

STAFF WORKSHOP  
BEFORE THE  
CALIFORNIA ENERGY COMMISSION

In the Matter of: )

Implementation of Alternative and )  
Renewable Fuel and Vehicle )  
Technology Program )  
----- )

Docket No.  
08-ALT-1

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TUESDAY, FEBRUARY 17, 2009

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**ORIGINAL**

Reported by:  
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Diana Schwyzer, Advisor to Chairman Douglas

Rhetta deMesa

Pilar Magaña

ALSO PRESENT

Paul Wuebben

South Coast Air Quality Management District

JoAnn Armenta

Clean Cities Coalition

Southern California Coalition of Governments

Bill Van Amburg

CALSTART

Chelsea Sexton

Lightning Rod Foundation

Jordan McRobie

California Fuel Cell Partnership

Paul Relis

CR&R

Herbert Burnett

Burnett and Burnett

Jon Van Bogart

Clean Fuel USA

James Provenzano

Clean Air Now

Robert Bienenfeld

American Honda Motor Company, Ltd.

David Blekhman

California State University, Los Angeles

ALSO PRESENT

Mark Aubry  
Smith Electric Vehicles Group

Tim Volk  
Mastermind Venture Partners

Paul Wright  
South Coast Air Quality Management District

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

9:32 a.m.

MR. WARD: Good morning, everybody. I'm Peter Ward; I'm Program Manager with the AB-118 program for the California Energy Commission. Thank you all for braving the storm to get here. I also want to welcome everybody that's on the WebEx today. Thank you for joining us here in the comfort of your own home or your office. I think you probably had a better idea.

I want to thank you all for coming. This is our third of four workshops we're having on the investment plan for AB-118. I'd like to recognize some of the CEC Staff that are with us today here.

Pilar Magaña. And we have Diana Schwyzer, who is the Advisor to Chairman Karen Douglas of the Energy Commission. And we have Rhett deMesa in the front row here. And my colleague, Tim Olson, also in the 118 program, as well. So we're happy to have you all here.

We went -- this is a public process. We're going about taking the investment plan that we've been working on for several months that was published on the 23rd of December for everyone's

1 holiday reading. And we are still taking comments  
2 up to and through these workshops.

3 We're anxious to hear from you as to  
4 whether or not we've made the mark, and we're, I  
5 think, honing in on the development of a program  
6 that's going to be very useful to California and  
7 very timely for the problems that we're having as  
8 a state, and as a nation.

9 I want to thank Matt -- who's not with  
10 us, but Paul Wuebben also is with us. He's with  
11 the South Coast Air Quality Management District.  
12 And I'd like to thank our hosts for having us  
13 here. Really appreciate them offering the  
14 building for us, the room here.

15 And we've enjoyed a long partnership  
16 with the South Coast, and I think that's going to  
17 be going forward. We're looking forward to that,  
18 as we are with the other air districts in the  
19 state. I think we have a lot of very cooperative  
20 efforts and complementary efforts that we will be  
21 pursuing in the future.

22 Just to go over how we'll operate today.  
23 There are agendas out on the table. But just so  
24 you know, the first part of this, probably the  
25 first 45 minutes to an hour will be myself and Tim

1 Olson presenting the latest staff draft investment  
2 plan.

3 And then after that we're having five  
4 different presenters. And at each one of our  
5 workshops we've decided to have kind of a local  
6 theme. Either it's local or it's a different  
7 technology or fuel area.

8 Today we have presentations from Clean  
9 Cities; we have from the Air District; we have  
10 from an electric drive expert and Fuel Cell  
11 Partnership. And Bill Van Amburg from CALSTART,  
12 who pretty much they supersede all of these  
13 different things. And, of course, CALSTART was  
14 very instrumental in helping us get the AB-118  
15 passed through the legislature a year and a half  
16 ago.

17 I just also want to mention that they  
18 will have presentations for 10 or 15 minutes after  
19 Tim and my presentations. We'd like to take any  
20 questions you have of a clarification nature. We  
21 can get into the nuts and bolts of things in the  
22 third hour. I think that might be better if there  
23 are any things that are just not clear in Tim or  
24 my presentations. So in the interests of time we  
25 can get our second round of speakers up and going,



1 as well.

2 We have blue cards that are out on the  
3 table out there if you'd like to make some --  
4 Rhetta has them right here -- if you'd like to  
5 make public comment in that third hour of our  
6 workshop. Please fill one of those out, we'd be  
7 happy to hear from you. We'd like to limit those  
8 to five minutes, if you have a PowerPoint  
9 presentation of five minutes, we can load that  
10 onto the computer, as well.

11 So, let's get started.

12 The program overview is basically the  
13 legislation that was passed and signed by Governor  
14 Schwarzenegger in 2007. And the purpose is to  
15 develop and deploy innovative technologies that  
16 transform California's fuel and vehicle types to  
17 help the state attain climate change policies.

18 It will provide immediate GHG reduction  
19 benefits and is designed to help create the  
20 impetus for long-term investment. The funding for  
21 the program is up to \$120 million per year  
22 authorized through the year 2015.

23 So this is a good long horizon for a  
24 program, seven and a half years, with a very large  
25 amount of money, which we're very excited about.

1           For the first year we have \$75 million  
2           for this year; we're not really in the spending  
3           mode yet. This year we've had regulations and an  
4           investment plan; the advisory committee will go  
5           through that to bring us to this point.

6           So for the first year we will have \$75  
7           million. And for next year it's estimated we will  
8           have approximately \$101 million according to the  
9           early budget projections that we have now.

10          The moneys have all been -- are being  
11          collected. It's just what is going through the  
12          budget process is currently pegged at about \$101  
13          million.

14          Program overview. The framework for  
15          sustainability is going to be one of the key  
16          aspects of this program because we don't want to  
17          go ahead and do the same thing as we've done in  
18          petroleum and other fuels in the past. We want  
19          this not only to be better fuels, cleaner fuels,  
20          lower carbon fuels, and better vehicle  
21          technologies, but how we go about that.

22          As those fuels and vehicle technologies  
23          are developed we want to make sure that they're  
24          done on a much more sustainable basis. That's  
25          going to be kind of a hallmark of this program.

1           So I envision each year, successive  
2       years, we'll be getting projects that are even  
3       better than the prior year. We want to make sure  
4       that those projects that we favor do the absolute  
5       best that we have available to us in California.

