioritization, necessarily, but reflect the need  
15 of the program.

16 And I think one of the suggestions -- I think a  
17 lot of people, when they look at this, will just see the  
18 chart, you know, and see that as kind of a rank  
19 prioritization.

20 And so I would imagine, at least from my mind  
21 when I was looking at the zero emission vehicles --

22 COMMITTEE MEMBER CARMICHAEL: I only look at the  
23 chart.

24 COMMITTEE MEMBER ECKERLE: Yeah, so when I look  
25 at it, I look at, you know, the zero emission vehicles

1 and in relation to the ZEV Action Plan. And it might be  
2 helpful to have a little asterisk in the electric  
3 charging infrastructure and just highlight how many  
4 stations you're planning to get out of the energy  
5 settlement so it kind of brings some balance in that  
6 first glance type thing.

7 So, I don't know if that's appropriate or not  
8 but --

9 COMMISSIONER PETERMAN: Maybe we should have an  
10 asterisk that people should read the plan --

11 (Laughter)

12 COMMISSIONER PETERMAN: -- because there's a lot  
13 of text that goes with it, but duly noted.

14 John? And welcome John Shears, Advisory  
15 Committee member to the table.

16 COMMITTEE MEMBER SHEARS: Good morning everyone  
17 and --

18 COMMISSIONER PETERMAN: One second, John.

19 COMMITTEE MEMBER SHEARS: Sorry.

20 MS. BAROODY: I'm sorry to interrupt. Yeah,  
21 just for the record, Tyson, on page 28 of the Investment  
22 Plan we do specify the energy chargers so --

23 COMMITTEE MEMBER ECKERLE: Well, I totally  
24 appreciate that and see that. I'm just saying like when  
25 people look at the table, you know, that might be the

1 only thing they see, that's all.

2 MS. BAROODY: Oh, I see.

3 COMMISSIONER PETERMAN: Yeah, and I think that's  
4 a generally good comment. This has come up before about  
5 how do we present the table and we have been very clear  
6 to caveat in our comments and our plan that it's not a  
7 prioritization. But it is hard to present numbers  
8 without people seeing it accordingly.

9 And so acknowledging the challenge that we have  
10 an entire Investment Plan and there's this table,  
11 feedback is always welcome on anything that would make  
12 it clearer as a snapshot.

13 John?

14 COMMITTEE MEMBER SHEARS: Good morning everyone.  
15 I'm sorry I missed out on the presentation, competing  
16 calls, et cetera.

17 I just wanted to sort of comment on this  
18 relative tension on the ZEV technologies. Our shop  
19 supports both EVs and fuel cell vehicles.

20 And, you know, the Energy Commission's in the  
21 position, as are the other agencies in the area, and the  
22 interagency working group for the ZEV Action Plan of  
23 implementing the plan.

24 And the plan speaks to, you know, one million  
25 ZEVs 2020, 1.5 million ZEVs 2025, which needs to be

1 corrected, have the page noted. But in the draft it  
2 says "PEVs" rather than "ZEVs" like on page 20 or  
3 something.

4 And there's been a lot of effort and a lot of  
5 investment that's been made on the EV side and we  
6 support, you know, more investment both in terms of on  
7 the AQIP side at ARB, and also for the charging  
8 infrastructure.

9 The problem on the hydrogen side is that Federal  
10 funds have basically been directed towards research,  
11 development, and tech validation type projects. There's  
12 no money that's been made available at the Federal  
13 level, really, to begin early commercialization or pre-  
14 commercialization steps.

15 So, the only game in town for fuel-cell  
16 vehicles, really right now, is the Energy Commission,  
17 pending what might come under the new administration in  
18 Washington.

19 You know, besides the money that California has  
20 invested and besides the money that the air districts  
21 are investing in EVs, there have been tens of millions,  
22 if not hundreds of millions of dollars from the Federal  
23 side that have also been directed towards EV  
24 commercialization and the supporting industries.

25 So, I just want to acknowledge, you know, the

1 challenge that agencies, the Energy Commission included,  
2 face in terms of trying to implement on the Action Plan,  
3 but also the relative -- you know, where the relative  
4 investments are and, certainly, I'm supportive of  
5 looking for more money for charging.

6 But, you know, if the car companies are going to  
7 be able to execute on the Clean Cars Regulation and the  
8 ZEV program, within that Clean Cars initiative,  
9 California has to support the development of the fueling  
10 market for those vehicles.

11 And, you know, everyone that works on the fuel  
12 cell technology, you know, there's a very high  
13 confidence that fuel cell technology is, indeed -- you  
14 know, has made great strides and will make the necessary  
15 strides for that to be a commercial technology, you  
16 know, in the 2020 window.

17 COMMISSIONER PETERMAN: John, thank you for your  
18 comments. And we'll be discussing hydrogen  
19 infrastructure next, but I think your -- you've raised  
20 another point for all of us to consider about what the  
21 other funding streams are out there for all these  
22 technologies.

23 Any Advisory Committee members on the phone want  
24 to comment on the electric charging infrastructure  
25 funding proposed?

1           Then I'll ask if there are any audience comments  
2 on this topic?

3           Ma'am, please come up. Since we're not set up  
4 quite for public comment, yet, we're going to ask you to  
5 go to the podium. But in the interest of trying to keep  
6 these topics together, in content, I would like to take  
7 a little public comment while we have it.

8           Please, introduce yourself.

9           MS. ADAMS: Thank you very much. My name is  
10 Kitty Adams, I'm the Executive Director of Adopt A  
11 Charger, a nonprofit organization that seeks to help  
12 state parks, national parks, museums and universities  
13 install charging infrastructure.

14           And I just wanted to suggest to the Advisory  
15 Committee that they give some serious consideration to  
16 destination charging. It's really great that there's  
17 charging at the local drugstore, but having owned an  
18 electric car since 2002, I see a real need for chargers  
19 that are at popular destination locations 30 to 40 miles  
20 from home, where people are spending two to four hours  
21 there to get a significant charge.

22           COMMISSIONER PETERMAN: Thank you for your  
23 comment.

24           MS. ADAMS: Thank you.

25           COMMISSIONER PETERMAN: Anyone else in the room



1 with a comment on electric charging infrastructure?

2 Also, any public comment on this issue on the phone at  
3 this time?

4 And Mr. Shears has a comment in the room.

5 COMMITTEE MEMBER SHEARS: It seems like it's  
6 something that's appropriate for the Infrastructure Plan  
7 that the Energy Commission's contemplating because it's  
8 part of a larger strategy, I guess the issue would be  
9 what would be the appropriate type of charger?

10 Would you want to be using, you know, a fast  
11 charger as the destination charger or would a 240-volt  
12 be more practical?

13 So, there are those types of considerations that  
14 need to be addressed but, certainly, it's a great way of  
15 extending the range and the utility of the vehicle, so I  
16 just thought I'd note that.

17 COMMISSIONER PETERMAN: Thank you.

18 Also, I'll note we're getting oral comments  
19 today. We look forward to your written comments, at  
20 which point you may suggest some changes to the funding  
21 categories.

22 I'll just ask as you do that, if you suggest a  
23 category increase have a recommendation, as well, about  
24 where you would decrease as this is a zero sum game.

25 But this is good dialogue so far and, again, we

1 will have one more draft of the plan and another public  
2 meeting before finalizing it in the spring.

3 So, with that let's turn to hydrogen fueling  
4 infrastructure and we'll take any comments from the  
5 Advisory Committee on this topic.

6 And I don't know if we would want to go back  
7 to -- Eileen, do you want to make your comment again? I  
8 think you had a question about --

9 COMMITTEE MEMBER TUTT: Thank you, Commissioner,  
10 Eileen Tutt with CAL ETC. I was just wondering if we  
11 could get, as an Advisory Committee, sort of the  
12 estimate of the number of vehicles anticipated per the  
13 automakers and timing for those vehicles?

14 COMMISSIONER PETERMAN: So, are you going to  
15 respond to that question, specifically?

16 COMMITTEE MEMBER KAFFKA: No, I wanted to add  
17 another one.

18 COMMISSIONER PETERMAN: Okay. Well, let's --  
19 I'm thinking of how I'm going to approach this.

20 Do you want to comment on this?

21 COMMITTEE MEMBER ECKERLE: Yeah.

22 COMMISSIONER PETERMAN: I'm turning to Tyson  
23 Eckerle as his organization has done some research in  
24 this area.

25 COMMITTEE MEMBER ECKERLE: Yes, I think the main

1 thing with the fuel cell vehicle numbers, the best  
2 numbers we have right now are the California Fuel Cell  
3 Partnership numbers, the 53,000 target by the end of  
4 2017.

5 And so the critical part, now, is that the  
6 automakers are making their decisions now about those  
7 vehicles that will be brought out in that time period.  
8 And so this piece of funding is critical to their  
9 confidence that the infrastructure will be there.

10 So, these numbers are fully contingent of the  
11 availability of these public fueling infrastructures.  
12 So, if there are 68 stations, they're saying we can  
13 bring -- by the end of 2015 we can have 53,000 fuel cell  
14 vehicles by the end of 2017.

15 So, I don't know, does that kind of --

16 COMMISSIONER PETERMAN: And I think that answers  
17 it, initially.

18 And I'll also note that the Fuel Cell  
19 Partnership has a -- it's full name, the Deployment Road  
20 Map, which covers some of these details and,  
21 particularly, some of the vehicle numbers, as well as  
22 what they see as the projected station need.

23 And so that road map is publicly available for  
24 those interested in having more detail on that topic.

25 Eileen?

1           COMMITTEE MEMBER TUTT: I guess I understand  
2 that we have projections, but I think that CARB actually  
3 has numbers from automakers, sort of commitments. And  
4 that, I think, is more compelling than -- it's just like  
5 Cal ETC trying to project how many electric vehicle  
6 charging stations are needed.

7           I think there are -- you know, coming from the  
8 automakers, the automakers are projecting how many  
9 vehicles they're going to build and that information  
10 would be helpful. And I know that CARB has that I think  
11 it's available in aggregated format for all of us.

12           COMMISSIONER PETERMAN: We'll turn to Alberto,  
13 who's got his card up anyway.

14           COMMITTEE MEMBER AYALA: Yes, thank you. I can  
15 briefly try to address that question and we'd be more  
16 than happy to come back to the Committee and others who  
17 are interested, and provide the actual references and  
18 the numbers.

19           But I think at this point in time I'll just echo  
20 the response that was given before that the -- our  
21 understanding is that by 2017 we're going to see on the  
22 order of 50,000 vehicles, fuel cell vehicles on the  
23 road.

24           We are pleased to hear confirmation from the car  
25 makers that they are ready to roll out technology in the

1 2015 time frame.

2           So, to circle back to my initial comment in this  
3 area, we just want to acknowledge the Commission  
4 including the funding level at the stated amount.

5           Obviously, infrastructure for us is a critical  
6 component in the path towards achieving the goals of the  
7 vision 2050. So, we just wanted to acknowledge that and  
8 fully support the proposal.

9           COMMISSIONER PETERMAN: Steve, you had your card  
10 up next.

11           COMMITTEE MEMBER KAFFKA: Yeah, I think that  
12 this is a potentially miraculous technology. I mean the  
13 idea of having water be the emission from an engine is a  
14 terrific idea.

15           However, as I look at the larger landscape of  
16 feedstock supply and the sources of where this hydrogen  
17 might come from, it's not at all clear to me what the  
18 greenhouse implications are of -- and where the hydrogen  
19 will actually come from.

20           And this is not probably the forum in which this  
21 needs to be debated and I'm sure there are others, but  
22 it is a concern that occurs to me. And so I think at  
23 some point it might be addressed in this context.

24           COMMISSIONER PETERMAN: Thank you. And since,  
25 Jananne, I'm going to go to Will, first, because he's

1 had his little bus turned over. I didn't realize that  
2 that was a nametag. And then we'll turn to you,  
3 Jananne, for your question.

4 COMMITTEE MEMBER COLEMAN: So, I have read the  
5 plan, although I can't say that I've read all of the  
6 supporting documents associated with the plan, there's  
7 quite a few of them.

8 But I want to echo some of the other questions  
9 about this category.

10 So, when I look back over the last few years in  
11 terms of trying to understand the carbon footprint and  
12 where the sources of hydrogen are going to come from it  
13 hasn't been altogether clear in these plans how we're  
14 thinking about this apples-to-apples comparison.

15 I remember in one of the early plans there was  
16 an analysis. And if I remember that correctly, it was  
17 about five years ago, it was you really required biomass  
18 as a feedstock in order to get down even to the same  
19 levels as cellulosic ethanol.

20 And so I think one of the things that I have  
21 concerns about in terms of this allocation is, again  
22 going back to what Joe said and what he asked for, which  
23 is where is the apples-to-apples comparison that says to  
24 us that this is the most rational use of these dollars  
25 over the appropriate period of time?

1           And I think we've been asking for this for quite  
2 some time, for at least five years in terms of this  
3 analysis. I'd love to see it, but I'd love to see it on  
4 a number of different attributes.

5           So, I think one is in terms of the actual  
6 footprint on a per-unit basis, obviously, it gets a  
7 little harder when you start talking about translation  
8 between fuels and vehicles types, and whatnot.

9           But on a vehicle-mile-travel-basis you can do  
10 that comparison, that's not that hard to do and it would  
11 be very helpful to see that in the context of the size  
12 of this allocation to the hydrogen fueling  
13 infrastructure.

14           The other part of it that I have a question  
15 about is what the logic is when we look at the total  
16 number of vehicles that this will be supporting and the  
17 total carbon reductions available as a result of that.

18           So, if I look out even just at biofuels, where  
19 the assumption is about 25 grams per mega joule, we've  
20 got 405,000 vehicles on the road, or maybe it's 450,000  
21 vehicles on the road today in California. And that  
22 supports a certain amount of consumption over a certain  
23 period of time.

24           But what we're talking about here is about  
25 50,000 vehicles supported by 2017 and the different cost

1 is phenomenal.

2           So, if you look at the fueling infrastructure  
3 that we've supported through this program for biofuels,  
4 I think it's on the order of about \$15 million for  
5 about, I think it was about 205 stations.

6           Whereas we're looking at spending another \$28  
7 million and then another \$20 million on fueling  
8 infrastructure in addition to the prior, I think it was  
9 \$18 million on fueling infrastructure for hydrogen for  
10 17 stations.

11           And so these stations may be the most efficient  
12 fueling stations I've ever seen and do, you know, double  
13 time fueling, but I highly doubt it.

14           So, you know, I guess my question is where is  
15 the logic that says this is what we should be doing at  
16 this time?

17           Because one of the rationales for not doing more  
18 in the biofuels fueling infrastructure side is that we  
19 don't want to get ahead of a market, we don't want a  
20 bunch of stations sitting there not pumping fuel. And  
21 yet, when I look at the report it actually says that the  
22 rationale for -- or the challenges for the biofuel space  
23 are that there's not enough fueling stations.

24           And so I'm just trying to understand the  
25 consistency of the logic between how we look at



1 biofuels, how we look at electric fueling stations and  
2 how we look at hydrogen, and the process and the timing  
3 around seeding those markets.

4 I understand these things take time to evolve,  
5 there are path dependencies, but it's not at all clear  
6 to me how we're thinking about that in this context and  
7 the dollars associated with that particular line item.

8 COMMISSIONER PETERMAN: Thank you for those  
9 comments. Let me offer a couple of my own.

10 Regarding the overall question or the desire for  
11 an apples-to-apples comparison we did have that  
12 discussion in our September meeting, as well, and part  
13 of that discussion has been around how do you do an  
14 apples-to-apples comparison when there are a number of  
15 metrics by which the program is -- you know, metrics the  
16 programs is trying to accomplish.

17 That being said, as was noted in the earlier  
18 presentation, we'll be doing our next Benefits Report as  
19 a part of the 2013 IEPR and that's a process that needs  
20 to start now.

21 And so I will ask staff to go back and consider  
22 that question, that request has been raised by the  
23 Committee members and we take that seriously, ask them  
24 to start scoping out how we would do such an analysis.

25 And I appreciate, also, that this information

1 that folks would appreciate having prior to an adoption  
2 of the plan, and so we'll go back and look at timelines,  
3 acknowledging the various other pieces of work that need  
4 to be done.

5           And then on the general question about logic, I  
6 think your points are heard. You know, generally, made  
7 the point before that we're looking at each technology  
8 and fuel infrastructure space on its own, although one  
9 has to look across as well and appreciate if there's  
10 different treatment.

11           And so, we'll go back and reflect on that.

12           COMMITTEE MEMBER COLEMAN: Yeah, I mean I might  
13 just add that I think in terms of the ways that you look  
14 at these technologies and how you do that apples-to-  
15 apples, I think the market readiness component is  
16 incredibly important.

17           And there have been prior attempts at this. I  
18 know that TIAX did their initial study a long time ago.

19           But I think that we have to be very conservative  
20 about what we expect the private market to do in the  
21 context of some of these things. And I think the cost  
22 sharing elements associated with some of the other parts  
23 of the program are a very good indicator as to whether  
24 the private market is willing to do this.

25           And so I think some of it is an apples-to-apples

1 question, but you can only sort of assess so much and I  
2 think part of it is a program design question, which is  
3 can you create a level of partnership between the  
4 private and the public sector such that you're ensured  
5 that it's going to happen.

6 COMMISSIONER PETERMAN: Thank you.

7 Jan.

8 COMMITTEE MEMBER SHARPLESS: Yeah, I guess we're  
9 all sort of poking at this from -- it's the same  
10 problem, but we're poking at it from different  
11 directions, so let me poke at it from a little bit  
12 different direction than what Will was saying, but the  
13 concern is the same.

14 I'm assuming, and maybe it's a wrong assumption,  
15 that we've got overall goals within our program here,  
16 and one of them is, of course, to meet the global  
17 climate change targets. There's other ones that deal  
18 with fuel, there's other ones that deal with air  
19 quality. All of these targets go together to define  
20 whether or not you fund certain things.

21 You're not going to fund something that's going  
22 to go contrary -- this is an assumption -- that's going  
23 to go contrary to the goals of the program.

24 So, therefore, when you're looking at hydrogen,  
25 you're looking at hydrogen sources that aren't going to

1 blow your program in a different direction. It's not  
2 going to blow the program up from meeting global climate  
3 change.

4           So, I guess one of the questions I have for  
5 staff is in funding these hydrogen infrastructure  
6 stations in the past has that been one of the conditions  
7 is the sources of the hydrogen, to make sure that the  
8 production of hydrogen, itself, is not taking us -- is  
9 not having an unintended consequence in meeting our  
10 goals?

11           I'm assuming that that's part of what you're  
12 looking at. Is that right, wrong?

13           MR. MC KINNEY: Yeah, so a couple of -- Jim  
14 McKinney here, a couple of points in response.

15           First, the near term projected sales volume for  
16 hydrogen for fuel cell vehicles, I think even at the  
17 53,000 level, this is very small compared to the total  
18 output from the industrial gas companies.

19           So, whether it's Air Products, or Linde, or  
20 Praxair, any of the big kind of global concerns there,  
21 they produce a lot of hydrogen for industrial purposes.  
22 And again, kind of the output for vehicle fueling is  
23 quite modest.

24           And on the second point in terms of renewables,  
25 you know, there is SB 1505, which is awaiting a

1 rulemaking from the Air Resources Board.

2 In our current solicitation it is --

3 COMMISSIONER PETERMAN: Can you say what that  
4 is, 1505?

5 MR. MC KINNEY: SB 1505 requires that all  
6 hydrogen fuel produced and sold in California contain  
7 one-third renewable content by a date certain, and  
8 that's pegged to sale volumes and vehicle production  
9 levels.

10 And we have -- it hasn't gone through a  
11 rulemaking, yet, but we have an equivalency clause in  
12 our current solicitation so there has to be a comparable  
13 amount so, again, one-third renewable hydrogen in our  
14 current solicitation.