6           To decrease pollution on a lifecycle  
7       basis, that is well-to-wheels. And you folks  
8       maybe today with the AB-1007 alternative fuels  
9       plan that we did and adopted jointly with the Air  
10      Resources Board in December of 2007. And that was  
11      largely based on a wells-to-wheels assessment of  
12      GHG and other environmental impacts. We are  
13      continuing that to make sure that we are operating  
14      in the most sustainable manner possible.

15          We'll fund projects that will not  
16      adversely impact natural resources, as well.  
17      That's a very large issue for us, and we want to  
18      make sure that we're doing things in a stable  
19      manner from the start all through the seven years.

20          We want to insure economic development,  
21      education, outreach and workforce training. I  
22      think we're all aware, keenly aware of the  
23      difficulties we're having on a national scale with  
24      the economy. The California economy is also  
25      troubled by that, as well.

1           And I think that's one of the reasons we  
2   need to be much more nimble and flexible with this  
3   program, being able to pick up on other  
4   opportunities. There are maybe some very large  
5   opportunities coming from the federal government  
6   soon. We want to have this program mesh very well  
7   and very easily with the federal program so that  
8   we can actually leverage the large amount of money  
9   that this is with an even larger amount of money  
10   coming from the federal government.

11           We want to attract and retain clean  
12   technology businesses in California. And  
13   California is blessed in this regard. We have  
14   many technology areas and we hope to develop more,  
15   and develop those that exist to a larger degree.

16           We'd like to fund financial incentives  
17   and assist with private investment; encourage  
18   market creation and informed consumer choice. And  
19   this gets down not only with the businesses, but  
20   right down to the consumers.

21           There are choices out there that are not  
22   necessarily -- that consumers are not necessarily  
23   aware of all of those. We'd like to make them  
24   more aware of those and actually develop more of  
25   those so the consumers have a choice in the market

1 for the fuels and the vehicles that they purchase.

2 We want to encourage and leverage the  
3 innovation of California. As I mentioned, we have  
4 led the way in aviation, aerospace, information  
5 technology over the last 50 years. I think this  
6 is a new area that California will rise to the  
7 challenge for.

8 Leveraging our innovation is key. I  
9 think this money can be well spent in leveraging  
10 some of the efforts that are now underway. And we  
11 are also blessed with an abundance of renewable  
12 resources, and I'm calling waste a resource, as  
13 well. And we are, I guess, blessed with a lot of  
14 waste resources, as well, which we hope to take  
15 full advantage of and use in a very positive way.

16 The investment plan was required by the  
17 statute for the Energy Commission to prepare and  
18 adopt an investment plan each year for the  
19 program. Because this year is starting rather  
20 late we are using one investment plan to cover the  
21 first two fiscal years of those two that I  
22 mentioned, the 75 and 101 million will be covered  
23 by this investment plan. This is to determine the  
24 priorities and the opportunities that exist.

25 We'll go through a little bit how we did

1       that a little bit later. We'll describe how the  
2       funding will complement existing and the public/  
3       private investments.

4               The initial investment plan will guide  
5       the funding decisions during the first two years,  
6       as I mentioned. We have convened an advisory  
7       committee and we have met five times with that  
8       committee. Our last meeting was on January 8th,  
9       and unveiled this revised version of the  
10      investment plan.

11             It is available for public review on our  
12      website. And for those of you that are not  
13      familiar with our website, it is at [energy.ca.gov](http://energy.ca.gov).  
14      Under the longer name, which is what the title of  
15      the legislation was, is the alternative and  
16      renewable fuel and vehicle technology program.  
17      So, you can navigate through our website and find  
18      that.

19             There are two parallel functions going  
20      on on our website in this program. One is for the  
21      development of the regulations which we have  
22      drafted and are still receiving comment, and will  
23      be taken up by the Energy Commission on the 25th  
24      of February.

25             And we are having workshops now. We

1       were in Fresno and then San Jose. Today in  
2       Diamond Bar and tomorrow in San Pedro. And each  
3       one of these workshops is slightly different from  
4       the middle section that one hour in between, where  
5       we have different panelists presenting different  
6       topics related to this program.

7               The Transportation Committee is  
8       comprised of Vice Chair Jim Boyd, my former boss;  
9       and the new Chair of the Energy Commission, Karen  
10      Douglas. And that's Diana's boss.

11             I have to say, and I'm very impressed  
12      not only with Karen and having known her for about  
13      a year now, but I don't know anybody, and I mean I  
14      don't know anybody that, in the morning, has a  
15      baby and in the afternoon is named the Chairman of  
16      the California Energy Commission. Now that is a  
17      day that you're going to remember. And I couldn't  
18      be happier for her and for the people of the state  
19      of California, to have a good leader like Karen as  
20      our Chair.

21             The advisory committee, we've taken  
22      their input every step of the way on the  
23      regulations and on the investment plan. And what  
24      you see in the investment plan is an incorporation  
25      of those, as again, just to reminders, the

1 priorities and the opportunities that exist in the  
2 market.

3 Consideration of the investment plan by  
4 the Energy Commission for adoption is targeted for  
5 March, and we are, as I say, gathering comments  
6 from this workshop, and will be coming up with a  
7 committee final draft to be adopted by the Energy  
8 Commission next month.

9 There are many different types of  
10 projects that are in the legislation that we can  
11 fund and are eligible for funding. Alternative  
12 renewable low carbon fuels development and  
13 improvement. Projects that optimize alternative  
14 renewable fuels for engine technologies.  
15 Alternative renewable low carbon fuel production  
16 in California.

17 And projects that decrease the fuels  
18 lifecycle carbon footprint and increase the  
19 sustainability. Alternative renewable fuel  
20 infrastructure fueling stations and equipment.  
21 Improving light-, medium- and heavy-duty vehicle  
22 technologies for better fuel efficiency whether  
23 they're on conventional fuels or alternative  
24 fuels.

25 We will foster buy-down programs,



1 advanced technology warranty or replacement  
2 insurance; development of market niches; supply  
3 chain development; retrofits for medium- and  
4 heavy-duty vehicles; alternative renewable fuel  
5 infrastructure development; workforce training,  
6 which is going to be key, I think, as the economy  
7 needs to respond to the recession that we're in.