15 COMMISSIONER PETERMAN: And also, Jim, can you  
16 just note that there is a set aside for projects that  
17 are 100 percent renewable, as well?

18 MR. MC KINNEY: Yeah, and we're also trying  
19 something new with this current solicitation, which is  
20 to set aside \$3 million for 100 percent renewable  
21 hydrogen, whether that's produced on site or at an  
22 industrial facility and shipped in.

23 COMMITTEE MEMBER SHARPLESS: So, that's \$3  
24 million of this \$20 million, proposed \$20 million?

25 MR. MC KINNEY: So, this is a previous year's

1 numbers.

2 COMMITTEE MEMBER SHARPLESS: Oh, previous year's  
3 numbers.

4 MR. MC KINNEY: \$29 million total, \$3 million  
5 set aside for renewable hydrogen. We're expecting one,  
6 two, perhaps three stations for that.

7 COMMITTEE MEMBER SHARPLESS: Now, is there an  
8 over-subscription in this area as well?

9 MR. MC KINNEY: For hydrogen?

10 COMMITTEE MEMBER SHARPLESS: Yeah.

11 MR. MC KINNEY: Not generally.

12 COMMITTEE MEMBER SHARPLESS: Not generally.

13 MR. MC KINNEY: We'll see, this is a -- we've  
14 got a lot of money on the table right now. We'll see  
15 what the market response is.

16 COMMISSIONER PETERMAN: Jan, let me -- you might  
17 have a follow-up question, but let me -- there's a  
18 number of members with questions so let's get to them.  
19 If you have a follow-up one afterwards, that's fine.

20 Alberto?

21 COMMITTEE MEMBER AYALA: Actually, if I may, I  
22 wanted to follow up on some of the couple of comments  
23 that I've heard because I think it is important to  
24 establish clearly.

25 On the logic question, I would like to

1 acknowledge that that is a good question, but we need to  
2 make sure that finding the answers to those questions  
3 doesn't diffuse from the importance of making progress  
4 and proceeding with some of the funding of the  
5 infrastructure.

6           Because I think that the key point that we need  
7 to keep in mind is the fact that the car makers are  
8 ready to deploy technology real soon.

9           The logic, I would suggest perhaps can be found  
10 in some of the existing references that have been  
11 discussed here. For instance, we have our Technical  
12 Support document for the Clean Cars Regulatory package,  
13 which gets into some of those questions in terms of the  
14 comparison of apples-to-apples with some of the  
15 different fuels.

16           Certainly, the Fuel Cell Partnership plan has  
17 some of that information.

18           So, we'd be more than happy to continue to work  
19 with the Commission to perhaps pull together some of  
20 those numbers to provide more specific answers in terms  
21 of the numbers.

22           But just for reference because I think it is  
23 important to make sure that we understand -- we  
24 understand, again, the logic behind it.

25           On the lifecycle basis steam reforming to get

1 hydrogen into a fuel cell power vehicle results in  
2 approximately a 50 percent reduction in greenhouse gas  
3 emissions relative to current gasoline.

4 So, we're confident and again we need to note  
5 that we're moving in a direction that is going to help  
6 us achieve the greenhouse gas reduction goals, as well  
7 as some of the very critical air pollution challenges  
8 that we continue to face. Thank you.

9 COMMISSIONER PETERMAN: And I'll just note as a  
10 comment, as well, with the Wykowski Bill we now do an  
11 Investment Plan Update which is intentionally meant to  
12 be shorter, and not the full scope of analysis we did a  
13 couple of years ago.

14 And I also appreciate reading the report can be  
15 challenging because there's more information you would  
16 like. And so we're trying to balance that.

17 But hearing some of the information that folks  
18 are interested in today, we'll revisit the write-up to  
19 see if we can strengthen it.

20 Let's just take this row from right to left.  
21 Joe.

22 COMMITTEE MEMBER GERSHEN: Thanks, Joe Gershen  
23 here. Just using Jan's metaphor, I'm going to poke at  
24 this from another perspective.

25 You had mentioned waiting for the next IEPR to



1 do that analysis and, you know, from a business -- I'm a  
2 business person and from my perspective, if I wait until  
3 next year to get the data that I need to prepare a  
4 budget for my business, my business wouldn't make it to  
5 next year. You know, you have to have the metrics now.

6 So, I'm just trying to understand why we can't  
7 get those metrics sooner than waiting for next year's  
8 IEPR.

9 And all due respect it just -- you know, from a  
10 business perspective it doesn't make sense to me.

11 Thanks.

12 COMMISSIONER PETERMAN: I know, and I think some  
13 of the metrics you're interested in we have presented in  
14 different formats before, and it's a very specific  
15 request. And so as was noted earlier, staff, the same  
16 staff that's working on getting out the solicitations  
17 and also doing the plan is also having to lead that  
18 analysis. And I see it as a priority, but I can't speak  
19 for what staff's capability will be able to do it on, so  
20 we'll try to do it on a timely manner. But point duly  
21 and urgency duly noted.

22 John.

23 COMMITTEE MEMBER SHEARS: Yeah, just sort of  
24 want to follow up on a --

25 COMMISSIONER PETERMAN: Can you move your

1 microphone a bit more?

2 COMMITTEE MEMBER SHEARS: Yeah, sorry, I was  
3 going to move closer as I was getting my thoughts  
4 together.

5 I just want to comment on some of the other  
6 observations and concerns. You know, independent of all  
7 the work that's been done in California looking at ZEV  
8 technologies and, you know, fuel cell vehicles, plug-in  
9 vehicles are ZEV technologies, anywhere else in the  
10 world that's looked at what -- you know, various  
11 jurisdictions, various countries, various regions need  
12 to do to meet climate goals they all come to the same  
13 conclusions which is, basically, it can't be done unless  
14 you use both plug-in vehicles and fuel cell  
15 technologies.

16 A bit issue in the air districts is not just the  
17 climate emissions that are associated with  
18 transportation, but also the air quality emissions. And  
19 the vision, the 2050 Clean Air Vision document, you  
20 know, which right now, currently, the only version  
21 that's public is the draft, the June 27th draft. I  
22 understand the final draft might be before the Board at  
23 the January Board hearing, the CARB Board.

24 It also, you know, goes over this ground and  
25 shows, you know, that it's going to be quite daunting to

1 try and meet air quality and climate goals for  
2 transportation without using both technologies and using  
3 very, very low carbon electricity.

4           When we get into these discussions about making  
5 apples-to-apples comparisons, I think part of the  
6 problem is that people see a hydrogen fueling stations  
7 that might cost \$2 million or \$3 million and they go,  
8 oh, wow, you know, and there's only like 200 fuel cell  
9 vehicles in the roads in California right now.

10           And, okay, if things work out we'll have 50,000  
11 vehicles in 2017, 53,000 vehicles. And the see those  
12 stations and they see how few fuel cell cars there are  
13 right now and they go, wow, what a waste of money.

14           But, you know, they look at, okay, \$1,500 maybe,  
15 on the expensive side, to put a charger in your garage.  
16 If you're lucky it might be just a few hundred, but it  
17 could be up to \$1,500 to \$2,000 relative to a single  
18 car.

19           The psychology of that seems to, I think,  
20 influence how people tend to be viewing the differences.

21           When you aggregate the sum investments I think  
22 you're looking at similar levels of investment to serve  
23 similar size fleets, recognizing that fuel cell vehicles  
24 are behind where plug-ins are.

25           And the case is not clear that plug-ins are

1 going to be, you know, enthusiastically received.  
2 Everyone's -- you know, here in California we're working  
3 mightily to make sure that at least the California  
4 market has a success for plug-ins. You know, they're  
5 all risky.

6 In terms of commercialization and creating  
7 markets, the strategy as part of the road map is  
8 focused, in fact, on producing market clusters that will  
9 generate by concentrating where the vehicles are  
10 deployed strategically with, you know, various -- you  
11 know, so that the fueling is placed within regions that  
12 are aligned with where the OEMs will start to create  
13 initial markets.

14 The strategy that's been developed there is to  
15 move the market as quickly as possible to where it can  
16 become a self-sustaining market and not just for the  
17 vehicles, but also for the fuel retailers.

18 So, the whole strategy is, at least in those  
19 initial clusters, to get the vehicle volumes up so that  
20 in fact the stations will start paying for themselves,  
21 you know, sometime shortly after the 2017 window.

22 You know, of course then the problem becomes  
23 extending those markets through the destination  
24 strategies that are also part of the road map.

25 But, you know, the people that are working on

1 crafting the strategy around fuel cell vehicles are very  
2 cognizant of trying to get hydrogen onto a self-  
3 sustaining strategy as soon as possible.

4 Now, in terms of making apples-to-apples, and I  
5 would rather say apples-to-orange comparisons, I'm  
6 concerned about where we define the boundaries about  
7 where we're going to include expenses.

8 Okay, a lot of this stuff on hydrogen is  
9 explicitly sort of expressed in relation to the vehicles  
10 and the fuels.

11 Whereas when we talk about plug-in vehicles, a  
12 lot of the associated benefits that come with those  
13 vehicles are due to other investments and other policy  
14 choices that originally were independent of the plug-in  
15 vehicle strategy in the State.

16 And we've, you know, been able to capitalize on  
17 the advantage of those investments that have been made  
18 in the electrical system within the State.

19 But the question then becomes, you know, do we  
20 start looking at what are the costs, associated costs to  
21 get to similar benefit levels on the electric grid side,  
22 that we're also trying to explicitly get to on the fuel  
23 cell side.

24 I think we also have to be careful about, you  
25 know, how we frame the questions and where the

1 boundaries are. Because I think if you acknowledge that  
2 there are a lot of investments that happening in the  
3 grid system that plug-ins can take advantage of, and  
4 we're trying to get hydrogen through there, the intent  
5 in SB 1505 was essentially an RPS type intent.

6 You know, we have to be careful that we don't  
7 start, you know, entering into dangerous and even more  
8 conflicting ground when we go that way.

9 COMMISSIONER PETERMAN: Thank you. And there's  
10 obviously a lot of things to consider with this type of  
11 analysis which is why you haven't seen it, yet.

12 But we'll be soliciting input on how to proceed.  
13 Tim.

14 COMMITTEE MEMBER CARMICHAEL: Thank you. I have  
15 several comments. First, on Will's point about the  
16 importance of metrics, objective metrics for this  
17 program, as my testimony over the last couple of years  
18 reflects, I strongly agree with the importance of that.

19 Not just for this group, but for the politics  
20 outside of this room that we will need to navigate in  
21 the future years. It's a very important evolution for  
22 this program to do a better job of embracing objective  
23 metrics in picking the projects that are going to get  
24 funded.

25 That said, today I don't think you can come up

1 with a metric that is going to justify the investment in  
2 hydrogen. But I, personally, am okay with that, though  
3 I'm a bit jaded on hydrogen because I've been working on  
4 it for so many years and we haven't seen the progress we  
5 thought we would by now.

6 I still think that -- you know, and this point's  
7 kind of been made by a few other speakers, we're the  
8 only place in the world that's really pushing this right  
9 now.

10 And if you believe it's going to be a  
11 significant part of the 2030 fleet, the 2040 fleet and  
12 beyond, it's going to take some significant investment  
13 before that to get there.

14 We're all going to have our own opinions on  
15 what's a reasonable amount. And when we're using public  
16 money there's a lot of tension around this because even  
17 if you're talking about a billion dollars, what fraction  
18 of a billion dollars is a reasonable amount to roll the  
19 dice with or to say, you know what, we may not see  
20 results from this for five, ten years or longer.

21 So, I personally am on board with a significant  
22 investment for the next few years, as we've talked about  
23 in this forum as well as in the Legislature.

24 What I'm worried about is three years from now,  
25 and we're not seeing vehicles coming to market, what are

1 we going to do then? Because we can't have 50,000  
2 vehicles appear in December 2017, that's not going to  
3 work.

4           So, I actually -- you know, I want metrics, I  
5 want more metrics. I think this body needs to have some  
6 way of saying we're going to use the metrics for this  
7 percentage of our funding, but we're going to have some  
8 chunk of funding every year that's not going to be  
9 subject to those metrics. And I think that's how we do  
10 it in a reasonable way.

11           That's my suggestion on how we do that and it's  
12 not just hydrogen that faces this challenges, to be  
13 clear. It may face it more than others today, but it's  
14 not just hydrogen that faces this challenge.

15           The feedstock, there's been alluding to this,  
16 but not clarify that today I think the primary feedstock  
17 for hydrogen is natural gas, and I think for the  
18 foreseeable future it's likely to be natural gas.

19           That, actually, is a great segue to a point that  
20 some of our members asked me to make today, on behalf of  
21 the Natural Gas Vehicle Coalition, and to refer people  
22 to the plan, page 31, there's a little section here on  
23 hydrogen. And I'll just give people a second to get  
24 there.

25           But the second paragraph on page 31 includes the



1 following sentence, "This funding will not exclude  
2 stations that can serve multiple uses, such as non-road  
3 applications or transit projects, as long as those  
4 stations also support the expansion of light-duty fuel  
5 cell vehicles."

6 That's fine. But what this led several of my  
7 members to ask is there's not much clarity here on the  
8 intention of CEC relative to hydrogen going in  
9 partnership or co-sited with other alternative fuels.

10 And that's a big question for some of my members  
11 because I've got some members that only see a limited  
12 potential for a natural gas/hydrogen partnership, but I  
13 have some members that see a lot of potential for  
14 natural gas being the primary pathway to get to the  
15 hydrogen deployment that even the most ardent advocates,  
16 you know, envision.

17 And so the question is, is CEC's current vision  
18 for this round of funding that it makes sense to look  
19 for projects that would site hydrogen and natural gas at  
20 the same facility?

21 And the reason why some of my members think that  
22 makes sense is because they have experience working with  
23 compressed gases and it's not the same as working with  
24 the liquid fuel.

25 And your feedstock is natural gas and you can,

1 you know, we believe can extract hydrogen maybe at the  
2 station, right there, for the hydrogen refueling.

3 So, it's something that CEC needs to clarify,  
4 we're asking CEC to clarify. I raise it in this forum,  
5 as opposed to our written comments, so the Advisory  
6 Committee members are chewing on this, too. What do  
7 people think about this idea?

8 And then the last point is I personally think,  
9 and this is as an Advisory Committee member, I  
10 personally think it makes sense because it gives us a  
11 bit of a hedge on this hydrogen bet that we're proposing  
12 to make here. And we're going -- we're not going all in  
13 with hydrogen, we're going significantly in, but if  
14 things don't pan out as we want them to over the next,  
15 you know, five to ten years, we're still getting  
16 investment in an alternative fuel that today there seems  
17 to be a lot of demand for.

18 COMMISSIONER PETERMAN: Thank you for that  
19 question.

20 I'm going to go to Steve, and then I'll go to  
21 Eileen, and then Tyson. Steve.

22 COMMITTEE MEMBER KAFFKA: I want to kind of echo  
23 some of the things that Tim has said, in a way, but  
24 first say that it should be clear to everybody how  
25 difficult it is to transform the energy economy of

1 United States, California, or even Los Angeles or  
2 Sacramento.

3           And it's very, very difficult to have a  
4 comprehensive, big integrated picture. There's been a  
5 recent report, I think by the Hoover -- the Little  
6 Hoover Commission and I think also the Big Hoover  
7 Institution about electricity regulation of California  
8 and policy, and how many different actors within the  
9 State there are that are affecting it and how, in fact,  
10 un-integrated the electric policy -- that's not to fault  
11 any particular individual or group, it just is a very  
12 difficult issue.

13           So, I remain kind of uncertain about how we  
14 should use public policy to advance our needs. For  
15 example, since I know more about biomass and perhaps  
16 biofuels, than I do other areas, I foresee a difficult  
17 period ahead for the State in the next half a dozen  
18 years for even acquiring sufficient biofuels with low  
19 enough carbon intensity, at a reasonable price that the  
20 public can tolerate.

21           So, for example, if the State's investing a lot  
22 in hydrogen, which will only supply a small number of  
23 vehicles if they, in fact, are every purchased by the  
24 public, and will only reduce a certain number of vehicle  
25 miles traveled and reduce greenhouse gas emissions by a

1 small amount, how is that going to integrate with this  
2 kind of bottleneck that perhaps we're going to face in  
3 the near term?

4 So, Tim's concern about, you know, how best to  
5 invest that money and how to be able to review that  
6 investment in the near term is a very important one.

7 COMMISSIONER PETERMAN: Thank you. And before  
8 we got to Tyson with his comment, I'll note we have a  
9 firm stop in ten minutes because we'll need to do a fix  
10 of the phone lines during lunch hour, and so we'll get  
11 all the comments we can now and we can -- anything  
12 outstanding we can do when we come back.

13 Tyson.

14 COMMITTEE MEMBER ECKERLE: Great, thank you.  
15 Well, first of all, while it's fresh in my mind, I very  
16 much agree with Tim Carmichael and his partnership with  
17 natural gas and hydrogen, at least the ability to do so.

18 So, just a kind of full disclosure, at Energy  
19 Independence Now we're working on an investment plan for  
20 hydrogen and how we can identify market champions to  
21 move this market forward and bridge to the private  
22 market, and so one of the things that we need to find is  
23 that champion.

24 And so it's difficult for the industrial gas  
25 companies, it's not really their core market strength to

1 go in and develop stations, whereas CNG developers are.  
2 And so if there is a way we can start to spur that  
3 market and that partnership, I think that helps bridge  
4 to a sooner private market takeover.

5           And then just the other thing, just a quick  
6 point I wanted to make on the apples-to-apples. When we  
7 consider 2017 and 50,000 vehicles, this investment would  
8 not be targeting 50,000, it's targeting a much greater  
9 market share. This is really just the trigger point or  
10 the seedlings, I guess, to use an analogy to put out  
11 there.

12           So, this starts the market. That 68 stations  
13 actually would have room to grow additional vehicles and  
14 then at that point I think we'll start seeing a lot more  
15 private interest in hydrogen fueling infrastructure.

16           So, it's really -- and to get there I think the  
17 challenge of hydrogen is that we need those public  
18 stations to establish the market. And so one of the  
19 benefits of hydrogen is that, you know, you have a long  
20 range, it's kind of a full function vehicle but it's  
21 not -- there's no benefit to the consumer unless that  
22 network is established.

23           And so that's kind of the tension, we always  
24 have to go early with this investment to get hydrogen  
25 the best chance of success, so it's taken -- if that

1 makes sense.

2 COMMISSIONER PETERMAN: Thank you, Tyson.

3 Will then Eileen.

4 COMMITTEE MEMBER CARMICHAEL: So, I appreciate  
5 that. And I don't want to beat a dead horse in terms of  
6 all of the apples-to-apples stuff, but I might a little  
7 bit.

8 You know, I think that one of the -- I  
9 appreciate the fact that it takes time to do these  
10 things. I appreciate the fact that the staff has to do  
11 to execute on these plans.

12 Joe's point is the one that's ringing in my ears  
13 is that you can't -- the sort of ready, fire, aim  
14 scenario is a very scary one to me because I think that,  
15 you know, we have been asking for these kinds of  
16 comparisons for five years. And there have been some  
17 that have been done, but they haven't been in a way that  
18 we can understand what the explicit assumptions are when  
19 we're doing things, like this hydrogen number.

20 And I think to Tim's point, there are areas  
21 where I think we should all be willing to take risks. I  
22 completely appreciate the idea that, you know, as a  
23 State California has always led in a lot of areas, and I  
24 think that as a fund this has really been oriented  
25 towards taking some risks around leadership in certain

1 categories.

2           But I think we've got to really be clear about  
3 what kinds of risks we're actually taking. You know, I  
4 worry that the premise that we can't see a single road  
5 map out through 2050 that doesn't include  
6 electrification and fuel cells. You know, it's a little  
7 like being in 1890 and looking forward and saying, you  
8 know, we've got to attach jet packs to horses otherwise  
9 we're not going to get there fast enough.

10           I mean there's a lot of technology change that  
11 happens between now and then and the issue is if we look  
12 at current technology, and the current technologies that  
13 are available to us and we say there's no way to get  
14 there without those, well, we then have to say, well,  
15 can we see a way to actually making those economic.

16           Because without an economic principle, it's  
17 going to be the government doing it alone the entire way  
18 and I don't think anybody in this room wants to see  
19 that.

20           And so I'm not saying it's not possible, I'm the  
21 last person in the room to say that, you know, it's not  
22 possible to have some innovation around technology to go  
23 and solve these problems.

24           But I guess what I would ask is, you know, when  
25 we look at the allocation of these dollars to the

1 specific types of programs we're talking about, whether  
2 it's funding infrastructure or whatnot, does that enable  
3 a sustainable marketplace as a result?

4           So, if we're going to go it alone, do we  
5 actually get to a point where that market can stand on  
6 its own?

7           And, you know, when I look at these numbers  
8 we're spending more than 10 percent of the program on  
9 this particular line item over time so far and that's --  
10 you know, inside of an investment fund you're not  
11 allowed to do that.

12           So, you know, this is a big spend and so it's  
13 not one I'm willing to take a fire on in terms of  
14 whether or not it's going to catalyze a marketplace.  
15 It's one where I think we need to actually have a very,  
16 very sound and very logical rationale, even if it's not  
17 metrics based, as to why this unlocks a marketplace, and  
18 why this specification allocation of those dollars  
19 versus R&D, other investment research in research and  
20 whatnot is really going to be the thing that drives it  
21 forward.

22           Because if we don't have an economic premise on  
23 the fueling station, if we don't have an economic  
24 premise on the vehicles, then what we need to be  
25 investing in is research, not in infrastructure.



1           COMMISSIONER PETERMAN: Thanks. I'll just  
2 make -- I mean I think you've raised a lot of good  
3 points and I'll just make the comment that this plan is  
4 not done in isolation. You know, it is contextualized  
5 relative to everything from the Governor's ZEV plan, to  
6 ARB's policies and regulations, and ZEV mandates, and a  
7 host of other policy goals that are articulated at the  
8 local and State level.

9           And so, we'll continue to consider how to  
10 translate to the public and to the Advisory Committee  
11 members the rationale for the funding decisions. Not  
12 everything is explicitly quantitative. You know, it's  
13 assessing all of these factors and saying where do  
14 things need to be?

15           And it's a conversation that needs to happen not  
16 only through the 118 program, but in conjunction with  
17 all the other programs that are incentivizing and  
18 supporting clean energy.

19           And so I think we'll go back and consider how do  
20 you go about that dialogue, you know, what part of that  
21 dialogue happens within this forum versus should it be  
22 done in conjunction with other agencies, accordingly.

23           Eileen, you had a comment?

24           COMMITTEE MEMBER TUTT: I'll just make this  
25 really brief because I just got back from the L.A. Auto

1 Show, and I want to kind of follow up on something John  
2 Shears said, and something in terms of a context here.

3 At the L.A. Auto Show every single major auto  
4 manufacturer had an electric vehicle, a plug-in electric  
5 vehicle, and many had more than one model.

6 The people are buying these cars at triple the  
7 rate they were buying the Prius, when it was in its two  
8 to two-and-a-half year introduction period.

9 So, I think the level of uncertainty in the PEV  
10 world is a lot less than some of the other fuels.

11 So, I don't want to get into this we have to  
12 worry about people how -- wide adoption, widespread  
13 adoption for plug-in electrics, I think it's going to  
14 happen.

15 But I think we are and what I would -- we're at  
16 a different place than hydrogen in that we're in this  
17 kind of valley of death period, right, where we  
18 actually -- if we want to get to mass adoption, we're  
19 going to have to invest.

20 And so I think that the reason this is related  
21 to hydrogen is that if we don't succeed, when we're  
22 talking about how hard it is to transform the energy  
23 sector it is -- I've been trying to do it my entire 25-  
24 year career, and it is just very, very hard.

25 So, we have an opportunity to do that with

1 electric vehicles, plug-in electrics in particular. And  
2 the degree to which we succeed there, we are going to be  
3 more likely to succeed with hydrogen vehicles.

4           And so I want to be -- I think we need to -- I  
5 am a little worried about the optics of the plan, and  
6 the numbers here. And I think, unfortunately, a lot of  
7 it's politics, which is sometimes a ready-aim-fire. But  
8 I do want to point out that the reason that I think the  
9 \$7 million is low is because if we don't succeed there,  
10 then we aren't going to succeed with hydrogen and,  
11 therefore, we're investing a lot of money in something  
12 that is less likely to succeed.

13           COMMISSIONER PETERMAN: Thank you. Let me turn,  
14 quickly, to -- Charles, are we able to get the Advisory  
15 Committee members on the phone?

16           If there are Advisory Committee members on the  
17 phone who want to quickly comment on this topic, and if  
18 it goes longer, we'll have to move it to after lunch.

19           COMMITTEE MEMBER WARD: Hi, Commissioner  
20 Peterman, this is Justin Ward with the California Fuel  
21 Cell Partnership. Can you guys hear me now?

22           COMMISSIONER PETERMAN: Yes.

23           COMMITTEE MEMBER WARD: Okay. I know you have a  
24 hard stop coming up, so maybe I'll just keep it short.

25 I have had a chance -- I have had a chance to read

1 through the Investment Plan and there's been some really  
2 good comments made throughout, especially some of the  
3 comments from, you know, ARB and really I resonate with  
4 a lot of the comments that have been made.

5 And speaking towards the hydrogen funding, of  
6 course we support that.

7 There was questions being asked about vehicle  
8 volumes and just as a clarification, that 53,000 number  
9 came from confidential surveys that were facilitated by  
10 the ARB and the California Energy Commission, so those  
11 were not numbers that were generated by the California  
12 Fuel Cell Partnership. Actually, the numbers were  
13 supplied to the Partnership from the government  
14 agencies, just to clarify where those numbers come from.

15 And again, for those who haven't read the  
16 California Fuel Cell Partnership road map, I would  
17 strongly urge you to do that. It does provide a lot of  
18 that background information and does provide links to  
19 other resources to answer some of the other questions  
20 that were being raised more recently in this  
21 conversation.

22 But again, thanks everyone over at the  
23 California Energy Commission, it looks like a really  
24 good job that you've done on this latest Investment  
25 Plan.

1           COMMISSIONER PETERMAN: Thank you for your  
2 comment. And I think with you representing the Fuel  
3 Cell Partnership it's good for you to hear this dialogue  
4 and I imagine that there might be folks here that will  
5 have follow-up questions for you, as the Partnership.  
6 And thanks for that clarification on the data source.

7           Alberto, were you going to raise your -- please.

8           COMMITTEE MEMBER AYALA: I was, if I may, I'll  
9 be brief because I just want to make a point that I  
10 believe is important.

11           As significant as -- and I agree with Eileen,  
12 the optics may not necessarily be the most beneficial,  
13 but as significant as we see the investment of 20  
14 percent of the proposed funding is for hydrogen, let us  
15 not lose sight of the fact that the investment that the  
16 State is making is highly leveraged.

17           For a car maker to be able to bring to market a  
18 market-ready vehicle in 2015 that means they've already  
19 gone through a significant commitment to get us there.

20           And the fact that, again, we're confident and  
21 hear commitments that the vehicles are going to be ready  
22 I think is something that we need to keep in mind.

23           Again, to put into context the relative  
24 importance of the different numbers that we see proposed  
25 today, so just wanted to make that comment.

1 COMMISSIONER PETERMAN: Thank you.

2 John, 20 seconds, literally, AT&T's going to  
3 call in to fix something.

4 COMMITTEE MEMBER SHEARS: So, touché to Will on  
5 that crystal ball to 2050, I agree. You know, but I  
6 just want to, again, make this observation as a  
7 supporter of plug-ins, but also a supporter of fuel cell  
8 vehicles, you know, there are substantial subsidies made  
9 available right now for the cars. And as long as those  
10 subsidies, those incentives are there for the purchase  
11 of the vehicles I think we can have high confidence,  
12 until battery costs can be significantly reduced, that  
13 there will be fairly healthy sales.

14 We need to make sure in what context we're  
15 talking about. Right now, granted, fuel cell cars are  
16 not here, not the commercial product. But a lot of  
17 money is going into the support of plug-in vehicles and  
18 we need to contextualize, you know, the challenges and  
19 the tensions, and recognize the overall investments that  
20 are going.

21 I just want to also highlight the fact that  
22 California is not the only place in the world working on  
23 fuel cells. It's part of a global strategy that  
24 involves Korea, Japan, Britain, Scandinavia and Germany.  
25 So, California is basically, you know, the beach head in

1 North American on this.

2 Some of my Canadian colleagues might disagree  
3 with that.

4 But it's part of a global strategy. So, when  
5 you hear the car companies talking about their strategy  
6 for delivering the vehicles, the California discussion  
7 is just part of their larger global strategy.

8 COMMISSIONER PETERMAN: Thank you for that  
9 comment. We're going to have to break. We'll come back  
10 from lunch at 1:10 and continue the discussion then.  
11 Thank you.

12 (Off the record at 12:05 p.m.)

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

14 COMMISSIONER PETERMAN: All right, before we  
15 broke for lunch we were hearing the end of comment,  
16 initial comment on the hydrogen infrastructure funding.

17 And let me ask, if there's anyone who did not  
18 make a comment before lunch on that topic, that wishes  
19 to please identify yourselves now, and also looking to  
20 see if there's anyone on the phone. And this is on the  
21 hydrogen infrastructure.

22 All right, well, we had a healthy discussion on  
23 that topic and there was reference to a number of  
24 background materials that we can all familiarize  
25 ourselves before our next meeting.

1 MR. FREEMAN: Commissioner --

2 COMMISSIONER PETERMAN: Before we move on to the  
3 next -- oh, I'm sorry.

4 MR. FREEMAN: Commissioner, we have one person  
5 on the phone line.

6 COMMISSIONER PETERMAN: Please, caller, we'll  
7 hear your comment or question now. Please identify  
8 yourself.

9 MR. FREEMAN: Mr. Staples, go ahead.

10 MR. STAPLES: Oh, yes, can you hear me?

11 COMMISSIONER PETERMAN: Yes, Mr. Staples, please  
12 go ahead.

13 MR. STAPLES: Okay, yes, I'm looking over this  
14 information you have for particularly the funding for  
15 the hydrogen infrastructure, the Investment Plan for  
16 hydrogen infrastructure and I don't see anything in this  
17 chart here that you have up. Okay, I just see biofuel  
18 production -- oh, hydrogen, it's up to \$20 million.

19 Now, is that going to go towards fueling  
20 stations or is that going to be split up between  
21 biofuels, this and that, and all this other crap, okay,  
22 or is it going straight for the fueling stations?

23 COMMISSIONER PETERMAN: I think the proposal is  
24 for fueling stations infrastructure.

25 MR. STAPLES: Okay. In order to meet the demand



1 of this -- you know, of the rollout, I think you're  
2 going to need to up that a bit. I think you need to put  
3 it up there to around \$20 million -- to around \$30  
4 million, okay. Because, really, if we're going to be  
5 able to get these stations out in time by starting in  
6 2014, and the current problem with permitting as well  
7 that you currently have, you're going to need more  
8 funding here.

9 Now, as far as the process going forth, putting  
10 it together, which is the PON, and that's not really,  
11 necessarily the subject here, but here's what --

12 COMMISSIONER PETERMAN: And, sir, we won't be  
13 able to talk about any details of the PON since it's  
14 currently ongoing.

15 MR. STAPLES: I understand. I understand. But  
16 a focus needs to be on the renewable part of this whole  
17 thing. You need to take that money and say, first, you  
18 fund renewable hydrogen, 100 percent renewable hydrogen,  
19 okay, because that's really the goal.

20 Second, after that, we fund the rest. It's as  
21 simple as that. That is the mandate of what the State  
22 law is. Not necessarily explicitly that, but the  
23 mandate is to go to renewable energy, okay, and  
24 renewable hydrogen.

25 And, you know, right at this point in time,

1 okay, I mean it's just basically a fossil fuel fund,  
2 okay, and you need to make sure that your Investment  
3 Plan prefers renewable hydrogen, 100 percent renewable  
4 hydrogen first. That's the first thing right there.

5 After that you need to go to fossil fuel.  
6 You've been listening way too much to the fossil fuel  
7 industry for the last four or five years, okay, and  
8 they've been leading you down a bad path.

9 You can't get those stations permitted because  
10 nobody wants to -- no fire marshal or fire chief can  
11 sleep at night with liquid hydrogen and 1200 psi  
12 hydrogen on site, okay. They just don't want to do it.

13 The renewable side eliminates that problem  
14 because you generate on demand.

15 COMMISSIONER PETERMAN: Thank you, Mr. Staples,  
16 I have to --

17 MR. STAPLES: Also, because there's zero  
18 emission.

19 COMMISSIONER PETERMAN: Mr. Staples, I'll let  
20 you know, too, I don't know if you were with us earlier,  
21 but we did have a good, healthy discussion about the  
22 role for and the goal of renewable hydrogen and talking  
23 about the regulations that are pending, as well as the  
24 work we've done on that to date.

25 So, your comments are appreciated and I think

1 we've got them for the record. A real focus on  
2 renewable hydrogen --

3 MR. STAPLES: Okay, I wasn't here.

4 COMMISSIONER PETERMAN: -- as well as a total  
5 funding increase.

6 MR. STAPLES: I'm sorry, I wasn't here for the  
7 first half because I had a meeting, so my apologies.

8 COMMISSIONER PETERMAN: Oh, no problem, it was  
9 good to get another perspective, as well, from someone  
10 in the industry. And that point was raised by some  
11 others, you should be aware of as well. So, thank you  
12 for the --

13 MR. STAPLES: I just want to say that there  
14 should be a preference for renewable hydrogen, first.  
15 You fund the renewable stuff that's economically viable,  
16 that people can show economies of scale. And if they  
17 don't meet the amount that you can get funded for the  
18 rollout, then you go to the fossil fuel. But the  
19 preference has to be renewable, first.

20 That's all I need to say. Thank you very much  
21 and I'm sorry if I'm repeating something that's already  
22 been said.

23 COMMISSIONER PETERMAN: No, thank you for your  
24 comments, they're appreciated.

25 Anyone else on the line who has not commented on

1 this topic?

2           Seeing none, there will be a public comment  
3 again at the end of the period and I will remind  
4 everyone we will have another Advisory Committee meeting  
5 before we release our second draft.

6           So, moving on let's move to natural gas  
7 infrastructure, any comments or questions from our  
8 Advisory Committee members here at the table, or on the  
9 line?

10           Mr. Carmichael, would you like to comment?

11           COMMITTEE MEMBER CARMICHAEL: This is consistent  
12 with the input we've given staff over the last couple of  
13 years, now.

14           The only comment that I have on the actual  
15 wording in the plan is the proposal reads as carving  
16 out, you know, schools and -- what's the other one? Oh,  
17 school districts and public transit.

18           They are a priority and they should be given  
19 preference, but they're not the only entities that might  
20 have difficulty getting private capital, private  
21 financing. So, it's just a small tweak that we'll put  
22 in writing, but a request would be that, you know, even  
23 if you prioritize schools and transit you not limit  
24 yourself to only funding those.

25           If somebody puts forward a good proposal and

1 says here's why we can't get private financing, and it  
2 makes sense to the CEC to fund it, I don't want you to  
3 be handcuffed and not able to fund a project like that.

4 COMMISSIONER PETERMAN: Thank you, that's a good  
5 comment.

6 Okay, now we're going to move on to alternative  
7 fuels and advanced technology vehicles funding  
8 categories, and we will start with the -- oh, sorry, let  
9 me -- two things I have to do, actually. I forgot one,  
10 apologies.

11 Russ Teall who was only able to join us on the  
12 phone, had a comment on the biofuel production supply  
13 category and I did not -- we did not see his hand raised  
14 online.

15 So, Russ, do you want to provide your comment on  
16 that, now?

17 MR. TEALL: Sure, I'll make it very, very quick,  
18 there's really only two points.

19 First of all, I'm very pleased to see the  
20 discussion revolving around the cost benefit analysis or  
21 metrics, or whatever term we want to use. And, you  
22 know, thank you, Commissioner Peterman, for supporting  
23 that initiative.

24 I think it's been called for, for quite a while,  
25 and it will really help to inform the decision making

1 process.

2           The white paper that Joe Gershen put together  
3 and submitted back in September, it is probably a good  
4 starting point for staff to look at in terms of what the  
5 metrics are, you know, that are found in the Integrated  
6 Energy Policy Report which, of course, they're very  
7 familiar with, but how those metrics are used, you know,  
8 to try to find the lowest common denominator as a basis  
9 of comparison of different programs.

10           Second, there was a question in the case outline  
11 about commercialization and pre-commercialization. For  
12 the past ten years we've been doing technology  
13 assessments on renewable energy projects. And, you  
14 know, the first thing is to have a commonly understood  
15 vocabulary for, you know, having the discussions in the  
16 first place.

17           And there's two standards, two different  
18 measurement devices that are used by the DOD and NASA  
19 for this purpose. One of them is a technology readiness  
20 level, a TRL, and a manufacturing readiness level, and  
21 it basically looks at the degree of advancement of a  
22 technology, of a process on a scale of 1 to 9, you know,  
23 1 being a good idea and 9 being fully commercial, so  
24 that you can really assess where on this pipeline, you  
25 know, a particular technology is.

1           I agree with Tim Coleman's analysis that we need  
2 to keep the pipeline full and that there will be a  
3 balance, you know, between different types of technology  
4 in the state that they're at. There's some up-lining  
5 that needs to occur, but we have to do it on a  
6 reasonable basis so that the technologies that are ready  
7 for prime time are getting the support.

8           And I will follow up with written comments, as  
9 well.

10           COMMISSIONER PETERMAN: Sorry, we're losing you  
11 right there at the end, Russ, can you say that -- so,  
12 you're going to follow up?

13           MR. TEALL: Yeah, I'll follow up with some  
14 written comments as well.

15           COMMISSIONER PETERMAN: And that would be great.  
16 And I would say in terms of some of the recommendations  
17 you had on metrics, et cetera, or examples feel free to  
18 follow up with staff, with references to those.

19           MR. TEALL: Absolutely, thank you.

20           COMMISSIONER PETERMAN: Thank you, Russ.

21           Also, before we move to vehicles, let's provide  
22 an opportunity to talk about infrastructure not proposed  
23 for funding. Ms. Garland, you had some comments earlier  
24 and you're welcome to make them again, but we'll also  
25 note that I think you've acknowledged a need for a

1 discussion about how to expend the current propane  
2 infrastructure funding. And I would encourage staff to  
3 work with you on that as we move forward.

4 And you're welcome to comment again, if you  
5 like.

6 COMMITTEE MEMBER GARLAND: Will it get me bonus  
7 points if I don't?

8 (Laughter)

9 COMMISSIONER PETERMAN: Of course. Well, thank  
10 you, you were so clear the first time no need to repeat.

11 Anyone else from the Advisory Committee have a  
12 comment on the infrastructure categories currently  
13 proposed not to be funded in this Investment Plan?

14 As staff noted, we'll continue to track and  
15 evaluate these areas and funding needs.

16 Any public comment on this issue?

17 Okay, I see a couple of people scratching their  
18 chins, but they are not reaching for their microphones,  
19 so we're going to move on.

20 Let's focus, now, on vehicle incentive funding.  
21 We'll start with natural -- we've started talking -- I  
22 guess we'll start with natural gas vehicle comments.

23 COMMITTEE MEMBER CARMICHAEL: Tim Carmichael  
24 with the California Natural Gas Vehicle Coalition, a  
25 couple of quick comments.



1           One, again, the funding level is consistent with  
2 last year and what we've been talking with staff about,  
3 appreciative of that.

4           Some quick feedback on the high level questions  
5 staff are asking. What's the appropriate per-vehicle  
6 funding?