8 Education and program promotion and  
9 developing technology centers of excellence.  
10 Analyses to assist in preparing the investment  
11 plan. And I might say, to inform this program  
12 every step of the way.

13 This is a key element of this program,  
14 as I see it. The vision that we'll get into a  
15 little bit later of how we develop the framework  
16 to achieve the maximum GHG reduction can be worked  
17 on further. And we'd like to further populate  
18 that and find what is the best trajectory, not  
19 only to get us from here to 2020, but from 2020 to  
20 2050. And I'll outline those goals a bit later.

21 We've been given a whole host of  
22 different funding mechanisms that we can utilize.  
23 And so this can foster a very creative approach to  
24 this. And I think that's going to be necessary.

25 We want to look under pretty much every

1 rock to see what we can find as far as the  
2 available and creative mechanisms to use. Brands,  
3 contracts, loan guarantees, revolving loans,  
4 consumer rebates, direct fuel subsidies, cofunding  
5 with strategic partners will leverage our funds.

6 And, of course, the one that I like the  
7 best, other mechanisms to be defined. I think  
8 that's going to be the key as we go forward into  
9 somewhat uncharted waters.

10 Funding preferences shall provide  
11 preference to projects that, and this is from the  
12 statute, itself, reduce lifecycle environmental  
13 impacts including air and water pollution.  
14 Decrease lifecycle greenhouse gas emissions by at  
15 least 10 percent.

16 Do not adversely impact the  
17 sustainability of the state's natural resources.  
18 In fact, we'd like to improve upon the existing  
19 status quo. We want to make things more  
20 sustainable than they presently are. And that's a  
21 goal that we have for the program. It's kind of  
22 over-arching all facets of this program, as well.

23 Want to use alternative fuel blends of  
24 at least 20 percent. Use existing or proposed  
25 fueling infrastructure. Provide nonstate matching

1 funds. I think that's going to be very critical  
2 now as we go forward and the federal government is  
3 talking about hundreds of millions of dollars that  
4 could come to this area, and in this particular  
5 area that we're going to be working in with this  
6 program.

7 And we want to drive new technology  
8 advancement. And I can't think of a better place  
9 to do that than California.

10 Staff draft -- we took two basic steps.  
11 And to determine the best method to reduce  
12 greenhouse gas emissions we constructed a feasible  
13 scenario using, as I mentioned earlier, the  
14 alternative fuels plan and a 2050 vision that was  
15 contained in that plan.

16 That outlined the different fuels and  
17 vehicle technologies that could plausibly be  
18 necessary to achieve the reductions we'll need in  
19 2050. Just to restate, the 2020 goal is based on  
20 the AB-32 Global Climate Solutions Act of 2006, by  
21 the former Speaker Fabio Nuñez, and signed by  
22 Governor Schwarzenegger in September of 2006.

23 And 2050 is the Governor's -- relates to  
24 the Governor's executive order, and pretty much a  
25 common understanding that we need to reduce our

1 GHG emissions 80 percent below 1990 levels by the  
2 year 2050. Should have said that the AB-32 goal  
3 is to return to the 1990 levels of GHG by the year  
4 2020. We've already exceeded them. And, as a  
5 matter of fact, last year we even increased them,  
6 even given the understanding that we need to  
7 decrease, we've had a net increase of GHG  
8 emissions in the past year.

9 We worked backwards from the state  
10 alternative fuels plan 2050 vision. Populated the  
11 assumptions with the CALCARS light-duty consumer  
12 preference model that the Energy Commission has.

13 And we've evaluated the vehicle and fuel  
14 efficiencies expected in the year 2050. So, if  
15 you looked at the different projections in the  
16 alternative fuels plan -- I know you all read it -  
17 - the super ultra low, ultra low and low carbon,  
18 project those efficiencies that we will expect  
19 those vehicles to have in year 2050.

20 Many of those don't exist now, but we're  
21 hoping to improve the efficiency of both  
22 conventional and alternative fuels by that time.  
23 And by using lower carbon fuels at that time, as  
24 well, we hope to achieve those reductions.

25 We categorized the fuel technologies as

1 super ultra low carbon, ultra low carbon, low  
2 carbon and additional fuel economy improvements.  
3 Those are basically the bins of the funding that  
4 you've seen in the investment plan.

5 Here's a depiction of the step one  
6 process. It's also in the investment plan, and  
7 I'd like to point out that these are the basic  
8 four bins that I just mentioned.

9 At the top in the green are the advanced  
10 biofuels that will make, we're hoping -- this is  
11 all based on GHG emission reductions over the  
12 period from 2008 to 2050.

13 So you can see by fuels contribution the  
14 next, the blue is fuel economy, the improved fuel  
15 economy for all vehicles regardless of fuel. The  
16 yellow is electric drive and hydrogen projections.  
17 And the bottom, the natural gas, propane,  
18 renewable diesel projections of life as we know it  
19 now.

20 Now, those could change. We understand  
21 that all these fuels are evolving and improving,  
22 as are the vehicle technologies, themselves. So,  
23 we do expect a lot of these different fuels to be  
24 coming from renewable sources where they are not  
25 now, natural gas, hydrogen, propane, electric

1 drive. They're not all as renewable as we'd like  
2 them to be, and we hope that they will be evolving  
3 quickly to that point.

4 As they become more renewable their  
5 carbon footprint goes down, their GHG reduction  
6 potential goes up.

7 The second part of the investment plan  
8 talks about the gap analysis. And that is a  
9 analysis of the funding that exists for these  
10 different categories, fuel categories and  
11 vehicles.

12 And we reviewed the existing public and  
13 private funding for the alternative renewable  
14 fuels. And we determined what funding was  
15 available, therefore what gaps remained. And it's  
16 going to be our job to work with stakeholders and  
17 our partners to find out which of those gaps those  
18 entities can fill.

19 And the gaps that remain after that,  
20 that is where funding from this program can be  
21 applied. We want to make sure we make best use of  
22 the funding that we have. And we want to make  
23 sure that we're not, you know, over-funding some  
24 areas that already have adequate funding.

25 We're determining where the funding is

1 not needed, and basically that identifies those  
2 areas that are ripe for this program and for the  
3 development of partnerships such as I mentioned  
4 with the Air Quality Management Districts, the  
5 Clean Cities Coalitions and other entities that  
6 wish to be partners with us.

7 At this point I'd like to call on my  
8 colleague, Tim Olson. Tim is the specialist in  
9 our program that's been looking at the investment  
10 of our funds into these particular areas. And  
11 he'd like to go through that with you now.

12 Tim.

13 MR. OLSON: Thank you, Peter. So, let's  
14 go back; okay, there we are. I'm not going to  
15 repeat some of the things that Peter said about  
16 each of these categories, but I'm going to use  
17 them as kind of a skeleton to walk through what  
18 we're doing with each fuel and technology. And in  
19 doing that I'm going to be summarizing. Feel free  
20 to ask questions at the end of the day if you want  
21 some clarifications.

22 So, under the super ultra low category  
23 falls the electric drive and the hydrogen fuels  
24 technologies. And for the most part some of those  
25 two items could slip into other categories

1       depending on what their full fuel cycle. The way  
2       we're doing this is looking at the well-to-wheels,  
3       the full fuel cycle.

4               And then that type of analysis  
5       determines where you fall in the super ultra low,  
6       ultra low, and the low carbon. Low carbon still  
7       means you get some net benefit compared to net  
8       gasoline or diesel.

9               For example, if you're using a fuel, a  
10      feedstock that's a -- using hydrogen, for example,  
11      reformulated natural gas you're not necessarily  
12      going to be in the super ultra low category.  
13      You're going to be in a lower class, a lower  
14      level.

15              And if you can create hydrogen out of  
16      biomass then you're probably going to be in that  
17      super ultra low. Time is a factor in all this,  
18      too, and cost, et cetera.

19              So when you look at these categories you  
20      know that there are things that are pretty fluid.  
21      They can shift from one category to another  
22      depending on that full fuel cycle.

23              I'm going to discuss electric drive in a  
24      little detail here, and then go through the  
25      hydrogen, the biofuels, natural gas and propane.



1           What we're proposing to our  
2       Commissioners here, and just to reiterate what  
3       Peter had said and stated. This is still in a  
4       phase of a staff draft staff proposal to our  
5       Commissioners. And still open to some influence  
6       from the advisory committee and parties like  
7       yourselves here.

8           And so when we're talking about this,  
9       we're talking about a staff presentation or staff  
10      proposal that still hasn't been adopted yet by our  
11      full Commission. We're hoping that happens  
12      sometime in March.

13          So what we're proposing on the electric  
14      drive is that in conjunction with the California  
15      Air Resources Board, we're going to conduct a  
16      vehicle rebate program as one of the type of  
17      things we're going to do.

18          And what does that mean? Well, we're  
19      looking at the differential cost between, in this  
20      case, electric drive technology and gasoline and  
21      diesel. And we're subtracting the federal tax  
22      credits or incentives out of that differential.  
23      And then we're looking at what do we want -- how  
24      much of that remaining balance do we want to cover  
25      with our funding.

1           The Air Resources Board has stated  
2       publicly they think that's going to be an average  
3       of about \$5000 per vehicle. We think it's going  
4       to vary depending on the vehicle, the size of the  
5       battery, that type of thing. Just as the size of  
6       the federal incentive depends on the size of the  
7       vehicle, the size of the battery.

8           So, you know, how much money in this?  
9       Well, it's really going to follow what the  
10      production scheme is from the automakers to roll  
11      out their products. The earliest we're hearing  
12      from plug-in hybrid or battery electric is  
13      sometime late 2010.

14           The Energy Commission is interested, I  
15      think the staff is interested in also providing  
16      this type of incentive for retrofits,  
17      refurbishments or upfitting. So the details still  
18      have to be worked out, still have to be approved  
19      by both agencies.

20           We expect to, in the timeframe we're  
21      talking about, which is if we can theoretically  
22      start today, our funding would cover between now  
23      and the end of this fiscal year, June 30, 2009.  
24      And then another year from July 1, 2009 to June  
25      30, 2009 (sic).

1                   So in that timeframe we think we might  
2     be seeing 500 to 1000 of these electric drive  
3     vehicles coming forward and seeking that kind of  
4     rebate.

5                   We also are planning to provide a  
6     similar type of program in conjunction with the  
7     Air Resources Board on the medium-duty, heavy-  
8     duty. And the reason -- I can't give you all the  
9     details of this because we don't -- the Air Board  
10    has to still develop their part of this.

11                  But in essence looks like we're going to  
12    pool our money where it makes sense and provide  
13    similar kind of rebates, buy-down, differential  
14    cost rebates, for vehicles that are ready to be  
15    deployed and go into the marketplace. And right  
16    now that looks like it's a diesel hydraulic  
17    hybrid, or a diesel hybrid type of truck. And  
18    we'd like to see that expanded to several  
19    different classes of vehicles.

20                  The Air Board is proposing to dedicate  
21    somewhere around \$20 million in this category.  
22    We're open to augmenting that depending on the  
23    demand and how many projects can be made  
24    available; how many vehicles are going to be made  
25    available.

1           We also plan to fund, provide cofunding  
2       for vehicle pre-production demonstrations. And we  
3       look at this as funding new engine platforms, new  
4       vehicle configurations. Looking at -- so these  
5       are not going to be deployment vehicles; these are  
6       going to be ones and twos that are really  
7       demonstrations in areas like, market niches like  
8       refuse truck applications, package delivery,  
9       transit, school buses, utility bucket truck. So  
10      these are technologies that are going to be the  
11      next generation hydraulic series hybrid. Possibly  
12      battery electric medium-duty, heavy-duty trucks.  
13      Possibly electrifying accessories; possibly plug-  
14      in hybrid.

15           So, a series of things. Some of them  
16      are going to be a series. Some of them it could  
17      go parallel. And, again, it's meant to be  
18      incentives directly with engine manufacturers and  
19      truck manufacturers.

20           The point of this is we're going to be  
21      looking for technologies that can be available in  
22      a mass market way within three, five, seven years.  
23      But also have some pretty significant greenhouse  
24      gas emission reductions above what we can obtain  
25      today with the good advances we're seeing.

1           Another aspect of electric drive is  
2       we're willing to put money, or proposing to put  
3       money into upgrading some of the existing electric  
4       charge points, somewhere around 3000 candidate  
5       sites in the state.