7           You know, most of my members believe that the  
8 current levels are pretty close to right on. You know,  
9 there's still some debate going on among our membership  
10 about this, but most of them think that the current  
11 levels, which are class- and weight-based oriented is  
12 the -- is pretty close to right on.

13           The second question has to do with the form of  
14 the funding and the buy-down incentive program. And  
15 here, again, I think most of our members think it's  
16 working pretty well.

17           We'd love to have more money in the whole pot,  
18 but as far as the allocation it's going pretty well.  
19 You know, where there's a rub is companies like Honda,  
20 you know, end up getting funding for dozens of vehicles  
21 and they have demands for hundreds of vehicles. And not  
22 much you can do about that unless we're successful in  
23 upping, you know, this overall pot of funding.

24           But the mechanism seems to be working well. The  
25 per-vehicle funding -- and we've got some minor tweaks

1 that we're going to be suggesting in written comments  
2 but, overall, we think it's going pretty well.

3 COMMISSIONER PETERMAN: Thank you. Any other  
4 comments from Advisory Committee members on this funding  
5 category or on the line?

6 Any public comment in the room?

7 Well, hearing none, let's move on to the next  
8 category, light-duty plug-in electric vehicle  
9 incentives, any comment on this category of funding?

10 Please, Alberto.

11 COMMITTEE MEMBER AYALA: Thank you. Just  
12 briefly, again, I want to make sure we express -- this  
13 is Alberto Ayala with the Air Resources Board -- we  
14 express our support for the CEC allocating this funding  
15 to help us with the rebate program, which happens to  
16 continue to be over-subscribed, so we certainly  
17 appreciate the ongoing support.

18 As a point of reference I have data that  
19 suggests that in October 2012 we considered almost 2,000  
20 applications for the rebate. And we fully expect that  
21 the program will continue to be over-subscribed.

22 So, this element in your plan is going to be a  
23 critical piece of what is going to enable us to continue  
24 on the path to deploy the advanced technology, so just  
25 wanted to state that.

1           COMMISSIONER PETERMAN: Thank you. Anyone, any  
2 other Advisory Committee members with a question or a  
3 comment about this funding category?

4           Anyone on the line, Charles?

5           Okay, we will move on then to the next vehicle  
6 category, medium- and heavy-duty demonstration.

7           MR. FREEMAN: Commissioner?

8           COMMISSIONER PETERMAN: Yes?

9           MR. FREEMAN: We actually have one caller on the  
10 line.

11          COMMISSIONER PETERMAN: Okay, please caller.

12          MR. FREEMAN: Mr. Ziegler, go ahead. Mr.  
13 Ziegler, if you can go ahead and unmute yourself? I  
14 guess we'll follow up with him through the chat.

15          COMMISSIONER PETERMAN: Yeah, whenever he's  
16 available again, we can take it after this next section.

17          So, medium- and heavy-duty demonstration  
18 funding, any comments from the Advisory Committee  
19 members?

20          Anyone on the line?

21          Mr. Carmichael, please.

22          COMMITTEE MEMBER CARMICHAEL: I'll just say that  
23 this is a very important category and based on the level  
24 of, you know, applications the last time around and the  
25 positive feedback I get from my members even though

1 there weren't a lot of natural gas projects funded, all  
2 of my members believe this is a very important piece of  
3 this program.

4 COMMISSIONER PETERMAN: Thank you, it's nice to  
5 hear what you like as well as what you don't like.

6 (Laughter)

7 COMMISSIONER PETERMAN: And not just for you,  
8 sir, you're always happy to volunteer that, so we  
9 appreciate that.

10 Mr. Knight?

11 COMMITTEE MEMBER KNIGHT: I guess I -- you know,  
12 Prop. 30 went through so school bus is alive and well,  
13 we're going to continue the process of what we do out  
14 there and continue moving on.

15 And I guess I think that we're missing a little  
16 piece out here. Now that we've gone through the fire  
17 drill that we've gone through as far as the State is  
18 concerned, and the cutbacks and things that have  
19 happened, I think there's a couple different ways for us  
20 to look as far as school bus is concerned.

21 I think that we're seeing equipment out there  
22 now to be able to modify a hybrid school bus to CNG, to  
23 be able to do things like that, to electrify an older  
24 bus that's out there.

25 Not always new is the way to go because I think

1 that, you know, we see some packages that are very  
2 easily installed in an old diesel bus to make that a  
3 true electric, into a CNG bus to make it a hybrid that  
4 is going to do many, many options for us out there. And  
5 packages can be removed when that bus now is termed old  
6 enough to go ahead and it's time to scrap that vehicle,  
7 to turn around and take that package out and put it in  
8 the next bus at that stage.

9           You know, I think it's a format to keep them on  
10 the road for us to get the best bang for our dollar out  
11 of that piece of equipment than to turn around and go  
12 spend -- you know, probably I could hybrid ten vehicles  
13 for the cost it's going to cost me to buy one new one.

14           So, I mean to see fleets of significant numbers  
15 out there to be able to make a big step forward going  
16 that direction, than going out and buying one new bus to  
17 put into their fleet out there to me makes a lot more  
18 sense as to what we're trying to do to get, like I say,  
19 the best bang for our buck out here.

20           So, you know, I think there needs to be some  
21 real consideration to that. You know, true, we'd all  
22 like to have brand-new buses. But I think in today's  
23 life out here we've got to make sure that school  
24 transportation is the most economical means of  
25 transportation there is.

1           And if we can continue to keep making it clean  
2 transportation, you know, to me that's a plus all the  
3 way around because we don't have the dollars. There's a  
4 little bit of sunshine out there, but we don't have the  
5 dollars to turn around and go buy a \$200,000 or \$250,000  
6 bus to put in there, in one bus.

7           You know, I think that we're looking down the  
8 road that we need to do multiples. We need to be able  
9 to make a bigger step forward to get our fleets cleaner  
10 for the best of our money that we can do.

11           So, I think it's always been kind of a one-sided  
12 little situation that new equipment is always the best  
13 way. And I don't think so because I think we've got  
14 some programs out there now that are willing to test and  
15 do some demonstrations to get some buses up, and get  
16 them on the road, and show that we can have an electric  
17 drive line in a bus that makes that 100 percent  
18 electric, or we can make a hybrid out of a CNG, and  
19 things of that sort.

20           So, I mean those packages are there and  
21 available and I think now is the time for us to be  
22 looking in that direction, too.

23           COMMISSIONER PETERMAN: Thank you, Mr. Knight, I  
24 think those are good comments for staff to consider  
25 going forward with both the rationale for the section,

1 as well as future PONs.

2 Anyone else at the table with a comment or a  
3 question or any Advisory Committee members on the line?

4 Otherwise, we'll open it up to any public  
5 comment on this topic.

6 We don't seem to have anyone with a question on  
7 the line. Any public comment on the medium- and heavy-  
8 duty demonstration category, you can please come up to  
9 the primary podium.

10 And please identify yourself. Thank you.

11 MR. ASSAGAI: Thank you. Lead Commissioner and  
12 Advisory Committee, my name is Mel Assagai. I represent  
13 the Electrification Leadership Council.

14 And we want to first compliment the staff and  
15 the Committee on the Investment Plan. We think it's  
16 very well-constructed, we think it's usable, we think  
17 it's something that fits the times and the resources  
18 available.

19 We especially want to thank the staff for coming  
20 up with a demonstration plan for converting delivery  
21 trucks to all-electric drive. There's a PON that's  
22 going out in January/February for \$2.4 million. We  
23 think that's a terrific effort, we think it will kind of  
24 prove what was just said about school buses, that you  
25 can take very usable, durable vehicles and turn them

1 into long-term benefits to the environment. So, we  
2 think that's a great plan.

3 We think the overall plan is great and we look  
4 forward to working with you on that.

5 Let me just get back, move back a second.  
6 Before I came back there was a discussion about CNG  
7 incentives. And we represent Navistar as well, and the  
8 people at Navistar would like to thank the CEC for being  
9 so cooperative --

10 COMMISSIONER PETERMAN: Can you speak more into  
11 the microphone? I just want to make sure that those  
12 online can hear you.

13 MR. ASSAGAI: I'm sorry. Can you hear me?

14 We represent Navistar as well and we want to  
15 thank you for the investment you're making in CNG. We  
16 think it's worked well, we think the buy-down program is  
17 terrific. We'd like to see more, but we think this a  
18 very good effort.

19 So, thank you very much.

20 COMMISSIONER PETERMAN: Thank you for your  
21 comment.

22 Any other public comment on the medium- and  
23 heavy-duty demonstration category?

24 If it's on the topic, you don't have to be  
25 forced.



1 All right, welcome, please identify yourself.

2 MR. VAN BOGART: My name's Jon Van Bogart, I'm  
3 with Clean Fuel USA. And I just wanted to kind of echo  
4 something that Ralph had mentioned regarding school  
5 buses.

6 And one thing I'd like staff to consider is the  
7 school bus or school districts' budgets are very  
8 strapped with the economy the way it is, and I wanted  
9 the staff to consider allowing school bus funding to be  
10 leveraged with other grant programs.

11 And I know, currently, you really can't leverage  
12 that with other either local, State or Federal grant  
13 monies, but with school districts I think it's a little  
14 bit different proposition. And I think that if you  
15 looked at letting or allowing school districts to  
16 leverage with other grants, I think you'll see more and  
17 more school districts come to the table to purchase  
18 alternative fuel buses.

19 I believe just about every manufacturer now  
20 makes either a propane or a natural gas school bus, so  
21 there's a lot of options out there.

22 But we're seeing that some districts are saying  
23 even with the \$20,000 buy-down it's very difficult for  
24 them to add to their fleet.

25 COMMISSIONER PETERMAN: Thank you for your

1 comment.

2 Sir?

3 MR. WILLIAMS: Good afternoon, my name is Bill  
4 Williams. I'm with Electromotive Design and we do have  
5 a product that Ralph is alluding to, that's only about  
6 \$30,000 a bus, with ultra-capacitors, not even battery.  
7 No need for plug in because it refills as the bus  
8 decelerates and then it's there for power assist.

9 And, you know, many of these fleet operators  
10 have been asked to save their fuel and you don't need to  
11 wait until 2025 to completely replace your fleet.

12 So, I really do ask that you consider funding  
13 for some of these small, immediate results that could  
14 happen with products like ours. So, I appreciate that.

15 COMMISSIONER PETERMAN: Thank you.

16 Any other comments?

17 All right, then let's wrap up this section with  
18 any comments or questions about vehicles not proposed  
19 for funding at this time?

20 Oh, I'm sorry, Jan, please, do you have a  
21 comment?

22 COMMITTEE MEMBER SHARPLESS: Well, yes, I  
23 just -- with respect to school buses, you know, there's  
24 been a lot of discussion about apples and oranges, and  
25 so forth in comparison. And I know that people have,

1 you know, realized that part of what we're doing here is  
2 an air quality strategy, as well.

3 So, I just would like to say with respect to  
4 school buses this is a really important area because  
5 many of us, still, are working in the area where we are  
6 dealing with ultra-fine particulates, exposure to high-  
7 risk groups which, of course, are school kids with  
8 developing lungs. Your lungs develop until about ten.

9 So, if such a comparison is being done and  
10 particularly in this area, and particularly when you're  
11 looking at school buses I hope you put the correct  
12 number on what it does for public health, and a  
13 particularly vulnerable risk group like school children.  
14 So, yay to Ralph.

15 COMMITTEE MEMBER KNIGHT: Thank you.

16 COMMISSIONER PETERMAN: Thank you, Jan.

17 All right, seeing no one -- no comments on  
18 vehicles not proposed for funding, let's go to the next  
19 category, emerging opportunities Federal cost sharing,  
20 any comments or questions on this topic?

21 I'll ask you to please ask on the phone.

22 Great, moving on to manufacturing, any comments  
23 on this category? Please, Mr. Coleman?

24 COMMITTEE MEMBER COLEMAN: Yeah, I just wanted  
25 to say that I appreciate the fact that you kept this

1 category in there. You know, I actually, personally,  
2 would love to see it at a higher number because I do  
3 think that this is pretty critical and it's pretty  
4 broad-based. I think the nice thing about this category  
5 is that it's spread across a number of different  
6 industries and it's focused upstream on the supply  
7 chain, which I think is an area that does matter,  
8 especially in California in trying to support the  
9 manufacturing base. So, I'm glad this is in there.

10 I think the one challenge when you go upstream  
11 is that not all of the products coming off of these  
12 manufacturing facilities are specifically tuned to these  
13 applications. So, you need to make sure, hopefully,  
14 there's additional flexibility around the kinds of  
15 products that are coming off of some of these  
16 manufacturing facilities so that facilities that aren't  
17 purely dedicated to producing materials, let's just say,  
18 that go into either transportation applications or  
19 whatnot are still eligible for a mix of products that  
20 come off that line, and to be able to attune accordingly  
21 in terms of the way the market requires.

22 COMMISSIONER PETERMAN: Thank you for that  
23 comment.

24 Steve?

25 COMMITTEE MEMBER KAFFKA: Steve Kaffka. I'd

1 like to second what Will said, that as you survey  
2 developments in the biomass and biofuel arena you see  
3 increasing mention of bioproducts. And it's possible  
4 that in some manufacturing sectors high-value products,  
5 that are not fuels, drive the market for biomass and the  
6 creation of facilities that then use secondary residual  
7 materials for fuel production.

8           So, we need to have an open mind and be flexible  
9 about how this is going to develop. Thank you.

10           COMMISSIONER PETERMAN: Sorry, I thought I was  
11 going to sneeze, hence the pause.

12           Thank you for that comment.

13           Any other comments? Mr. Gershen?

14           COMMITTEE MEMBER GERSHEN: Hi, I think I want to  
15 third that, I agree. And from a business perspective we  
16 actually see that in the real world applications, so  
17 that really does and can happen.

18           COMMISSIONER PETERMAN: That's interesting. I  
19 think it would be useful for our staff to just have an  
20 offline conversation with you more about some of those  
21 opportunities.

22           COMMITTEE MEMBER GERSHEN: Sure thing.

23           COMMISSIONER PETERMAN: Anyone on the line with  
24 the Advisory Group, with a comment or a question on  
25 manufacturing?

1 MR. PERKINS: Yes.

2 COMMISSIONER PETERMAN: Yes, hi.

3 MR. PERKINS: Well, actually I'm -- hi. This is  
4 Christopher Perkins, I'm with Sky Tran, Incorporated. I  
5 just actually wanted to just comment on emerging  
6 opportunities, you just spoke of that.

7 COMMISSIONER PETERMAN: Go for it.

8 MR. PERKINS: And I think first I'd like to just  
9 commend the program for including this category. I  
10 think it's a very important category in that it can  
11 collect a lot of technologies that otherwise don't fit  
12 into the pre-existing categories that have been created.

13 I think it was alluded to earlier, but it  
14 sometimes is hard to anticipate which directions  
15 technology is going to go, so the -- I think there's  
16 great wisdom in leaving this potential here for ideas  
17 and approaches that haven't been considered to emerge.

18 So, thank you very much.

19 COMMISSIONER PETERMAN: Thank you. And I'll  
20 just comment on that category that, you know, that is  
21 the intent to provide an opportunity for valuable one-  
22 off projects, and the challenge with designing  
23 solicitations in a category like this is that there's  
24 not always, at times, a common thread and the projects  
25 are -- sometimes it's an opportunistic opportunity.

1           And so we've focused to date on projects where  
2 there's been significant Federal cost share, but also a  
3 need for State funding, and we continue to focus in that  
4 area.

5           But as we've mentioned in past meetings, we  
6 welcome feedback on other criteria by which we could  
7 consider projects in such a category.

8           MR. PERKINS: Yeah, I would only -- excuse me,  
9 go ahead.

10          COMMISSIONER PETERMAN: Yes, go ahead.

11          MR. PERKINS: Yeah, I was just going to say I  
12 think that's exactly, I think, where this category has  
13 created some opportunities. I think it will be of  
14 benefit to the program's mission here.

15          I think that the key here is to look at outcomes  
16 of the various technologies that present themselves as  
17 being outside the other existing categories, but on the  
18 basis of their effectiveness and something of a critical  
19 scoring system, I'm not sure how you begin to compare  
20 apples to oranges. As you said, there is some issues  
21 with trying to make judgments in this area.

22          But we certainly will be of assistance to  
23 support your efforts to begin making those judgments.

24          COMMISSIONER PETERMAN: Thank you.

25          Any comments, further comments on manufacturing?

1 We have one in the room here, please go to the mic.

2 MR. MERTENS: Hi, my name is Chris Mertens. I'm  
3 speaking on behalf of Simbol Materials today. Simbol  
4 Materials is a lithium production company based in the  
5 Imperial Valley, in California.

6 And as you talk about supply chain, the supply  
7 chain for electric vehicles for instance, lithium is a  
8 key component of those vehicles.

9 And so we would urge you to consider that type  
10 of supply chain investment under the manufacturing  
11 section going forward. And we've submitted a letter  
12 with more detail on that proposal.

13 COMMISSIONER PETERMAN: Thank you.

14 I think we have one more in the room.

15 MR. MUTYALA: I want to thank the Commission and  
16 the Advisory Committee for inviting our comments. My  
17 name is Neilesh Mutyala. I represent the lithium  
18 battery company Seeo. We are a very deeply-rooted  
19 California based company. Both of our founders are UC  
20 Berkeley graduates. Several of our investors are  
21 Silicon Valley veterans, including Google.

22 We've opened a couple of California offices.  
23 One in Hayward which is a cell, a .small pilot  
24 production line. And an office in San Diego,  
25 California, which is a battery pack assembly facility.



1           We are very encouraged to hear the discussion  
2 around the table about increasing the share for the  
3 manufacturing and the level that it currently is.

4           Our goal is to build a pilot production full  
5 first manufacturing facility next year, to start  
6 planning for it now.

7           This Committee and certainly the business case  
8 for locating our manufacturing facility near our  
9 customer base, and given all the incentives across the  
10 board it's quite clear that California, the customer  
11 base for full electric and plug-in hybrids is going to  
12 be led domestically by California.

13           There is a significant business case for us to  
14 locate that manufacturing facility here. The funding  
15 provided by this bill can support that and we thank the  
16 Energy Commission for putting this together.

17           COMMISSIONER PETERMAN: Thank you for your  
18 comments and for letting us know more about your  
19 business.

20           Any other comments on manufacturing from the  
21 public, Advisory Committee members in the room or on the  
22 line?

23           Hearing none, let's move to the next category,  
24 workforce training and development. Do we have any  
25 comments from Advisory Committee members on this item?

1 Mr. Knight, please.

2 COMMITTEE MEMBER KNIGHT: I guess I would just  
3 like to thank the Commission on what they've done so far  
4 as far as training is concerned out there. For the  
5 school bus industry we get very little. They deliver a  
6 bus, give us a book, tell us to go read it and the  
7 mechanics are lucky if they get a copy of those papers.

8 I think that's very important and I think it's  
9 very important to what we want to try to do to do the  
10 retrofits because to make the retrofits work for us is  
11 going to be our shop putting them in, and taking them  
12 out, and moving them around.

13 So, I think the education that my shop gets with  
14 that I think is great. I know we have a facility  
15 working in the Silicon Valley that's doing -- that got  
16 some grant money to do some education and they're doing  
17 a terrific job. And I think that that's -- you know,  
18 that's a big thing in today's workforce out there, for  
19 us to have so that we can try and stay independent, and  
20 not rely on the people that's going to cost us big  
21 dollars to install those things, or repair them, or  
22 whatever the case might be; make our people capable of  
23 handling that type of stuff.

24 COMMISSIONER PETERMAN: Great, thank you for  
25 that observation from your experience so far.

1           Anyone else from the Advisory Committee with a  
2 comment or a question about this category?

3           Any Advisory Committee members on the line?

4           And if not, we'll turn next to public comment on  
5 this topic.

6           Hearing none, let's move to the next two  
7 categories and then we'll have public comment, again,  
8 and another opportunity for our Advisory Committee  
9 members to add any final comments.

10           The next category identified is the regional  
11 readiness and planning.

12           MR. STAPLES: I had a comment.

13           COMMISSIONER PETERMAN: Oh, please, yes, go  
14 ahead, sir. Please identify yourself.

15           MR. STAPLES: Yeah, Paul Staples. I'm Chairman  
16 and CEO of HyGen Industries.

17           On the workforce training, that's going to be  
18 critical for a lot of our options, including hydrogen,  
19 okay, because there's going to be a need to be people  
20 that are going to be trained to oversee these things.  
21 And I think that the best way to do that is through the  
22 university system.

23           Now, I know that is an issue here that this  
24 funding goes to either, you know, community colleges or  
25 for kind of trade training.

1           But I believe that the best places to build this  
2 curriculum involvement would be in the university sector  
3 and to -- in order to get it started. And I think that  
4 is a change I think you need to make in that particular  
5 program to allow four-year universities, who have  
6 extensive engineering departments that can take this  
7 thing on, and come up with protocols for everything from  
8 the permitting and installation, to the operation and  
9 maintenance of these systems.

10           And that goes for every alternative being  
11 offered. This is not just for hydrogen.

12           But particularly within hydrogen, it's going to  
13 be critical particularly in the beginning of the  
14 deployment for the fueling infrastructure.

15           And I would recommend, I would like to see,  
16 first of all, that money -- that amount there go up to  
17 about \$5 million a year. And from that, you know, a  
18 good portion of it would be for the kinds of training  
19 that I'm talking about that can get the universities  
20 involved, and not just leave it to the community  
21 colleges. Not that community colleges aren't capable,  
22 certainly they are.

23           But on a more higher level of engineering and  
24 design, you know, for these types of systems you really  
25 need to be able to have the universities, who have

1 extensive departments in this area, like Cal State does,  
2 in Sacramento, and Cal State L.A., who are doing amazing  
3 things in that area and doing a lot of really good work.  
4 But they need support to support such projects, like the  
5 one I'm talking about, as well as what other people are  
6 supporting here.

7           So, I'd like to see that amount go up to about  
8 \$5 million and make a change in the program so that  
9 universities can also participate in more -- more than  
10 just a technician, okay, so that you can see engineers  
11 being trained, okay, to go out there in the field and  
12 help to basically do the project management, do the  
13 system design and --

14           COMMISSIONER PETERMAN: Mr. Staples, I'm going  
15 to interrupt you and just make a comment here because --

16           MR. STAPLES: Okay. All right.

17           COMMISSIONER PETERMAN: First of all, thank you  
18 for that observation. And I was just conferring with  
19 staff regarding who has access to this funding and I'm  
20 going to turn to Mr. McKinney to comment on it.

21           But I would say more broadly the Commission is  
22 looking at workforce training issues across the clean  
23 transportation and the renewable space, and working with  
24 partners at the universities, as well as with the  
25 employment panels. And so I think your comment is duly

1 noted.

2 But, Jim, can you just comment currently on  
3 whether there are relationships or opportunities with  
4 the universities?

5 MR. MC KINNEY: Sure, I'm pleased to, Jim  
6 McKinney here.

7 In our initial assessment of workforce training  
8 needs we were looking primarily at vocational skills,  
9 trade skills, so people who can be mechanics and  
10 technicians, and the primary training opportunity for  
11 that is through the community college system and through  
12 private panels, such as the Employment Training Panel.

13 When we first set up the training program we did  
14 not think that university curricula were the best fit  
15 for this type of training. They have their own  
16 engineering programs.

17 And some universities in our State are doing  
18 tech support work for us that, say, does include  
19 hydrogen vehicles and et cetera. So, that's why we have  
20 it set up the way we do.

21 COMMISSIONER PETERMAN: But we'll continue to  
22 look at what opportunities may exist with the  
23 universities, as well.

24 We've got a couple other comments in the room,  
25 Mr. Shears.

1           COMMITTEE MEMBER SHEARS: Yeah, Tim and I were  
2 sort of discussing -- this goes to the alternative fuels  
3 readiness. Have we moved to the regional readiness?

4           COMMISSIONER PETERMAN: Uh-hum, yes.

5           COMMITTEE MEMBER SHEARS: I think we did, but  
6 then we went back to the workforce. Yeah, I support --

7           COMMISSIONER PETERMAN: I'm sorry, I have one --  
8 there's one more workforce card I have here, so we're  
9 mixing --

10          COMMITTEE MEMBER SHEARS: Sure, go for it.

11          COMMISSIONER PETERMAN: We'll come back in one  
12 second.

13          Sachu Constantine --

14          MR. CONSTANTINE: Yeah, I was on the same topic.

15          COMMISSIONER PETERMAN: Okay, then we are moving  
16 on, regional readiness and planning, please go ahead.

17          COMMITTEE MEMBER SHEARS: Yeah, so I just want  
18 to speak in support of opening up the funding to other  
19 opportunities.

20                 I just want to clarify because, again apologies,  
21 I missed the presentation, but slide 32 was meant to be  
22 historical, I assume? It talks about PEV readiness, but  
23 it doesn't talk about other alternative fuels readiness,  
24 so I assume that was just giving a historical  
25 perspective on the work that has been done to date.

1           COMMISSIONER PETERMAN: Yeah, I think that would  
2 be a correct assessment. It's the readiness grants we  
3 have done to date have been for electric vehicles and  
4 there's still additional readiness work that needs to  
5 happen in those categories -- in that category, but  
6 we've also heard feedback about an interest in expanding  
7 that to other alternative fuels, which is the third  
8 bullet.

9           COMMITTEE MEMBER SHEARS: Yeah, and we're  
10 involved working on some planning around how to do this  
11 for hydrogen. And, you know, I think it would be great  
12 for other fuels to be able to take advantage of it.

13           I'm just wondering, given that the stakeholder  
14 communities -- hydrogen might be a little bit, you know,  
15 further along in terms of recruiting potential  
16 participants in regional readiness efforts, compared to  
17 other alternative fuels. Certainly, not anywhere near  
18 where the PEV work is right now.

19           I'm just wondering, as the solicitation is being  
20 developed if it might be good to highlight that this --  
21 you know, this work is in process right now and to  
22 give -- have some sort of, I don't know, recruitment  
23 meetings or informal kind of consciousness raising  
24 meetings so people have a chance to start getting  
25 themselves organized in time for the solicitation.



1           Certainly, as part of our strategy for hydrogen  
2 we're looking for, you know, trying to meetings quarter  
3 one next year, but for the other fuels it might be good  
4 just to do some sort of introductory meetings, give  
5 people ideas around what readiness efforts might look  
6 like based on, you know, what's been learned with the  
7 PEV work, et cetera. That might be very helpful to  
8 other stakeholder groups.

9           COMMISSIONER PETERMAN: I think that's a good  
10 suggestion.

11           Let me turn to Sashu Constantine for a comment  
12 on this topic. And then if anyone else on the Advisory  
13 Committee wishes to comment on regional readiness, and  
14 we'll also take audience comments, public comments.

15           MR. CONSTANTINE: Commissioners thank you,  
16 Advisory Group thank you, as well. My name is Sachu  
17 Constantine; I'm representing the California Center for  
18 Sustainable Energy, CCSE. We administer the California  
19 Clean Vehicle Rebate Program.

20           First of all, the gentleman just now I think  
21 expressed a lot of the things that I wanted to express,  
22 our appreciation to staff for including the observation  
23 that we have lessons learned from the PEV market and the  
24 ZEV plan, the ZEV work going on in the State.

25           In terms of regional planning and readiness I

1 think there's great models there for us to build from  
2 for the other alternative fuels that might be covered  
3 here.

4           And we really do think this is an important part  
5 of the market. It's kind of more on the demand side  
6 than the supply side, it's creating the channels, and  
7 the infrastructure and the demand for this kind of  
8 consumption of clean energy vehicles.

9           I'd like to refer this back in that regard to  
10 some of the earlier topics, the EV infrastructure, and  
11 the alternative fuel infrastructure. We think there's  
12 room here for a lot of institutional development.  
13 Regional planning and readiness is a big part of that,  
14 but a lot of institutional development -- and our model  
15 for that is perhaps already entered into the record in  
16 our written comments.

17           But our model for that is what's happened in the  
18 solar space, and with the CSI, and with the kind of  
19 overarching State program that provided a framework.  
20 Not just the incentives that are there because that's  
21 another question, the incentives, but it's the non-  
22 incentive benefits that have provided consistency  
23 parameters, guidelines, and information data for  
24 consumers and local governments to use.

25           So, we've proposed that in our written comments,

1 sort of an EVSE CSI version that could apply broadly,  
2 not just to EVSE, but to other kinds fueling  
3 infrastructure, but providing that kind of statewide  
4 consistency.

5 Obviously, there are different ways to construe  
6 that, we're not suggesting that we create a brand-new  
7 incentive program entirely.

8 But the idea of this stand-alone, consumer-  
9 oriented, statewide consistent administration of such a  
10 project I think would go a long way towards helping the  
11 regions get ready and prepare their plans, and there's a  
12 lot of energy there for us to take advantage of.

13 So, again, kudos to the staff and to the  
14 Commission for thinking this through and including that.

15 We do actually believe that \$1 million for this  
16 particular aspect of it might not be sufficient given  
17 the level of demand and need that is out there for these  
18 regional plans to take place.

19 So, I'd like to open up the possibility of  
20 considering additional funding in this category. Thank  
21 you.

22 COMMISSIONER PETERMAN: Thank you.

23 Mr. Shears.

24 COMMITTEE MEMBER SHEARS: Yeah, I guess just in  
25 response to Sachu's observation, you know, in the back

1 of my mind I was thinking just like with the PEV  
2 solicitation this is \$1 million for this round. But  
3 with the PEV solicitation it started off with \$1 million  
4 and then in the next Investment Plan there was an  
5 additional million.

6 So, this doesn't necessarily -- this wouldn't  
7 necessarily be the end of this funding pool for this  
8 purpose; correct?

9 COMMISSIONER PETERMAN: I'm just getting a note  
10 here, as well, that there is \$2.7 million from the  
11 current plan, also, that we have not yet issued a  
12 solicitation for that fits into this category as well,  
13 additional to the one that's cited for '13-'14.

14 Thank you. Any other comments on regional  
15 readiness and planning?

16 Please, come to the mic, don't be shy. Everyone  
17 else just gets up and walks over.

18 MS. ROWLEY: Hello, my name is Jessica Rowley  
19 with California Consulting, and I'm here to read a  
20 public comment on behalf of Kings Canyon Unified School  
21 District to speak about the Central Valley  
22 Transportation Center Project.

23 Kings Canyon Unified School District, in  
24 partnership with Reedley College and the City of  
25 Reedley, are attempting to build a center that can

1 serve, supply and train the Central Valley in the areas  
2 of alternative and renewable fuels, and advanced vehicle  
3 technology.

4 Not only will the center help to deploy hybrid  
5 electric and natural gas vehicles to the Central Valley,  
6 but it will also serve as a learning lab to train the  
7 next generation of green technicians.

8 This center is a catalyst for attaining State  
9 climate change policies. The San Joaquin Valley has  
10 reported the worst attainment for air quality in the  
11 State. In Kings Canyon Unified one in six students  
12 carry an inhaler to school.

13 Unemployment in the region remains over 30  
14 percent and over 75 percent of Kings Canyon Unified  
15 students live below poverty, which makes the Central  
16 Valley a priority for environmental justice.

17 The existing transportation department is  
18 located on Reedley High School campus. This location  
19 limits the ability to expand our alternative fuel  
20 offerings and expand the needed green jobs training  
21 beyond existing technician staff as these new technology  
22 vehicles arrive.

23 We currently have five hybrid school buses, now,  
24 and will soon be up to three electric school buses and  
25 one electric food service truck.

1           KCUSD has potential funding for up to seven  
2 electric school buses in 2013. These buses will be  
3 going out on tour next year to districts in Northern and  
4 Central California for three weeks at a time, then  
5 returning to the transportation department for servicing  
6 and maintenance before sending them back out to a  
7 different school district.

8           This tour will provide schools with the  
9 opportunity to try out these buses, offering public  
10 education and promotion of the AB 118 program.

11           The CEC has provided grant funds for the  
12 development of the Central Valley Transportation Center  
13 and we want to encourage an ongoing funding source  
14 through our support for the alternative fuels and  
15 vehicles technology category.

16           Kings Canyon Unified School District and the  
17 Central Valley Transportation Center project partners  
18 would like to urge the California Energy Commission to  
19 continue to make significant investments in the creation  
20 of these alternative fuel and vehicle technology  
21 centers, significant investments that would exceed the  
22 \$1 million in funds slated in the Investment Plan for  
23 2013.

24           So, thank you for your time and your continued  
25 support of the Central Valley Transportation Center

1 Project.

2 COMMISSIONER PETERMAN: Thank you for your  
3 comment, as well as providing us some information about  
4 some of the populations that we're trying to help with  
5 these cleaner transportation technologies.

6 Your comments are a good segue to our next  
7 category, which is market and program development, under  
8 which we've discussed the funding in the '12-'13 plan  
9 for Centers for Alternative Fuels, as well as  
10 sustainability studies.

11 And as staff noted, solicitations are still  
12 pending in the Centers for Alternative Fuels category  
13 and we continue to look for feedback on particular  
14 sustainability studies.

15 So, if anyone has any comments on those -- in  
16 that general category, welcome them now.

17 Anyone on the phone with a comment on the market  
18 and program development category?

19 COMMITTEE MEMBER SHARPLESS: Can I just --

20 COMMISSIONER PETERMAN: Please Jan.

21 COMMITTEE MEMBER SHARPLESS: -- ask a question?

22 When you fund these centers are you funding them on a  
23 fiscal-by-fiscal year basis? In other words, they get  
24 funding from one fiscal year.

25 COMMISSIONER PETERMAN: So, there's a -- I'll

1 say that the solicitation has not gone out for this,  
2 yet, so I can't speak to what exactly will be in it.  
3 But there's a one-time funding allocation as part of the  
4 plan so I would imagine that the funding would be a one-  
5 time funding category because the category, I think, is  
6 \$2.7 million overall in the category.

7 COMMITTEE MEMBER SHARPLESS: So, if that  
8 investment is being made in a center is there something  
9 in the qualifications that you're looking at per  
10 proposal that would allow -- would at least give you  
11 some idea whether or not that center could maintain its  
12 operation without the CEC money?

13 Or is it a one-time thing that the center gets  
14 and maybe a year later it doesn't have any money and  
15 goes out of business?

16 I mean can you deal with that issue?

17 COMMISSIONER PETERMAN: Well, I think that's  
18 generally one of the metrics we like to consider with  
19 all of our funding and it just hasn't -- the  
20 solicitation has not been designed, yet, but I think  
21 that's a good point to consider in the design.

22 COMMITTEE MEMBER SHARPLESS: Because that's one  
23 of your questions, I think, in here is how to  
24 objectively solicit and select programs, and so I was  
25 just wondering if you'd come up with a design or an



1 answer to that question?

2 COMMISSIONER PETERMAN: I don't think we've come  
3 up with -- staff has come up with an answer to it, yet,  
4 which is why we're asking the question. Similar ideas,  
5 I'm sure, but that's a good suggestion for staff to  
6 consider.

7 This is a good time, as well as with written  
8 comments, to offer any comments on how that solicitation  
9 could be structured.

10 COMMITTEE MEMBER SHARPLESS: Okay.

11 COMMISSIONER PETERMAN: I think some of the  
12 opportunities, I'll note, that the public has come to  
13 this Committee, as well as to the Commission with in  
14 this area are opportunities that would leverage other  
15 investment and have a longer-term plan, but that's a  
16 good point.

17 Mr. Shears. Oh.

18 Any other comments or questions on the market  
19 and program development category?

20 So, we've gone through our discussion of the  
21 funding categories.

22 Let me now turn to -- I have a series of cards  
23 for public comment, so I'll turn to that public comment  
24 now. And after we hear that public comment I'll go back  
25 to the Advisory Committee members for any additional

1 comments that they would like to offer before we  
2 conclude.

3 So, Ms. Rowley, are you going to make another  
4 comment? Okay, great, thank you.

5 Now, not great, just --

6 (Laughter)

7 COMMISSIONER PETERMAN: No, we're doing great,  
8 it's 2:10, now. If it was 5:15, I would say great, but  
9 you would have -- the floor is yours, if you'd like.

10 So, let's now turn to Stephen Crolius with  
11 the -- the Transportation Program Director for the  
12 Clinton Climate Initiative. Welcome.

13 MR. CROLIUS: Thank you, yes, as stated I'm  
14 Stephen Crolius and I'm the Director of the  
15 Transportation Program for the Clinton Climate  
16 Initiative.

17 The discussion on fuels, methane, biofuels,  
18 hydrogen, with respect it all seems quite effortful and  
19 expensive. And I say effortful with respect because I  
20 get around and I don't think there's any -- another body  
21 in the world that's wrestling with these topics in a  
22 more effective manner than this body here.

23 What I'd like to do is put on the -- put out for  
24 consideration the idea that there's a slightly different  
25 way of framing the topic that leads to, perhaps, a set

1 of options that are more tractable.

2           So, I'd like to recommend three things and  
3 you'll see that what I'm talking about is really a very  
4 slight difference from the way that you're already  
5 approaching this.

6           Fuel; let's say we're looking for a fuel species  
7 that can be derived from biomass, so in other words  
8 biofuels. No problem there.

9           Second, the same fuel species should be also  
10 producible via an electrochemical process. Okay, right  
11 away everyone should say, yeah, well, hydrogen. And  
12 that is what is good about hydrogen. It's not the  
13 commodity, itself, because the commodity, itself, is  
14 actually pretty difficult as a commodity to store, and  
15 handle, and transport.

16           I believe the interest of the State in hydrogen  
17 derives from its -- the possibility of it being produced  
18 electrochemically, rather than by steam methane  
19 reforming. I don't think that you all want to make --  
20 ensure a bright future for -- an indefinite future for  
21 natural gas, it being a fossil fuel and all.

22           So, the point is electrochemistry.

23           The same fuel species derivable from biomass,  
24 derivable from electrochemistry.

25           And then let's put one third thing out there,

1 liquid, liquid fuel.

2 Mr. McKinney earlier, in his remarks, mentioned  
3 the degree to which a fuel species can drop in or be  
4 accommodated with existing fueling infrastructure,  
5 that's a good thing.

6 Believe it or not, if you take those criteria  
7 and you go through the options, which we have done, and  
8 others have done, what you come out with is actually a  
9 pretty good set of options.

10 The species that really come to the fore are  
11 methanol, its close relative dimethyl ether, and  
12 ammonia. And I know that there's history in this State  
13 with methanol. I just acknowledge that. I'm not going  
14 to say anything more other than to say I know.

15 But those are the species, methanol, dimethyl  
16 ether and ammonia.

17 And they fit the criteria and they can be  
18 brought into being, brought into commercial being really  
19 in a very affordable way.

20 I, as a representative of a group forming around  
21 an effort at Cal Poly, and other stakeholders, we just  
22 submitted for the docket a road map, a business and  
23 technology road map. Having been through the exercise  
24 and with two different panels of experts it's  
25 surprisingly feasible, near-term and affordable to

1 develop a transportation energy economy based on these  
2 fuel species, and one that will take you all the way to  
3 the 80 percent reduction in greenhouse gas emissions  
4 that the State's targeting.

5           And it's the electrochemistry part that's going  
6 to get you there because I think we all know that  
7 biofuels, as essential as they are, there's only so much  
8 biomass that can be appropriately used for this purpose,  
9 so electrochemistry is key in this discussion.

10           So, that's what I wanted to say is that there is  
11 a group, actually several groups, there's a community of  
12 people interested in this in the State, in the country,  
13 internationally. The group stands ready to, you know,  
14 be of assistance in the State of California.

15           And we, Clinton Climate Initiative, we stand  
16 ready to be a face for the effort, along with our  
17 partners at Cal Poly. Thank you very much.