6           And looking at installing new  
7       infrastructure, maybe up to 200 locations. The  
8       dollar value on this is not significant per site.  
9       And in essence we're looking to build out this in  
10      matching kind of the roll out of the vehicles.

11          Another area of electric charge is  
12      likely to be in our proposal, the nonroad  
13      applications. What we're seeing proposed in ports  
14      of L.A. and Long Beach are some examples. Some  
15      truck refrigeration units switching from diesel to  
16      electric systems. Augmenting and increasing the  
17      truck stop electrification type of application.

18          And other things in ports like harbor  
19      craft going from diesel to some kind of hybrid  
20      diesel. In essence, looking for efficiency  
21      improvements in the 30 percent range. In some  
22      cases 70 percent range, like with the harbor  
23      craft. We see anything that's in an idling mode a  
24      large part of the duty cycle is a candidate for  
25      this kind of work.

1                   On the hydrogen proposals we're  
2       proposing mostly to fund infrastructure  
3       development from a couple different standpoints.  
4       One, infrastructure that will support the roll out  
5       of the OEM automaker vehicles over time.

6                   And also we'd like to couple that where  
7       it makes sense, if it makes sense, with some  
8       multiple use sites.

9                   So what do we mean by that? Well,  
10      looking at where there are strategic locations  
11      where automobile customers are located in  
12      conjunction with transit systems, maybe in  
13      conjunction with distribution centers. Looking at  
14      a different kind of range of infrastructure, not  
15      only the high-cost retail type of operations, but  
16      also some of these portable, skid-mounted what we  
17      call the two-trailer.

18                  And improve for various sites so that  
19      they're acceptable to customers, but also useful  
20      to get more through-put. And that's the whole  
21      point of the multiple use, is maximize getting  
22      many users to help drive down that cost and  
23      advance this technology, try to accelerate the  
24      introduction of this technology.

25                  In addition to that, we hope to focus

1 some of the work on what we're calling the  
2 renewable sources of hydrogen production. As some  
3 of you know there's a state law requiring that 33  
4 percent of any project that the state government  
5 invest money in in hydrogen need to show that  
6 there's a third of the fuel is produced from  
7 renewable sources. And that's one of the kind of  
8 priority areas we'd like to see.

9 We may also, we haven't really put any  
10 money in the hydrogen category, but we may be open  
11 to projects that are advancing some of the  
12 technology or transition from. We've heard some  
13 examples from hydrogen ICE shifting into fuel  
14 cells, and using hythane fuel or HCNG. So we're  
15 looking for transition types of projects, too, and  
16 how some of the other fuels or technologies can  
17 match up with hydrogen.

18 The ultra low carbon area, as Peter  
19 noted, is primarily biofuels. Again, it kind of  
20 depends on the feedstock, on the full fuel cycle  
21 pathway. And whether you're using a neat fuel or  
22 a blended fuel. But for the most part, they're  
23 going to fall under this category.

24 What we're proposing to do in -- there  
25 are two primaries, ethanol, ethanol fuel and

1 vehicles and biodiesel, renewable diesel.

2 With ethanol we are proposing to --  
3 nothing in the area of vehicle rebates. The  
4 existing -- if you're not aware, about 400,000  
5 flexible fuel vehicles operate in California  
6 today. The differential cost for automakers is  
7 less than \$100 per vehicle compared to a gasoline  
8 version. We don't see a need for an incentive in  
9 that category.

10 What we do see a need for is investment  
11 in infrastructure. And infrastructure that is  
12 needed for the neat fuel, the E-85 blend, or E-85  
13 ethanol. And so that requires new pumps, new  
14 facilities. And we're willing to cofund, we're  
15 proposing to cofund several of these different  
16 projects.

17 When you look across the state what are  
18 we trying to accomplish eventually and get  
19 biofuels in the market where you can use these  
20 higher percent biofuel options? Well, if it  
21 requires a new fueling infrastructure we don't  
22 think we need to match the 10,000 gasoline  
23 stations that are out there. But probably closer  
24 to 2000.

25 And I think we are proposing anywhere



1 from 100 to 200 cost-share stations in this round  
2 of funding. And we're seeing some of that being  
3 developed now. There's companies that are  
4 interested in this type of business, and there's  
5 more than one business model we think would work.

6 In addition to that, we are looking at  
7 across-the-board, not only with ethanol but for  
8 biodiesel, renewable diesel, trying to encourage  
9 fuel production. Now, this is a difficult thing  
10 for us because most of the projects are easily  
11 \$40-, \$50-million, \$100 million, \$200 million  
12 projects.

13 And we're looking at well, how do we  
14 take our smaller sums of money, and how much money  
15 would we dedicate for a project like this. Well,  
16 it's hard to tell, but I can't see it being any  
17 more than 3 million, 5 million, maybe 10 million  
18 at the high side.

19 And what would that do anything to help  
20 in a project? Well, it may or it may not. Kind  
21 of depends on the stage you're in. And that's  
22 what we wanted to kind of get across, is let's  
23 break these projects into stages.

24 And what we're finding with investment,  
25 private investment in this area is that the

1 investors are looking at it the same way. That  
2 they're not going to make decisions on \$200  
3 million production plants until they see some  
4 pretty good due diligence steps.

5 And what is that? Well, it's a pretty  
6 good feasibility type of analysis that shows the  
7 technical, economic and now probably even more  
8 importantly than in the past, the environmental  
9 footprint analysis of a project that uses one or  
10 more different kind of biofuel feedstocks.

11 And why is that happening? A lot of  
12 concerns over where the feedstocks are coming  
13 from; what they compete with. Whether they  
14 compete with a food product. Whether there's  
15 enough of the feedstock material even to begin  
16 with. What's the competition for that. Lots of  
17 questions about biofuel feedstocks.

18 And so we think this is a good candidate  
19 area to do some cofunding of feasibility studies.  
20 What does that give us? Some of these steps may  
21 take a year to do. And what it gives us is a  
22 really good feel for is this project worth any  
23 more of our effort, any more of our investment.

24 Or even if it isn't, does it make it  
25 investor-ready for private investment.

1           So this is one area that will not cost  
2     \$10-, \$15-, \$40-, \$100 million. But could be in  
3     the \$1 million, \$2 million; and some of them are  
4     in the \$500,000 range and under. And so we think  
5     that's a good step that we'd like to see.