18           COMMISSIONER PETERMAN: Thank you. And you said  
19 you did docket it to the 118 docket?

20           MR. CROLIUS: Yeah, it was like 12-ALT-02.

21           COMMISSIONER PETERMAN: Sure.

22           (Laughter)

23           COMMISSIONER PETERMAN: I just wanted to make  
24 sure it was our docket. Thank you. And that way others  
25 can have access to it, as well.

1           Okay, the next public comment, Mr. Lowenthal,  
2 and I believe you have a presentation.

3           MR. LOWENTHAL: I do.

4           COMMISSIONER PETERMAN: And if you can keep it  
5 to be a very short presentation, that would be  
6 appreciated. Thank you.

7           MR. LOWENTHAL: I'm Richard Lowenthal, I'm the  
8 founder -- oh, I can talk without the slides in front of  
9 me, I can remember this part.

10           I'm Richard Lowenthal, I'm the founder and chief  
11 technical officer of what's now called Charge Point.  
12 You knew it as Coulomb two weeks ago, but we've changed  
13 our name to be the same as our branding.

14           First of all, I'll do the part I can riff on  
15 while they're getting ready.

16           We want to thank you for the current programs.  
17 Both from a policy viewpoint and an execution viewpoint  
18 we applaud the Commission on partners to date in the  
19 electric vehicle world.

20           It has been -- I think the money that's been  
21 spent has been spent wisely and it's been a pleasure to  
22 work with staff on helping get some of these things out  
23 here.

24           I'm especially pleased today because I was able  
25 to drive electric from my office in Silicon Valley to

1 here, and I'm charging across the street at a CEC  
2 partially-funded station across the street.

3 That's a new thing for me to be able to drive  
4 from Silicon Valley to Sacramento all electric, so thank  
5 you personally.

6 But I also will say, before we get on board here  
7 as they struggle along --

8 COMMISSIONER PETERMAN: How's that presentation  
9 going, guys? Okay.

10 MR. LOWENTHAL: Old laptops, okay.

11 So, just a few other comments, I want to say  
12 that support is still necessary. We don't see it  
13 necessary in the long term, I'm talking about financial  
14 support, in that we see the industry starting to get  
15 some legs, we're selling profitable products and  
16 services.

17 But in this early days when there are few cars,  
18 we need enough infrastructure out there to encourage  
19 people to buy the cars. Because if they can't make a  
20 trip like this -- until I could make this trip between  
21 Silicon Valley and Sacramento, I had to keep a gasoline  
22 car in my garage.

23 So, we do think that it is important, in terms  
24 of germinating a new industry, which is what you are  
25 doing, to continue to apply support for the time being.

1 COMMISSIONER PETERMAN: So, your slides are up.

2 MR. LOWENTHAL: Oh, great.

3 COMMISSIONER PETERMAN: I want to give you a  
4 heads up and ask you just to keep it to a couple of  
5 minutes because we have a significant amount of public  
6 comment today. Thank you.

7 MR. LOWENTHAL: Okay, great, I will then go very  
8 quickly. I want to talk about an issue that is not in  
9 the current plan draft that we think is quite important  
10 and timely, and if we can work on this with current  
11 funds in the '12-'13 plan that would be great because  
12 it's important and this is about interoperability.

13 So, I'll skip some of these junky slides here  
14 about what we do and things, and try to get to the core  
15 issues. So, it's here.

16 So, right now there are several companies that  
17 offer public charging services, companies -- mostly  
18 California companies, frankly, like Charge Point, like  
19 Ecotality, with their Blink products, like Better Place.  
20 But it's currently a bit awkward for drivers because  
21 they have to choose and they can come to a station that  
22 they can't use, or that is awkward to use, or they can't  
23 find. And so we want to take care of those issues.

24 A lot of the services that we all offer are tied  
25 to the fact that we have network services available to



1 drivers, things like if you need to charge money for  
2 using a charging station those require network services.

3 If you want to reserve a station, those require  
4 network services.

5 If you want things like connection to the  
6 station owners, you want network services.

7 But as the markets do, they've developed with  
8 several different networks out there and so it's kind of  
9 spotty which ones you get when.

10 There are stations for service -- sorry,  
11 services for station owners, for drivers. There are  
12 services available at the stations. We're talking  
13 about, really, the driver's perspective here today.

14 So, in the Governor's Action Plan he encouraged  
15 us to work on interoperability so that the drivers would  
16 have a seamless experience, could use any infrastructure  
17 they find in California without being impeded by the  
18 fact that they come from different manufacturers or  
19 they're supported by different services.

20 And the Governor's plan encouraged us to develop  
21 such solutions for that issue, and we have. It turns  
22 out ANSI, the Standards Institute, has assigned to NEMA,  
23 North American Electronic Manufacturers Association, the  
24 requirement that we come up with standards for  
25 interoperability.

1           Those standards are in the area, and I don't  
2 know if I've got them listed here -- well, you can see  
3 the needs here. They are in the ability in things like  
4 if you look for a charging station, you look on unified  
5 maps, and all of our stations are represented and a  
6 driver can find any station that's out there, that's  
7 available to them.

8           They are things like if you carry these little  
9 RFID tags in your wallet to turn on stations that  
10 require authentication or billing that your card will  
11 work at any station.

12           And, finally, on stations that require billing  
13 there will be a roaming system which allows -- it works  
14 like cell phones work today, or your ATM systems work  
15 today. We can go to any ATM, regardless if it's your  
16 banks or not, and you can get your money.

17           The same thing with charging stations, you'll  
18 only have to have one account on one of the services and  
19 our services will cross-bill.

20           So, we want to support that. The companies  
21 within NEMA got together and said, yes, we need to do  
22 that. We are now developing the standards. The first  
23 standards on mapping will be done this year. That is  
24 you'll be able to go on any one of our websites or any  
25 one of our Smart Phone apps and find all of our

1 stations, and find out characteristics of those  
2 stations.

3           These companies have gotten together; we are  
4 welcoming other companies into it. Some other companies  
5 are informally participating, companies like Better  
6 Place.

7           Here's the gaps, roaming, which is about the  
8 ability to have only one account and charge anywhere,  
9 locating and reserving stations, which is about mapping.  
10 This will continue all the way into the dashboard of  
11 vehicles and ability to control it.

12           I'm not going to go into these technical  
13 details --

14           COMMISSIONER PETERMAN: Well, I wanted to let  
15 you know there actually will be a future opportunity for  
16 you to do that. As part of the work that the Commission  
17 is doing to help develop a State Charging Infrastructure  
18 Plan we'll be holding a workshop at the beginning of the  
19 year and there will be a discussion and a focus on  
20 interoperability.

21           MR. LOWENTHAL: Great.

22           COMMISSIONER PETERMAN: So, I think this  
23 background is useful for those who are less well-versed  
24 in the EV charging issues and to kind of tee up this is  
25 something that we've identified, as well, that needs to

1 be addressed. It's mentioned on page 29 of the plan.  
2 And so I expect that you and other -- the industry  
3 collaboratives will participate in that workshop, as  
4 well as kind of share different ideas about where we  
5 need to go next.

6 MR. LOWENTHAL: We will, indeed, we'll see you  
7 there.

8 COMMISSIONER PETERMAN: See you there.

9 MR. LOWENTHAL: I'm going to wrap up with the  
10 reason I'm standing here which is this will take some  
11 money to get started. All of the companies will need  
12 money to make conversions from the current private  
13 systems to common systems. And we would encourage the  
14 Commission to support maybe a pool of funding that  
15 different companies can use in order to help them fund  
16 getting into a standards and interoperable world for the  
17 drivers.

18 One of the nice things about this is all of this  
19 action is in California. All of the leading companies  
20 are California companies. We have the chance to have  
21 the center of roaming be here in California, to have  
22 things like the financial clearinghouse to be here in  
23 California.

24 We can really grab this issue, it is a --  
25 worldwide, it is a global issue. But, fortunately, the

1 leading companies in this industry, in the networking of  
2 charging services are all here in California and, of  
3 course, we'd like to continue that and keep this the  
4 center of the universe for electric vehicles.

5 COMMISSIONER PETERMAN: Great, so thank you.

6 MR. LOWENTHAL: Thanks.

7 COMMISSIONER PETERMAN: So, we'll hear more  
8 details at the next workshop.

9 Oh, yes, and can we have your slides docketed as  
10 well? That would be great.

11 I'm turning now to Ed Pike, who's on the line  
12 with public comment.

13 MR. PIKE: Yes, hi, can you hear me now?

14 COMMISSIONER PETERMAN: Yes.

15 MR. PIKE: Oh, great, thank you. Hang on I've  
16 got to -- just fiddling with the phone line.

17 Okay, this is Ed Pike with Energy Solutions and  
18 I wanted to comment on a topic that's related to the  
19 vehicle category.

20 And I appreciate the significant work that's  
21 gone into the draft plan and I'd like to propose an  
22 additional project to improve light vehicle technology  
23 that provides better fuel efficiency, lower greenhouse  
24 gas emissions. And I think that the categories that the  
25 State is supporting through this plan and through

1 regulation are very valuable for bringing new vehicles  
2 into the market.

3 And I would encourage the Commission to also  
4 support efforts to improve the efficiency of light-duty  
5 vehicles once they're on the road.

6 I would start with an energy efficiency  
7 replacement tire incentive to complement the CEC's work  
8 on programs looking at ratings for consumers, and  
9 potential standards for the replacement tire market.

10 And I'm looking to a program that would provide  
11 an incentive, also, for customers to use the top rated  
12 tires for distributors and retailers to supply and stock  
13 those types of tires.

14 And I think that by applying that type of  
15 program across the end-use vehicle fleet you could  
16 really have very major consumer benefits, avoided  
17 petroleum reductions, and also avoided greenhouse gas  
18 emissions. Thank you.

19 COMMISSIONER PETERMAN: Thank you, Mr. Pike.

20 Esther Perman, apologies on saying your last  
21 name incorrectly, perhaps. Please, welcome to the mic.

22 MS. PERMAN: Hi and -- can you hear me and can  
23 you see me? Actually, I'm pretty short here. I'll try  
24 to stand up --

25 COMMISSIONER PETERMAN: We can just see the top

1 of your head, it's fine we can hear you.

2 MS. PERMAN: All right, good.

3 (Laughter)

4 MS. PERMAN: My name's Esther Perman, you were  
5 close, and I work for Propel Fuels. I want to take a  
6 few minutes to address an alternative fuel  
7 infrastructure area that is not funded anymore;  
8 biofuels.

9 We have previously been in there for \$1.5  
10 million and this draft is down to zero, so I wanted to  
11 take a few minutes to address that.

12 First, I wanted to actually give a quick update  
13 on Propel. Propel Fuels has been funded with previous  
14 grants through AB 118. We are currently working on a  
15 75-station rollout and that will be followed by a 101-  
16 station rollout.

17 We have 17 open at the moment, one in  
18 construction today, and three more this month. With  
19 those 17, plus a few more that we added before the AB  
20 118 funds came in place, we have been instrumental in  
21 doubling the number of stations in California in about  
22 two years.

23 Along the way, Propel drivers have reached some  
24 pretty impressive milestones, including the 3.8 million  
25 gallons of oil saved, while also saving 60 million

1 pounds of CO<sub>2</sub>, so those are some good metrics to  
2 consider when you're thinking about biofuel  
3 infrastructure.

4           Some other highlights this -- actually, October  
5 we worked with Solazyme to bring the first algal  
6 biodiesel -- I'm not sure I'm saying that right,  
7 actually, to consumers in the Bay Area. So, we've had  
8 pretty great response with that so far, that's the first  
9 time that's been done in California and the nation. And  
10 I'd be happy to answer questions about that later or off  
11 to the side.

12           So, I want to express some concern over the  
13 removal of funding for E85 infrastructure. I really  
14 appreciate Will Coleman's comments to biofuel and  
15 comparing apples to apples.

16           As we understand it, the change in the funding  
17 is due to perhaps the perception that construction has  
18 been slow. We acknowledge that, as Propel is one of the  
19 major buildings of E85 infrastructure in the State, we  
20 know that that largely applies to us.

21           So, largely that was due to private funding  
22 issues. We've now resolved those and are speeding up  
23 construction, as I said, one today and three this month,  
24 and an expedited process following that.

25           So, we expect that by 2016 we'll have



1 contributed to nearly 200 stations, along with some of  
2 the other E85 companies in the State.

3           Meanwhile, the market for E85 is continuing to  
4 grow. As the Investment Plan states, there were about  
5 half a million gallons in sales in 2007, 10 million in  
6 2010.

7           In 2012, alone, Propel estimates we'll be  
8 selling about 12 million, so that's a huge growth.

9           Meanwhile, our CEC-funded sites have averaged  
10 about 190 to 1,000 gallons in 2011. In 2012 we're at  
11 240,000.

12           October was a record breaking month with on  
13 track for a 300,000 gallon run rate.

14           I have some questions kind of about the  
15 calculations on which the draft assumes that the  
16 expanded number of stations will undercut existing  
17 stations. We're not really sure where that came from  
18 because a 425 percent growth does not mean that we're  
19 nearing targets.

20           We think that the number of drivers in the  
21 states will definitely support that much and many, many  
22 more.

23           We also don't believe that the cost of  
24 installing the E85 funding stations are prohibitive.  
25 Businesses, like Propel, have developed models where

1 station owners are paying for nothing and we contribute  
2 about \$300,000 to updating the infrastructure. So,  
3 that's Propel versus the station owners and we -- that's  
4 our model, we don't actually own the stations, we just  
5 build at the stations.

6           Regarding competitive pricing, I think the draft  
7 says there's about a 5 to 10 percent reduction in price.  
8 We are discounting about 35 to 80 cents per gallon, so  
9 that's somewhere between 11 and 20 percent. So, take  
10 that into consideration when you're looking at  
11 calculations.

12           Last, I want to emphasize that it's imperative  
13 that we keep funding projects that meet existing,  
14 untapped demand. We need to continue funding to  
15 continue expansion beyond the end of the current grants.  
16 We think that more stations are needed, and previous  
17 investment drafts have stated that, as well.

18           It's also important to maintain the investor  
19 confidence. We're not at a point where if we drop of  
20 CEC funding construction will necessarily continue.  
21 Investors need that confidence that the State still  
22 believes in it.

23           Last, but not least, increased consumer access  
24 to biodiesel, Propel puts biodiesel, either B-5 or B-20  
25 at all of our sites at no additional cost to the grant.

1 So, it's also a path for that and, you know, that's  
2 another area that's not funded under alternative fuel  
3 infrastructure so, please take into consideration that.

4 So, in summary I want to continue to urge you to  
5 fund the E85 infrastructure in California. It's a  
6 pretty well recognized solution to increasing access to  
7 biofuels. There's current -- there's growing demand,  
8 existing production, transportation, storage and lining  
9 infrastructure. Basically, all of the pieces are in  
10 place except for retail infrastructure.

11 So, companies like Propel are committed to  
12 putting that missing piece in place and we would  
13 appreciate your support on that, as well. Thank you for  
14 your time.

15 COMMISSIONER PETERMAN: And thank you for the  
16 update. I think it's useful for the Advisory Committee  
17 members and for staff to hear the update on how the  
18 progress is going on the stations that the program has  
19 funded to date.

20 I know that Propel's in communication with our  
21 staff on the progress, and any delays, and continuing to  
22 work with you on making sure that the stations are there  
23 to meet the demand.

24 You also noted a couple of suggested changes in  
25 the document around the infrastructure and I think staff

1 probably recorded those, but also it would be great for  
2 you either to submit comments or follow up with staff on  
3 some of those clarifying data. Thank you very much.

4           Next, we'll hear from Caroline Quinn. Please,  
5 welcome.

6           MS. QUINN: Thank you. I'm Caroline Quinn with  
7 Delta Diablo Sanitation District, representing the Bay  
8 Area Biosolids to Energy Coalition.

9           The Coalition is comprised of 18 agencies and  
10 we've grown in the last four years from 6 to 18  
11 agencies, representing over 4 million people in the Bay  
12 Area.

13           The range and the growing size of our group  
14 reflects the interest and the need in our industry to  
15 maximize the energy value of biosolids as a means of  
16 achieving sustainable management of biosolids and  
17 meeting our own goals of becoming energy neutral and,  
18 ultimately, energy positive.

19           Earlier comments today related to where the  
20 feedstock will come from for alternative fuels. The  
21 wastewater industry can be a significant source of  
22 feedstock for renewable energy.

23           Most wastewater biosolids are presently hauled  
24 hundreds of thousands of miles each year for direct land  
25 application, land filling or, in some cases, energy-

1 intensive composting.

2           Our goal is to instead use them locally as a  
3 critical component of the State's renewable energy  
4 portfolio.

5           With high energy value, there is significant  
6 potential for biosolids to be a 24/7 renewable feedstock  
7 to displace a portion of the fossil fuel used in  
8 California and the United States.

9           We've identified several technologies with the  
10 potential to produce different forms of renewable  
11 alternative vehicle fuels. These include low sulfur,  
12 clean diesel, hydrogen fuel, and Fischer-Tropsch liquids  
13 that can be used as fuel additives to reduce emissions.

14           The feedstock potential associated with  
15 wastewater treatment plants is vast, and growing, and  
16 produced on a 24/7 basis.

17           In 2011, California treatment plants generated  
18 710,000 dry metric tons of biosolids. The Bay Area,  
19 alone, generates over 158,000.

20           One wet ton of biosolids has the potential to  
21 produce 40 gallons of clean, low-sulfur diesel fuel or  
22 26 kilograms of clean, renewable hydrogen.

23           Wastewater treatment plants have the potential  
24 to become feedstock providers and energy-generating  
25 plants by harvesting locally sourced energy in our

1 biosolids to offset local energy and fuel demands.

2           Traditionally technologies, though, have  
3 required large-scale regional facilities for economy of  
4 scale and energy-intensive drying of the biosolids prior  
5 to conversion, making it virtually impossible to get net  
6 energy.

7           Through our work, our Coalition has identified  
8 alternative technology approaches, including some that  
9 can directly process high-moisture feedstocks, like  
10 ours, to produce drop-in liquid fuel.

11           Renewable diesel, with distribution  
12 infrastructure in place is a good, intermediate step  
13 towards reducing dependence on fossil fuel with the  
14 ultimate goal of zero emission fuels.

15           We've also identified technologies, though, to  
16 convert biosolids to hydrogen fuel for the next  
17 generation of vehicle.

18           Deployment of biosolids to liquid fuel in the  
19 near term at wastewater treatment plants can provide a  
20 local source of clean, renewable diesel and  
21 significantly reduce hauling for us and the associated  
22 emissions.

23           However, bringing new technology such as this to  
24 market requires State and Federal investment. These  
25 processes have been pilot tested. The next phase of

1 development, commercial scale demonstration is capital  
2 intensive.

3 Demonstration at market scale is an investment  
4 that's well-aligned with the Energy Commission's  
5 mission.

6 The overarching goal of our Coalition is  
7 development of biosolids as a renewable energy source  
8 and reduction of greenhouse gases. Investment by the  
9 Energy Commission in biosolids to fuel liquid and  
10 hydrogen fuel supports our efforts to attain these  
11 goals.

12 Investment in biosolids to liquid and hydrogen  
13 fuel is an investment in developing technologies to meet  
14 the State goals. It's an investment in helping public  
15 agencies serving the public need to reduce our energy  
16 demand and greenhouse gases associated with wastewater  
17 treatment and biosolids management.

18 Once demonstrated, these technologies can easily  
19 be replicated throughout the State by other wastewater  
20 treatment plans with the same objectives as our  
21 coalition. And with that, replication at plants  
22 throughout the State, the return on the investment in  
23 demonstration will be magnified many times over.

24 We strongly encourage the Energy Commission to  
25 allocate funds towards biosolids to energy and to

1 structure solicitations to meet this public need, to  
2 increase funding of alternative production --  
3 alternative fuel production and issue solicitations  
4 specifically targeted to renewable drop-in fuel and  
5 biosolids to hydrogen fuel.