6           The other stages of biofuel production  
7     we want to go through this kind of very careful,  
8     cautious approach; make very deliberate choices on  
9     how we spend money.

10          What are the other ways we -- things we  
11     could do is also provide the cash as a form of  
12     leverage to create a loan pool. And then you can  
13     start getting into the \$40-, \$50-, \$100 million  
14     range. And we're open to those ideas. We want to  
15     hear those kind of ideas.

16          I guess one other comment about the fuel  
17     production plants. If we are to fulfill our  
18     bioenergy action plan goal, which is I think 40  
19     percent of our ethanol use or biofuel use produced  
20     instate. The whole purpose of that energy action  
21     plan, bioenergy action plan, is get more local  
22     production. Stop relying on imports.

23          And if we're going to meet the goals  
24     laid out in the bioenergy action plan fully by the  
25     year 2020, then to 2050, we're going to need in

1 the range of 30 to 60 of these projects located in  
2 California. And then for whatever reason they're  
3 not accepted or just there's not enough resource,  
4 or can't build them, then to still meet those  
5 goals we're going to be relying on imports.

6 The low carbon category covers, for the  
7 most part, natural gas and propane. What we are  
8 suggesting in this category is some pretty  
9 significant investment. Primarily because there  
10 are projects and vehicles and technology ready to  
11 go. And there's some commercial applications that  
12 have shown success. And we've got about a 15-  
13 month period to conduct our work, to at least  
14 cover the money.

15 Again, what we're proposing here is some  
16 rebates for light-duty vehicles. There's only one  
17 automaker that makes a dedicated natural gas  
18 vehicle. It'll be a candidate for these buy-down  
19 rebates.

20 In addition we are suggesting the same  
21 kind of program for some of the natural gas,  
22 medium-duty, heavy-duty trucks. And we know that  
23 there's several candidates here in southern  
24 California where this tends to be a preferred  
25 technology. Other programs, other things in

1 place, either here or through the South Coast Air  
2 Quality Management District, or in conjunction  
3 with the ports of L.A. and Long Beach. And there  
4 are quite a few other entities that I'm not going  
5 to -- I'm probably going to upset people because I  
6 didn't mention everybody.

7 But we see a definite area here where we  
8 can see near-term greenhouse gas emission  
9 reductions in the earliest timeframes possible.

10 One of the drawbacks is for natural gas  
11 and propane, it's not the high, supra ultra low  
12 greenhouse gas emission reduction, but it's got  
13 some sizeable potential. And has the potential,  
14 as a cross-over, to some of the other fuels like I  
15 mentioned before, the hythane, HCNG. In fact,  
16 that would be one area that we'd want to explore  
17 in the fuel production is trying to encourage more  
18 renewable sources of biomethane, sources of  
19 natural gas production, blending with hydrogen,  
20 doing some demos.

21 In addition, we'd like to -- we're  
22 proposing spending some money on infrastructure,  
23 but not a significant amount of money for a couple  
24 of reasons. One, where we want to put the money  
25 is upgrading existing facilities that have been

1 out there 10, 15 years, that are some in  
2 degradation. We think this is a worthwhile --  
3 where fleets are already dedicated to use of  
4 natural gas, it's an upgrade of the system.

5 Another type of application, another  
6 objective is to increase the through-put in the  
7 existing stations. There's maybe close to 150,  
8 200 natural gas stations out there now. Got to  
9 maximize some of that through-put before we see  
10 any significant new money.

11 But then again, from a strategic  
12 standpoint we think that there may be a need for  
13 10, 15, 20 new stations depending on the growth  
14 and the use.

15 There's a theme you're seeing here.  
16 We're trying to make this as much performance-  
17 based as possible. But still maximize the  
18 greenhouse gas emission reductions as early as  
19 possible.

20 I think that -- in addition, let me just  
21 say in the vehicle demonstration area that we'd  
22 like to, I mentioned it as part of the electric  
23 drive. We'd like to do this same kind of  
24 objective on natural gas. Like to get another at  
25 least one more, maybe couple more, engine platform

1 out there that can be applied across the board,  
2 different vehicles classes, and medium-duty and  
3 heavy-duty.

4 With propane, the expectation is that we  
5 will spend -- proposed to spend some money on  
6 mostly vehicle refurbishment, rebates or upgrades.  
7 Don't see a significant draw here, but we know  
8 that there are vehicles out there. And we think  
9 that they are a contributor to this objective of  
10 ours.

11 One other category is improved, what we  
12 call improved vehicle efficiency. A little bit of  
13 cross-over into some of the fuel areas. But we're  
14 proposing to set aside about \$22 million for some  
15 vehicle, total vehicle efficiency improvements;  
16 component part improvements; new engines;  
17 propulsion systems.

18 Lots of different things that will  
19 improve the vehicle efficiency. And we're willing  
20 to put some money into this. We suspect it's  
21 going to be primarily not likely to be significant  
22 deployment money in the first couple of years, but  
23 more kind of demonstration type of projects.

24 Peter mentioned we have this other  
25 category we call nonGHG reduction categories. He

1 referred to some of the work already, workforce  
2 training, education, outreach.

3 We're discussing contracts with the  
4 state of California employment agencies; with the  
5 community college foundations; and there are other  
6 entities throughout the state that are interested.

7 You could have existing programs who  
8 want to build this, want to create curriculums.  
9 And as this industry grows, we think this is a  
10 significant area. And we feel starting early is  
11 one of the best things that could happen with  
12 this.

13 In addition to that we've got this  
14 category we refer to as sustainability. I kind of  
15 touched on it briefly on the biofuel discussion.  
16 And so what is that? Well, we're finding that we  
17 need to trace the origin of, and the pathway of  
18 pretty much any of these fuels to keep a sharp eye  
19 on what the total well-to-wheel, or full fuel  
20 cycle impact is.

21 And some of that could come out of  
22 individual project feasibility studies. But as we  
23 start looking at industry sectors and types of  
24 applications, we feel that this area deserves some  
25 special treatment.



1           Maybe it's going to lead to creating  
2 protocols. In essence it's some more kind of  
3 proactive approach from our part to define what  
4 the pathway is, and what the impacts are to any of  
5 these fuels. And whether they're produced here in  
6 California or imported from other places.