6 We appreciate the work of the Energy Commission  
7 in this area and we're excited about the possibilities  
8 that this program holds. Thank you for the opportunity  
9 to speak.

10 COMMISSIONER PETERMAN: Thank you and thank you  
11 for briefing us all about this initiative that's  
12 happening with so many different public agencies and  
13 stakeholders.

14 Next, we'll hear from Evan Edgar.

15 MR. EDGAR: Commissioners, Committee members, my  
16 name is Evan Edgar, I'm an engineer for the California  
17 Accomplish Coalition.

18 COMMISSIONER PETERMAN: Mr. Edgar, I think  
19 you're going to have to pull the mic up or something and  
20 make sure everyone online can hear you.

21 MR. EDGAR: Yeah, Evan Edgar, engineer for the  
22 California Accomplish Coalition.

23 I'm here today supporting the fuel production  
24 for biofuels, specifically for biomethane. I represent  
25 anaerobic digestion where in California today there's



1 been a great initiative for the program EIR in order to  
2 develop that infrastructure. And the Air Board has  
3 developed a fuel pathway in order to call anaerobic  
4 digestion bio renewable CNG as minus 15.

5           There is a table within the report that talks  
6 about the low carbon fuel values for other pathways,  
7 from landfills and from digesters to be plus 15. But  
8 the beauty about renewable CNG from anaerobic digestion  
9 CARB has determined as minus 15.

10           With that, in the last round the California  
11 Energy Commission determined that landfill-based  
12 biomethane should not count towards any further funding.  
13 And, hopefully, this round coming up in the future, that  
14 landfill-based biomethane should not get any funding.

15           There's an initiative by Cal-Recycle to have a  
16 75 percent goal by 2020 to get food waste out of  
17 landfills. There should be no incentives to put food  
18 waste back in the landfills to make biomethane, to get  
19 funding from the California Energy Commission.

20           So, we applauded the California Energy  
21 Commission for the last rounds to not give any money for  
22 landfills. In this round coming up, we would support  
23 that as well. Thank you.

24           COMMISSIONER PETERMAN: Thank you for your  
25 comment. Next, we'll hear from Bill Williams, EMD.

1 MR. WILLIAMS: I did earlier.

2 COMMISSIONER PETERMAN: Oh, okay.

3 MR. WILLIAMS: Just the closing idea was apples-  
4 to-apples today. I just want to emphasize that existing  
5 vehicles are the low-hanging fruit.

6 COMMISSIONER PETERMAN: Okay, thank you.

7 Christopher Perkins, I believe on the line.

8 MR. PERKINS: Yes, thank you. Can you hear me?

9 COMMISSIONER PETERMAN: Yes, please go ahead,  
10 sir.

11 MR. PERKINS: Very good. Yes, I'm the Executive  
12 Vice President of Sky Tran, Incorporated.

13 Our company is developing an automated electric  
14 vehicle system at the NASA Ames Research Center in Mt.  
15 View, California. And we'd like to propose our  
16 technology to you, to the program, because of its  
17 potential to create a more energy-efficient electric  
18 vehicle that we believe will be widely adopted.

19 As a matter of background, automated electric  
20 vehicles operate on an elevated guideway network, the  
21 passenger throughputs in excess of 11,000 passengers per  
22 hour.

23 So, basically, the idea here is that we want to  
24 create an elevated lane above existing traffic that  
25 moves the equivalent of about three lanes of freeway

1 traffic on a two-foot by two-foot diameter aluminum  
2 guideway.

3           Also, of course, we think there are real  
4 benefits here because we can substantially power this  
5 system with flexible solar panels that would be on the  
6 guideway.

7           Now, I know when we think of electric vehicles  
8 we think of four-wheeled vehicles that travel on a  
9 roadbed, but what I'd like to propose today is that we  
10 expand our thinking on just what an EV can be.

11           For example, automated electric vehicles don't  
12 have wheels. We use a magnetic levitation, leaner motor  
13 powertrain instead.

14           Now, this MAGLEV approach we think has clear  
15 advantages as the vehicle uses about half the energy of  
16 a conventional four-wheeled electric vehicle.

17           Now, in addition, our automated electric vehicle  
18 eliminates range anxiety as you don't need batteries for  
19 a normal operation, as the vehicles get their power from  
20 the guideway and they don't suffer from the inefficiency  
21 of lugging a heavy battery around and the need for  
22 constant charging.

23           Now, so far we've had the support from US DOT.  
24 We've demonstrated an operational MAGLEV electric  
25 vehicle and the associated guideway prototype under a

1 four-year US DOT Research and Innovation Grant.

2 And in addition, we've attracted a major global  
3 automobile manufacturer who's working with us to design  
4 the latest generation of our vehicle.

5 Now, recently, we've achieved a major  
6 breakthrough with our MAGLEV technology that's gotten  
7 the attention of the FTA's leadership.

8 FTA is quite excited about the deployment of our  
9 automated electric vehicle guideway system as it is  
10 lower in cost and more energy-efficient than light rail  
11 and bus rapid transit.

12 In particular, because automated electric  
13 vehicles provide an on-demand, non-stop ride, just like  
14 a private automobile, they're quite excited by the fact  
15 that this could boost ridership on public transit  
16 because of the added convenience and, actually, the  
17 privacy of basically a public transit mode that uses  
18 these individual electric vehicles.

19 For example, one place they see in California  
20 where this could be useful is as part of the high-speed  
21 rail plan there's a real need to bring people to the  
22 stations without using their cars, so they see our  
23 system as being a feeder system that provides access to  
24 the California high-speed rail systems.

25 So, overall the bit win is it reduces vehicle

1 miles traveled and significantly reduces greenhouse  
2 gases.

3           Now, currently we're in discussions with the  
4 FTA's Office of Mobility Innovation to demonstrate on a  
5 track that would be built, that would show all of the  
6 various elements of the system, the guideway, the  
7 vehicles, the automation, et cetera.

8           This system we're proposing to be built at the  
9 NASA Ames Research Center in Mt. View, California.

10           Now, a potential FTA grant could provide an  
11 opportunity for matching funds from the AB 118 program  
12 in the emerging opportunities category.

13           Recently, we actually very much appreciated  
14 Commissioner Peterman hosting a meeting to discuss this  
15 opportunity and we were quite happy that it was so well  
16 received by her.

17           So, we would like to encourage the AB 118  
18 program to provide funding for the demonstration of this  
19 automated electric vehicle system using the existing  
20 funds that have been identified in past Investment Plans  
21 in the emerging opportunities category.

22           And, of course, provide funding from the  
23 emerging opportunities category that I think is  
24 currently identified in the 2013-2014 Investment Plan.

25           Now, what Sky Tran is proposing here is the

1 demonstration of a --

2 COMMISSIONER PETERMAN: Mr. Perkins, I'm going  
3 to have to ask you to wrap up, as well --

4 MR. PERKINS: Okay.

5 COMMISSIONER PETERMAN: -- because we have other  
6 comments, as well as the Advisory Committee comments to  
7 go through.

8 MR. PERKINS: Yeah, this is -- I'll make my  
9 comments brief. But what Sky Tran is proposing here is  
10 a demonstration of the transformational technology that  
11 could have a major impact on advancing the Commission's  
12 goals here.

13 When you compare head-to-head with other  
14 advanced vehicle technologies, I think close analysis  
15 will reveal that in using automated electric vehicles  
16 you're going to get equal or greater benefits from the  
17 limited funds available.

18 Now, the AB 118 program is definitely about new  
19 technology, but I think it's fundamentally about  
20 changing consumer behavior.

21 I think the hundred million dollar question here  
22 is which, if any, of these technologies under  
23 consideration will be widely adopted.

24 So, what we are proposing doesn't require mass  
25 adoption for getting people to make the huge decision of

1 what type of alternative fuel vehicle to purchase.

2           Rather, our strategy is to put in place a  
3 transportation alternative that can provide a mobility  
4 option as good, or better than a car that can be  
5 obtained for simply the price of buying a ticket to use  
6 the system.

7           We hope the program, your AB 118 program,  
8 supports this approach and thank you very much.

9           COMMISSIONER PETERMAN: Thank you for calling  
10 and for your comments. As I noted to you before, I  
11 thought it would be good for you to start to engage with  
12 the 118 Advisory Committee.

13           Oftentimes I get the privilege, as a  
14 Commissioner, as folk coming to brief me on innovative  
15 things happening in this space, and glad that you took  
16 the opportunity to make everyone here aware of your  
17 project.

18           And as you noted, we are looking for feedback on  
19 the emerging opportunity section and we have identified  
20 projects that have a Federal cost share. And to the  
21 extent that your project secures one or is one of those  
22 types of projects then continue to engage with our staff  
23 about the progress of that.

24           Next, let's hear from Frank Ziegler. He's on  
25 the phone or in the room?

1 MR. ZIEGLER: Yes, hi, good afternoon

2 Commissioner Peterman, how are you today?

3 COMMISSIONER PETERMAN: Fine and yourself?

4 MR. ZIEGLER: Good, good, thank you. This is  
5 Frank Ziegler with Green Craft and we are a manufacturer  
6 in Southern California of natural gas trucks. And I  
7 just wanted to once again thank you very much for your  
8 forward thinking and let you know that the incentive  
9 programs are working, and we very much appreciate the  
10 adoption of the program and ask that we continue this on  
11 an ongoing basis.

12 The buy-down incentive at invoice is tremendous.  
13 It gives the individual the opportunity to take  
14 advantage at an invoice, as opposed to a tax credit.  
15 So, again, we do appreciate that, it is working and  
16 thank you, again, for your forward thinking.

17 In the aspect of manufacturing and the \$10  
18 million, what I would ask that you separate those into  
19 two separate categories.

20 Recently, on the last opportunity it was for  
21 alternative fuels and there was a mixture between CNG  
22 and electric. Obviously, the lion's share went to  
23 electric.

24 However, we were a finalist. And we would ask  
25 that you might diversify those by segmenting, again out,



1 specifically manufacturing capital for electric and then  
2 or manufacturing capital specifically for natural gas  
3 because they are two separate entities.

4 So, having said that, again, thank you very  
5 much. We do appreciate and we ask that you continue the  
6 program.

7 COMMISSIONER PETERMAN: Thank you for your  
8 comment.

9 In the room we have public comment, as well,  
10 from Jamie Hall. Please approach the microphone.

11 And then that is the end of the public comment  
12 cards I have. So if there's anyone else wishing to make  
13 a public comment, please see Mr. Smith in the back of  
14 the room or on the line, and then we'll be turning to  
15 the Advisory Committee members for final comments.

16 Mr. Hall.

17 MR. HALL: All right, thank you, I will make it  
18 very quick. This will just mostly be a thank you, as  
19 well.

20 AB 118 is a really important program for our  
21 transportation future. And I know it's a really  
22 difficult task that staff has to sort out how to make  
23 these investments.

24 I like the idea of metrics, but it's hard to  
25 figure out, you know, what are the right metrics and

1 what are the right apples-to-apples comparisons.

2 What do you do on near-term deployment versus  
3 longer-term research, development and demonstration? We  
4 need both.

5 Why deployment of sort of incrementally better  
6 technology versus initial targeted deployment of really,  
7 potentially transformational technology? We need both  
8 there.

9 Fuels, vehicles, outreach, standards, we need  
10 sort of all of this and staff has a real tough balancing  
11 act to pull off figuring out what to do with this  
12 limited funding.

13 So, given all that I want to thank you for not  
14 overlooking the truck sector, generally speaking, which  
15 often is overlooked in these discussions.

16 California, as a State, has a pretty good plan  
17 in place for light-duty vehicles, but it's not as clear  
18 what the path forward is on medium- and heavy-duty  
19 vehicles.

20 And a lot of these discussions that you hear,  
21 people are really just focused on electric cars and sort  
22 of passenger vehicles.

23 I want to thank CEC -- you know, this is  
24 separate from 118, but CEC provided funding for the  
25 CalHEAT Truck Research Center that has really brought in

1 a lot of industry input and come up with a pretty  
2 detailed road map on what needs to happen for medium-  
3 and heavy-duty vehicle technology.

4 We'll be working with the Energy Commission to  
5 sort of vet this in 2013, but in order to get to  
6 anything like what is laid out in that road map and meet  
7 our long-term goals, the funding provided by the 118  
8 program for truck technology demonstrations and for  
9 deployment is absolutely essential.

10 So, I'm sure we can keep improving things and  
11 keep coming up with better metrics. It's a tough  
12 balancing act and it's good to see that you're not  
13 leaving out some of what we think are the bigger  
14 problems. Thank you.

15 COMMISSIONER PETERMAN: Thank you.

16 Any other public comment in the room or on the  
17 line?

18 Okay, let's turn back to our Advisory Board  
19 members. I'll start here to my left, Jan, do you have  
20 any additional comments you'd like to make, now?

21 Or we could start with Steve, if you like, he  
22 looks very calm and ready.

23 COMMITTEE MEMBER SHARPLESS: Yeah, why don't you  
24 start with Steve, I'll come at the end of the line.

25 COMMITTEE MEMBER KAFFKA: I'd just like to

1 reiterate that I think staff's done a good job of trying  
2 to balance all these interests.

3           And reiterate a comment that a few people have  
4 made in public comments that emerging opportunities and  
5 manufacturing issues are -- it's important to have  
6 sufficient regard for things that are from over the  
7 horizon.

8           Someone mentioned dimethyl ether a little while  
9 ago and I think that's -- for instance, it's hardly ever  
10 discussed, but it looks like a potentially good  
11 technology to me, from biomass even.

12           And so it's really important that we keep in  
13 mind that there are things over the horizon or companies  
14 that are under the radar that pop up all of the sudden  
15 that might need some critical support and, really, some  
16 flexibility for that.

17           COMMISSIONER PETERMAN: Thank you.

18           Ms. Garland?

19           COMMITTEE MEMBER SHARPLESS: Oh, you want to  
20 throw it back this way. Well, thank you for giving me  
21 those seconds to collect all of my thoughts.

22           COMMISSIONER PETERMAN: Oh, of course.

23           COMMITTEE MEMBER SHARPLESS: You know, I think  
24 that this process has been iterative and so it's  
25 important to kind of understand the fact that this

1 program has changed over time, even when you talk about  
2 matrixes. I think that it's been a learning experience  
3 and that the staff continues to monitor what's going on  
4 in the industry.

5           It's hard to understand what's going on in  
6 investments because everything's sort of on hold for a  
7 while, so I'm not sure how we calculate some of that  
8 into what's happening as far as what we're dealing with  
9 here.

10           Will the spigots open and will money start to  
11 flow is going to be an interesting question.

12           But I think that the program, from what I've  
13 been able to observe -- well, my time on the Advisory  
14 Committee has been, for the most part, very successful  
15 and I think that's been because of the input of this  
16 group and because that you have been flexible in  
17 allowing yourself to be informed by the changes.

18           Now, I think the uncertainty is how the policy,  
19 the policies that are developed by California and the  
20 Legislature that continues to be passed, such as what  
21 Tim brought up in terms of, you know, methane not coming  
22 from outside of California, how's that going to drive  
23 things differently?

24           But all of these levers continue to come into  
25 the mix of the decision making in this body.

1           I have some concerns on some of the categories,  
2 but I don't know that the concerns would change the  
3 funding level. I think the concerns would be more as to  
4 how you eventually think about your conditions that you  
5 put in your solicitations. That's important.

6           So, we're talking at a high level when it comes  
7 to funding categories, but the success of those  
8 solicitations might be well how you put together the  
9 conditions and the way that you drive those  
10 solicitations.

11           So, I would say that there -- I would echo the  
12 fact that in some areas I would like to see more money,  
13 but I'm not quite sure how much more money needs to be  
14 there because we probably need more money in every  
15 category to do what we would like to do.

16           But government has a role and the role is in  
17 certain areas positions that you wouldn't take in the  
18 private sector, and that the reason why government's in  
19 this is because the private sector won't get in it until  
20 you reach a certain level, until they find out that it's  
21 serious, until they find out it has traction. And then  
22 you begin to find the tipping point for when you get  
23 private investments.

24           That doesn't mean that government should go  
25 willy-nilly, which is why I think what Will is

1 suggesting, and others around the table about trying to  
2 develop a metrics, as hard as it is, would be very  
3 useful both on the private side and the public side.

4 But I guess I'm not as wedded to the specificity  
5 and the quantification that will is because I've seen  
6 too much happen in government programs.

7 You know, I was chair at the time that we  
8 adopted the regulation for the ZEV and everybody thought  
9 that was a really stupid idea, as I recall.

10 So, you know, it's interesting now to hear where  
11 we're at in California, today.

12 I don't want to take up any more time, but I  
13 just want to say that I look forward to seeing the  
14 changes that you all come up with in the next Investment  
15 Plan and thank you for allowing me to put my two cents  
16 in today.

17 COMMISSIONER PETERMAN: Thank you, Jan, and we  
18 appreciate your perspective, as a former regulator with  
19 two of the agencies that are most engaged on  
20 transportation policy.

21 And I think you've been very eloquent in  
22 explaining some of the challenge with State investment  
23 and how that relates to public investment and larger  
24 policy goals.

25 I know Mr. Carmichael as a firm stop at 3:00.

1 So, if you don't mind, Ms. Garland, I'm going to turn to  
2 him and then I'll go back to you. Thank you.

3 COMMITTEE MEMBER CARMICHAEL: Oh, thank you,  
4 thank you.

5 COMMISSIONER PETERMAN: Maybe you'll buy her  
6 coffee one day.

7 COMMITTEE MEMBER CARMICHAEL: Yes. Thank you,  
8 both of you.

9 Real quick, two things, one, I want to thank Mr.  
10 Wright for the -- Mr. Knight, sorry, for giving me a  
11 Christmas gift for my kids. I really didn't know what I  
12 was going to get my kids for Christmas and now I know.  
13 And I really appreciate it, they're going to love them.

14 More seriously, I think that CEC still has an  
15 image problem in the Legislature, in the Capitol,  
16 period, and we have coupled that with we have the  
17 largest freshman class coming in, in a long time, in the  
18 Legislature.

19 I really think it would be a good idea for the  
20 staff and maybe some of the Commissioners to hold a  
21 briefing on the draft plan, in the Capitol, and just  
22 invite staff to come and learn what you're up to.

23 This is a substantive program that has a lot of  
24 good information that -- especially if you're green to  
25 this sector, and you've got a new member who is



1 interested in this issue and your staff doesn't -- you  
2 may not know that much about it.

3           It's a great marketing tool, I think. And  
4 whether you wait until the next draft is out or you do  
5 with this, frankly, I can make an argument that you try  
6 and do it before the end of the calendar year because  
7 the staff's going to be a lot more available in December  
8 than they are going to be in January.

9           And it doesn't have to be a long program, it  
10 could be, you know, a similar briefing to what was given  
11 this morning and then field questions. I just think it  
12 couldn't do anything but help.

13           Obviously, there's going to be a few naysayers.  
14 But the majority, I think it's going to bring them up to  
15 speed in a positive way and I encourage you to think  
16 about that.

17           COMMISSIONER PETERMAN: Thank you, Mr.  
18 Carmichael.

19           COMMITTEE MEMBER CARMICHAEL: Thank you for  
20 letting me go out of turn.

21           COMMISSIONER PETERMAN: Ms. Garland.

22           COMMITTEE MEMBER GARLAND: The most brilliant  
23 part about this program, to me, is that back when this  
24 was just an idea, when it was a legislative mandate and  
25 there were a whole bunch of people sitting in a room,

1 there was a gentleman who stood up and he made a  
2 statement that stuck, will stick in my head until the  
3 day I die, that the problems that we're trying to face  
4 down can't be solved with a silver bullet, it's a silver  
5 shotgun.

6 And I think what we're doing is as close to the  
7 silver shotgun as we can possibly do.

8 And I'm just grateful to be a part of this and  
9 I'm grateful to the staff for their patience, and long-  
10 suffering, and listening to my God-awful voicemail  
11 messages. So, for that I thank you and thank you for  
12 all of your help for us to keep us going.