7           We also are proposing to set aside some  
8 money to cofund some standard development  
9 certification performance test protocol. Again,  
10 we know that any project, any vehicle involved in,  
11 we want to make sure that it's fulfilling the Air  
12 Resources Board certification test. And sometimes  
13 that can be expensive. And we're proposing to be,  
14 on a selective basis, partners with companies that  
15 want to pursue this.

16           And particularly to enhance the early  
17 adoption of new vehicles, new configurations. And  
18 so that's one thing.

19           We're also looking at the same thing  
20 with fuels, hydrogen fuels and biodiesel. Getting  
21 a standard there that everybody agrees upon and  
22 can help ease and overcome some of the uncertainty  
23 in the marketplace.

24           And as Peter also noted, we're likely to  
25 spend money on some things that are going to help

1       us in conducting, supporting the operation of the  
2       program. Some of that could be some trouble-  
3       shooting of projects; some of it could be  
4       financial analysis.

5               And from one standpoint what we do know  
6       is between the Air Board and the Energy Commission  
7       we'll have about \$1.5 billion over seven years to  
8       stimulate a market that will require \$100 billion  
9       investment.

10              So we know we're going to be in this  
11       business of trying to facilitate finding money and  
12       building partnership. And that money could come  
13       from federal agencies or local agencies, but a  
14       large part of it has to come from the private  
15       sector. And it's a challenge.

16              One other category that we're looking  
17       at, and it's allowed in law, it's explicitly  
18       allowed in law, is trying to couple some of these  
19       project and vehicle types of incentives with  
20       manufacturing incentives, meaning this:

21              That we're open to providing incentives  
22       to locate manufacturing plants here that will go  
23       into some kind of deployment strategy. And that  
24       could be a total system. It could be a component  
25       part.

1           What do we mean by incentives? Well, it  
2       could be how the money -- likely to be our money  
3       combined with other sources of incentives that are  
4       out there, like the Governor and the State  
5       Treasurer have a sales tax exemption right now on  
6       vehicle -- equipment used in manufacturing plants  
7       for zero emission vehicles. They're interested in  
8       trying to expand that.

9           Well, that, coupled with enterprise  
10      zones, and maybe some custom design things we can  
11      do with our incentives, the whole point is to  
12      locate people here; try to encourage job and tax  
13      revenue growth. And that's what the purpose of  
14      this.

15           In some cases, you should notice here,  
16      we have references to loans, loan guarantees. It  
17      goes back to this kind of comment of the closer  
18      you are to commercialization, maybe you're suited  
19      for a loan, and a bigger chunk of money, as  
20      opposed to a cash grant of \$1 million. We can  
21      take that \$1 million and create a 10-to-1 or 18-  
22      to-1 net pool.

23           And we're open, we're interested in your  
24      ideas on that. Whether we initiate it, or whether  
25      you have an idea on how to do that. And you'll

1       see that some of these manufacturing incentives  
2       might be that type of thing.

3               This is a summary of the funding  
4       allocation. And you can see that the low carbon  
5       category has a significant amount of funding  
6       dedicated for it. These other areas all fall  
7       within what we think are practical, what we see as  
8       practical responses from the marketplace. And  
9       cofunding, providing cofunding.

10              We're also flexible on this allocation,  
11       open to comments. And I think our Commissioners  
12       are, too. They're interested in the feedback on  
13       these workshops, whether some of this money should  
14       shift.

15              Also, I forgot one other area in the  
16       ultra low carbon category. And that was the  
17       biodiesel renewable diesel. And I just wanted to  
18       touch on it briefly here, if I can find it.

19              This last bullet on this slide here.  
20       There what we're finding is that there are a lot  
21       of independent companies, small- and medium-sized  
22       companies in this field, which we're calling the  
23       blending -- storage and blending of biofuels.

24              And the point of this is it looks like  
25       we're going to, just like with ethanol, going

1 through a low blend effort, trying to lead to a  
2 neat fuel.

3 And that there is a definite need for  
4 logistical northern California and southern  
5 California locations of these facilities if we  
6 want to maximize the use of biodiesel and  
7 renewable diesel. And that funding is needed for  
8 those blending terminals.

9 These are not likely to be major oil  
10 companies involved in this. These are small- and  
11 mid-sized companies. And the capital just isn't  
12 there, but the need is there if we're going to go  
13 to any kind of significant market penetration with  
14 these kind of fuels, these renewable diesel,  
15 biodiesel fuels, we're going to need that funding.  
16 So that was the one thing I forgot there.

17 I'm going to go back -- and then I guess  
18 I'll turn it back over to Peter. And then we'll  
19 go to the other speakers.

20 MR. WARD: Thanks, Tim. Also I just  
21 want to mention that those of you that are on the  
22 phone, we understand you're having difficulty  
23 hearing. And we've been trying to address that  
24 and fix that. The levels that we have here are up  
25 as high as we can get them. So we are trying our

1 best to make that a better experience for you on  
2 the phone.

3 So I'd like to finish up our  
4 presentations so we can go to the panel. So I  
5 just want to mention, as we are collecting  
6 comments on this investment plan, these are some  
7 that we received from our advisory committee.

8 They were the emphasis should be given  
9 on the 2050 goals rather than the 2020. More  
10 dollars should be directed toward the super ultra  
11 low carbon category.

12 There was mixed feedback on the benefit  
13 of funding retrofit and conversion projects.  
14 Stronger support for EV fueling infrastructure and  
15 distribution level infrastructure.

16 More focus should be on economic  
17 development potential out of the program.  
18 Something I think we all agree with. Need a  
19 better understanding of how sustainability  
20 criteria will be applied.

21 And more support is needed for high-risk  
22 technologies. Need to develop more compelling  
23 argument for the program.

24 Cycle returns from investments back into  
25 the program to stimulate additional funding and

1 growth, which at some times is problematic with a  
2 program that is seven years long, in getting that  
3 funding back reinvested.

4 Need for a stronger link between K-  
5 through-12 education and workforce development.

6 Just to bring everybody up to date on  
7 our schedule. As I mentioned, we're in the phase  
8 of the public workshops right now. Third of four.  
9 Tomorrow will be at San Pedro near the port of Los  
10 Angeles. And we are hoping that the revised  
11 investment plan will be -- actually the revised  
12 investment plan will be released, and hopefully  
13 the Commission will be adopting it next month in  
14 the spring of 2009. I'm saying spring, not a  
15 month.