13 COMMISSIONER PETERMAN: Thank you.

14 COMMITTEE MEMBER COLEMAN: Thanks. Yeah, I just  
15 wanted to reiterate something I probably should have  
16 said earlier, but that others have said, which is I  
17 really do appreciate the hard work that the staff has  
18 put in to all of this. I mean it is not an easy problem  
19 and we've seen it over the last five years.

20 There's a lot of complexity, there's a lot of  
21 competing interest and, you know, even those of us who  
22 are in the private sector can appreciate how complex  
23 managing all of these different program interests are  
24 coming from a lot of a different agencies.

25 So, I think that's a hard problem and I

1 appreciate that.

2           And I also appreciate Jan's comments around the  
3 challenges of apply too specific a metric around any of  
4 these things. Trying to over-subscribe too much is  
5 probably not the right path to go down, either.

6           I think that that said, I do continue to have  
7 concerns about how we elevate the logic and the  
8 rationale behind each of these categories.

9           And I think from the perspective of approaching  
10 the next draft, it would be very helpful to me and I  
11 think some others here, and I do think very important  
12 for the public consumption of this draft and allocation  
13 that we examine, particularly, things like the  
14 infrastructure allocations and really apply some sort of  
15 set of metrics just to evaluate on a -- not a purely  
16 apples-to-apples and not in some sort of overly  
17 prescribed way, but in a way that we can understand what  
18 the cost benefits are more clearly than we currently do.

19           I think that would be extremely helpful and  
20 important.

21           And it reminds me of, you know, an issue. I  
22 think the challenge here is with government funding  
23 there's a big challenge around the state of "if not, but  
24 for," i.e., if not but for these funds, you might not  
25 see something come to the light of day is a very good

1 measure of whether or not you should be investing.

2 But I think it's a double-edged sword which is  
3 "if not" means, you know, the private sector is probably  
4 not going to do it. But "if not, but for" means that if  
5 you do this, it will happen.

6 And so I think that's the delicate balance that  
7 this program treads every day and the real risk is that  
8 it doesn't materialize in the end and we all see the  
9 consequences of that.

10 So, for me, the most important aspect of doing  
11 the evaluation around these categories is do we see how  
12 this ultimately gets us to where we need to go for a  
13 particular program and do we see the handoff to the  
14 private sector where there is an appropriate private  
15 market to support what we've invested from the public  
16 side.

17 COMMISSIONER PETERMAN: Thank you. And I will  
18 note, Will, that we always appreciate the perspective  
19 that you're able to bring as someone working with a  
20 venture capital firm.

21 And, indeed, these public investors are meant to  
22 work along with and spur private investment, and so I  
23 think your feedback and questions are welcomed and  
24 appreciated.

25 And that you will be a useful member with

1 helping staff think through metrics going forward.

2 Just in terms of expectations around timelines,  
3 however, staff will have about a week after they receive  
4 your comments to incorporate them into the first draft  
5 that goes to the Legislature.

6 Having to meet both internal arriving deadlines,  
7 and with the holidays, as you know, it will be tight.  
8 And so I would not expect to see that type of assessment  
9 in the January 10th draft.

10 However, this has been a good dialogue and I  
11 will encourage staff to start the process for doing  
12 that.

13 And then we'll have the draft that will be  
14 considered the early part of the year.

15 So, this conversation will continue and staff  
16 will look earnestly at this issue. But, you know, short  
17 of major changes that we want straight from the plan, we  
18 won't have much time for that full-blown explanation.

19 But I think there are parts of the plan that  
20 will be strengthened based on this discussion.

21 Yeah, Bob says if I don't say what year it's  
22 due, then maybe we can say by January 10th some year you  
23 will see this analysis.

24 (Laughter)

25 COMMISSIONER PETERMAN: But, no, definitely good

1 food for thought and work that will benefit us long  
2 term, as well, as we move forward to continue the  
3 program.

4 Alberto.

5 COMMITTEE MEMBER AYALA: Thank you. I need to  
6 start off by saying that there's no one happier than me  
7 that the first meeting is almost over because it  
8 looks --

9 (Laughter)

10 COMMITTEE MEMBER AYALA: -- it looks like I'm  
11 going to make it in one piece.

12 So, again, I just want to thank you for the  
13 opportunity and the Committee, as well. I think it is  
14 the case where the comments that I heard today are well-  
15 taken.

16 Inherent in what we see here is some risk, but I  
17 could not agree more with Mr. McKinney's opening remarks  
18 in the sense that the challenge that we have before us  
19 is enormous.

20 The climate change goals that we have require us  
21 to take some risks. If we ever get into a more detailed  
22 discussion in terms of the air quality challenges that  
23 we have, as an Air Board, the -- what's before us is  
24 equally daunting.

25 So, we want to fully support the plan. We look

1 forward to continuing to work very closely with the  
2 Commission, with the members of the Committee providing  
3 information, providing references and perhaps putting on  
4 the table some information that advances on some of the  
5 questions that were posed today which, again, they're  
6 all very good.

7 But again, just want to express once again and  
8 reaffirm the Air Resources' Board commitment to continue  
9 work on this very important plan. So, thank you.

10 COMMISSIONER PETERMAN: Thank you and welcome to  
11 the table.

12 Mr. Knight.

13 MR. KNIGHT: I would just like to say thank you  
14 to everybody around the table, Commissioner. I think it  
15 was great dialogue today. I think we heard a lot of  
16 good ideas, a lot of great comments.

17 I think this is kind of the second go around for  
18 me with the plan. I think the first one went very  
19 quickly, I don't think we had the opportunity to do the  
20 dialogue we had with this.

21 And I think this is great. I mean I can't see  
22 how we can't make this better or tweak it the ways that  
23 it should work.

24 And, you know, once again I just want to say  
25 thank you to everybody. Open invitation, any time

1 you're over at the Napa Valley, Commissioner and anybody  
2 else here at the table, to come visit our operation over  
3 there and see what we've done over the last 20 years.  
4 And, you know, you'll see where the yellow school bus  
5 really should be going and is going in a direction, and  
6 we continue to keep pushing it that way. Thank you.

7 COMMITTEE MEMBER TUTT: Thanks. This is Eileen  
8 Tutt with Cal ETC.

9 I just have a couple of comments and I'm really  
10 sorry I missed -- you went through all of it very quick  
11 after we got through, alternative fuel infrastructure,  
12 so I didn't think I was going to miss as much as I did.

13 But I want to make a couple of comments on the  
14 actual plan. I think the regional alternative fuel  
15 readiness planning, and I know John Shears said this  
16 already, but \$1 million just is not enough. It was  
17 over-subscribed last time.

18 And local action is where this is all going to  
19 happen, not just for electric vehicles, but for all of  
20 the alternative fuels. We've got to get local  
21 governments and regions prepared and supportive of this,  
22 so I think that's very important.

23 I want to say that I don't know where outreach  
24 and education fits into this, but there's just two  
25 comments I'd like to make in that regard.



1           One is this is the Alternative Fuel and Vehicle  
2 Program and I know we're talking about air quality and  
3 climate change, and those are all really important but  
4 we -- from an economic perspective, we have to get to  
5 more diversification in the fuel sector in this State.

6           And I don't anyone -- we all have our various  
7 areas where we, you know, have our strongholds. I think  
8 all of us generally support each other, but I don't  
9 think anyone disagrees that this program is about fuel  
10 diversity.

11           And we want to make sure that in diversification  
12 of our fuel sector we don't harm the environment, but I  
13 don't want to forget that as one of the key metrics. We  
14 just have to get off dependence on a single fuel and  
15 California has to lead, and we are.

16           So, I think that's very, very important to just  
17 remember because it doesn't come up a lot. We talk  
18 about climate change, we talk about air quality, but we  
19 don't talk about the fact of why this was created.

20           And then in terms of outreach and education, I  
21 don't know if that's part of the market and program  
22 development, in which case \$1 million is really, really  
23 too small.

24           But there are some pretty unique programs out  
25 there right now for electric vehicles. Plug-In America

1 is incorporating dealer outreach into their program and  
2 I can tell you, having dealt with dealers, that that's a  
3 very, very important component of getting these vehicles  
4 acceptable and educating consumers. And electric  
5 vehicles are kind of the launching pad, but it will be  
6 true for hydrogen, it will be true for any alternative  
7 that we've got to get the dealers prepared.

8           And so I don't know where that fits in and then,  
9 of course, there's the EDTA, the Electric Drive  
10 Transportation Association, and Edison Institute.

11           There's a lot of outreach and education going on  
12 that could use some of this funding because the next for  
13 us, for a home plug-in electric vehicle stand point, the  
14 valley of death and getting out of that valley of death  
15 is about consumer awareness and consumer education.

16           And so somewhere in here if we want to get, you  
17 know, launch plug-ins beyond just the early adopters,  
18 we're going to need some more outreach and education.

19           So, I don't -- I mean again, I'll talk to staff  
20 afterwards. I don't know where that fits in here, but I  
21 think that \$1 million is not even halfway to what we  
22 need, especially given that we were over-subscribed the  
23 first time, the first time we did this and we're now  
24 adding the potential for other fuels to take advantage  
25 of this program.

1           COMMISSIONER PETERMAN: Thank you for your  
2 comments. And on the issue, generally, about marketing  
3 and outreach, it's something that I've thought about a  
4 bit, and staff has thought about, and it's not  
5 traditionally the type of things that these types of  
6 programs support.

7           And so part of it is, again, hearing from  
8 members about, and the public about how that's a  
9 necessary part of getting to this fuel diversity and  
10 some of our goals, as well. So, it's a conversation we  
11 can continue to have and there are some challenges  
12 around that.

13           Mr. Shears.

14           COMMITTEE MEMBER SHEARS: Great, thanks. First,  
15 I just want to thank the staff for again doing a  
16 fantastic job of managing and balancing all of the  
17 tensions in this portfolio approach that we're trying to  
18 push forward.

19           I just want to highlight, you know, very much  
20 that I agree with the way Jamie Hall succinctly  
21 expressed, you know, the purposes of this program which  
22 are, you know, what can we do that are lower risk in the  
23 near- and mid-term versus what can we be doing that are  
24 higher risk, but transformational in the long term. And  
25 I think that's where this discussion took us again,

1 today.

2           And, Alberto, I think maybe it was part of our  
3 hazing for you because this was actually a discussion we  
4 had many years ago when we were initially launching the  
5 program. So, just to give you a little flavor that  
6 sometimes we do have medium and substantive debates here  
7 at the Advisory Committee.

8           And I just wanted to note, and thanks to Randy  
9 for reminding us that there is this carryover, it looks  
10 like, of \$2.7 million remaining from 2011-2012, 2012-  
11 2013 program funding that could be directed toward  
12 regional readiness planning. So, the total available  
13 funding looks like it could be \$3.7 million, including  
14 the \$1 million from the current draft Investment Plan.  
15 So, that actually looks like a more promising amount, so  
16 Table ES1 on page 4.

17           So and again thanks for all the wonderful work  
18 that you do here at the Energy Commission.

19           COMMITTEE MEMBER GERSHEN: Thanks, Joe Gershen  
20 here. So, I also wanted to thank everybody for all  
21 their hard work, not to just be the bull in the china  
22 shop, but also one to reiterate the need for the  
23 metrics.

24           And I think, you know, before I came on the  
25 Advisory Committee I did some research and did see that

1 this had been asked for before, and I was glad to see  
2 Will, and Steve, and others bring this up as well.

3 So, you know, when we submitted the white paper  
4 back in September, you know, we were looking for some  
5 sort of response to that and which was why it was a  
6 little surprising this time to not see anything, really.

7 So, just wanted to kind of reiterate that, I  
8 think it would be great to see that.

9 I think it would be eye-opening and enlightening  
10 for folks to just see it in sort of a viewpoint from,  
11 you know, what's actually happening, what are the real  
12 metrics on the ground.

13 And, obviously, we need to invest in all of  
14 these different things and, of course, we need to have a  
15 broad portfolio of non-petroleum fuels.

16 But we also -- you know, climate change is upon  
17 us and we need to really address it, and we need to know  
18 that the dollars, the taxpayer dollars that we're  
19 putting in are being as effective as they can be. Not  
20 that we don't want to add to some of those priming-the-  
21 pump technologies, but I think it's as important that we  
22 are as effective as we can be. Thanks.

23 MR. WILLIAMS: Thank you, Clark Williams Cal-  
24 Recycle. I certainly enjoy the opportunities to work  
25 with CEC staff on the AB 118 Investment Plan.

1           A couple of comments; one, the ongoing efforts  
2 to provide early notice to folks about upcoming funding  
3 opportunities I think is really helpful in getting good  
4 solicitations in, and good responses in. And you guys  
5 did that today, again, in the presentations that staff  
6 made, so I appreciate that.

7           In particular, regarding the alternative fuel  
8 production, I think Jim spoke very eloquently about some  
9 of the challenges of the differential between the  
10 alternative fuels and our traditional fuels, and the  
11 problems that causes for commercialization.

12           And I think the staff's done a nice job of  
13 identifying within the plan a need to look at, you know,  
14 valuing and emphasizing the production of co-products  
15 associated with fuels, as well, and what opportunities  
16 that proposes.

17           And I'm happy to see that that's an item that  
18 PIER's taken on as well for biomethane. So, certainly  
19 appreciate the thinking that's gone into some of those  
20 issues.

21           And we'll be getting some formal comments to the  
22 docket and look forward to continue to work with you on  
23 the Investment Plan.

24           COMMITTEE MEMBER ECKERLE: Thanks, this is Tyson  
25 Eckerle, again, with Energy Independence Now. I just

1 want to commend staff and the Commission on the work  
2 they did on the plan.

3           And if I could extend kind of a unique  
4 compliment, I thought it was very well-written. I read  
5 it on the plane ride up and it kept me engaged, which is  
6 kind of a unique thing to say for a document like this.

7           COMMISSIONER PETERMAN: We got a smile out of  
8 Charles for that.

9           COMMITTEE MEMBER ECKERLE: Yeah, it's well done.  
10 So, mainly, I think it's a well-balanced, well-thought-  
11 out plan. I do think that regional alternative  
12 readiness and planning is a very important component.

13           We started to do some outreach in Santa Barbara  
14 on hydrogen fueling stations and I've been kind of  
15 surprised at the response we get, and there's a lot of  
16 education that needs to happen.

17           And I think to the extent we can plug in, that's  
18 actually a really good metaphor, to the PEV  
19 Collaborative, what's happened there and the lessons  
20 learned, and kind of have a statewide coordination, I  
21 could see a lot of disparate readiness things taking  
22 off. And it would be nice to have an overarching  
23 statewide plan for these readiness things, kind of what  
24 John's starting to work on.

25           And so I think that's really important because

1 we've seen a lot of that in the delays in hydrogen  
2 fueling stations is in the local approval and education.  
3 And so to the extent we can grease those wheels before,  
4 to use another metaphor -- yeah, so thank you for the  
5 nice work.

6 COMMISSIONER PETERMAN: And we have -- do we  
7 have any members left on the phone who would like to  
8 make any final comments?

9 It doesn't seem like we do, so let me just wrap  
10 up with some final comments. First of all, thank you  
11 very much to everyone for being here today, in  
12 particular the Advisory Board members. I really  
13 appreciate the attention you've paid to this initial  
14 draft. I can tell that many of you have reviewed it, in  
15 addition to the funding table.

16 And most importantly, though, you're on this  
17 Advisory Committee because you represent a perspective  
18 and you have information at a level that's detailed,  
19 that's very useful to our staff that has to look at all  
20 of these industries at the same time.

21 And this -- I think Jan mentioned this is an  
22 iterative process and, indeed, it is.

23 I think that this meeting benefitted from the  
24 meeting we had in September, where we had an opportunity  
25 to talk more about some of the technologies and fuels.



1 I'd like to continue having meetings like that with the  
2 Advisory Group, that's beyond the Investment Plan  
3 because a lot of the discussion today has been less  
4 about the absolute number and more about where are these  
5 fuels going, where is the infrastructure going and  
6 really highlighting a lot of the uncertainties.

7           And there are a number of uncertainties working  
8 in this space, there is risk. And oftentimes, you know,  
9 we have to make a decision without perfect information.  
10 And you all get us closer, though, to being more  
11 informed about some of these topics.

12           I think the dialogue has been very healthy and,  
13 in particular, I appreciate everyone following up on  
14 issues that are important to them, issues that have been  
15 raised in previous meetings. This is how things  
16 eventually get done.

17           And we continue to look back at the work that  
18 was provided in September and see how we can move  
19 forward.

20           I think there was a general request and an  
21 interest raised in assessing the projects, and the  
22 investments we're making, the categories we're investing  
23 in and looking at the long-term sustainability. I will  
24 encourage staff to continue to work with stakeholders on  
25 how we best do that, how we best go about designing

1 metrics and thinking about them.

2           There may be some that will be easier to do than  
3 others, and so in the interest of getting information  
4 out there and figuring out the best place to start, and  
5 I do see a role for continuing some of that work as a  
6 part of the Benefits Report.

7           As we've noted, we've gotten comments today, but  
8 we also will appreciate your written comments. You can  
9 continue to submit written comments after December 11th,  
10 but in terms of having the opportunity for them to be  
11 reflected in the January draft, the sooner the better.

12           Once that draft is released we look forward to  
13 your read, again, of the plan, and meeting with you all,  
14 and putting something very good out there.

15           I think we're doing good work, it's part of a  
16 larger State and international process and we'd like  
17 this work to be relevant and helpful, so all comments  
18 are welcome.

19           I'd also like to thank and provide an  
20 opportunity for Chair Weisenmiller to comment. He  
21 continues, and his staff, to support the 118 work and  
22 appreciate his insights and dialoguing with him.

23           CHAIRPERSON WEISENMILLER: Thank you,  
24 Commissioner and thanks to everyone for being here  
25 today.

1           I think, certainly when you step back and think  
2 about some of the major issues we're facing, certainly  
3 our reliance on petroleum has been one which for decades  
4 we've been struggling with, the over-reliance in terms  
5 of what it means in terms of national security, in terms  
6 of air quality, in terms of basically our economic  
7 viability and development.

8           Having said that, this program is relatively  
9 small compared to the challenges. I mean as we've  
10 talked today, I mean there is the common refrain that  
11 most of these elements are ones which were pretty over-  
12 subscribed, over-subscribed with good programs.

13           You know, again, that's certainly, to an extent  
14 one of our responsibilities is to wisely invest the  
15 State's money. It's certainly a lot easier if you've  
16 got a lot of good programs that you're weighing, as  
17 opposed to discovering you can barely scrape up  
18 something that meets the threshold on stuff.

19           So, that's a good challenge. Having said that,  
20 most of you were pushing on why not more in this  
21 particular bucket? And again, the reality is it is a  
22 zero sum game. That if we do shift something from one  
23 category, increase a category then other categories have  
24 to decrease. And so that's a pretty touch calculus to  
25 make.

1           You know, obviously, sort of we all have this  
2 sort of element in the room or this sort of Legislature  
3 back in session, and the questions on the  
4 reauthorization but, certainly, we're at year five,  
5 seven and a half more to go.

6           You know, as we go forward, again, just the  
7 challenges that we're facing here are immense.

8           So, certainly, appreciate people's insights and,  
9 again, as we try to weigh some of these bets because  
10 they are fundamentally different bets of long-  
11 term/short-term.

12           You know, certainly thinking about how to do  
13 that analytically is an interesting challenge but at the  
14 end of the day a lot of it's going to be tough to put in  
15 sort of a simple framework that's easy for, I think, the  
16 other decision makers to understand.

17           So, again, thanks for your help on stuff.

18           COMMISSIONER PETERMAN: Thank you. And with  
19 that, we're adjourned.

20           (Whereupon, at 3:24 p.m., the business  
21 meeting was adjourned.)

22

23

24

25