16 We're hoping to release solicitations  
17 that we're on a parallel path preparing right now.  
18 And in late 2009, that's our target effective date  
19 for the regulations. That's an important aspect  
20 of this program. And the funding from this  
21 program cannot go out until those regulations are  
22 enacted by the Secretary of State.

23 As I mentioned earlier, the Commission  
24 is taking those up at our business meeting of the  
25 25th of this month. And so I think we're on track

1       for late in May for the funding to be released.  
2       But we're hoping to have solicitations out,  
3       perhaps proposals in and approved so that funding  
4       can actually start flowing soon after, or days  
5       after the enactment by the Secretary of State.

6               Here is our contact information.

7               I'd like to move on to our panel unless  
8       anyone in the audience or on the phone has  
9       clarification questions for what we presented.

10              Sir, can -- I think you're going to need  
11      to come to the microphone and identify yourself  
12      for the record.

13              MR. RELIS: Paul Relis, CR&R. Are we  
14      going to hold off on questions until the end, or -  
15      - because some subjects came up and I have a few  
16      thoughts on or questions, really.

17              MR. WARD: What we'd like to do if we  
18      can, get all the comments relating to what we  
19      presented, if there are questions of a  
20      clarification nature. We'd like to handle those  
21      now.

22              MR. RELIS: Okay.

23              MR. WARD: For our general discussion  
24      for later we're allowing time, we will be here as  
25      long as it takes for all the public and



1 stakeholder comments.

2 MR. RELIS: Then I think mine fall in  
3 the clarification. Can I run back and get my  
4 notes?

5 (Pause.)

6 MR. RELIS: These are related to Tim's  
7 comments. One was this notion of breaking  
8 projects into stages. And the term investor ready  
9 versus some other categories. Now, that's one  
10 clarification.

11 And the second is in relation to the  
12 proposed fuel production side, a notion of 30 to  
13 60 projects in California. What would those be?  
14 What's your thinking there? That's the extent of  
15 what I --

16 MR. OLSON: Okay. So, your first  
17 question on the kind of the different stages.  
18 What I was trying to do is to point out that in  
19 response to some of the questions we heard at our  
20 January 8th workshop, if these bioproduction  
21 projects take two to three years, this is the  
22 question, two to three years to get constructed,  
23 why don't we just wait. Why not -- why put money  
24 in the first year if you're not going to see  
25 results for three years.

1                   And when you actually look at the  
2     project, you know, what is the project. It's a  
3     series of stages of which one has a well-defined  
4     feasibility step that quite often could take a  
5     year. And the end result is when you go through  
6     that step and you've got permits, you're ready to  
7     go to construction.

8                   And so what I'm -- and also, from our  
9     view, is probably the most risky step in the  
10    process because questions about it, you're not  
11    going to get all your money until you have shown  
12    something.

13                  And what we're saying is from a funding  
14    standpoint, from a temporal standpoint, break the  
15    project into stages. Think about that from the  
16    standpoint of -- and it's not only to you, but  
17    also for us to look at as do we want to fund these  
18    projects in maybe stages as opposed to making a  
19    commitment upfront on something that's not going  
20    to be constructed for three years, or operating in  
21    three years.

22                  That was the whole point of that. As  
23    opposed to or compared to a vehicle rebate, which  
24    could happen in a matter of weeks or months. That  
25    was the point of that distinction.

1                   And the other question, I forget. What  
2                   was your other question?

3                   MR. RELIS: You mentioned this idea of  
4                   fuel production being a desired outcome of the  
5                   program and --

6                   MR. OLSON: Okay.

7                   MR. RELIS: -- you mentioned 30 to 60  
8                   projects. What --

9                   MR. OLSON: Yeah, --

10                  MR. RELIS: -- we understand that to be.

11                  MR. OLSON: So that was a rough average  
12                  of, if you looked at a combination of ethanol  
13                  production plants and sizeable biodiesel and  
14                  renewable diesel in the range of 30 million  
15                  gallons capacity per year or two -- I'm sorry, 30  
16                  million gallons a year capacity for some of the  
17                  biodiesel, maybe larger than that, 60 million, and  
18                  ethanol production plants, 50 million to 100  
19                  million gallons per year capacity.

20                  So when you start adding that up then  
21                  you're in the range of meeting our need, of  
22                  meeting what we think will be a market growth in  
23                  biofuel need. The 30 plants by 2020, and 60 by  
24                  2050.

25                  MR. RELIS: Thank you.

1                   MR. OLSON: And that matches the  
2                   bioenergy action plan if you're trying to compare  
3                   what's the capacity need by the energy action  
4                   plan, that's what that is.

5                   MR. WARD: Any other clarification  
6                   questions?

7                   MR. BURNETT: I have a question.

8                   MR. WARD: Yes, sir, please come up.

9                   MR. BURNETT: My name is Herbert  
10                  Burnett. I'm an alternate fuel consultant. And I  
11                  have a couple of questions.

12                 One related to the funding aspect in the  
13                 sense that many of my customers have a great deal  
14                 of difficulty in funding projects because the  
15                 basis for your funding and the AQMD has been  
16                 reimbursed at the completion.

17                 Is there going to be any consideration  
18                 given to some partial funding, maybe at 50  
19                 percent? Or are you going to continue the  
20                 reimbursement at completion? So that was one of  
21                 the things I hoped you'd look at.

22                 The second item that I want to talk  
23                 about was since about 1991 we, in California,  
24                 invested about a billion dollars in CNG, hydrogen  
25                 and LNG. And I think it's a real key for the

1 success of the program.

2 I did hear you mention that you're going  
3 to focus on some existing infrastructure, so maybe  
4 improving existing infrastructure.

5 But I would hope you would also look at  
6 considering and giving a high priority to  
7 facilities, clean fuel facilities that already are  
8 operating in the sense of adding hydrogen to CNG  
9 station, adding E-85 to existing gasoline  
10 stations.

11 And the reason being is that many of  
12 these existing retail facilities are already in  
13 business, and they've already spent about 50  
14 percent of their funding for development. Because  
15 on a capital project, a clean fuel project, to get  
16 these grass roots you're going to spend about half  
17 of it on the roads, paving, lights and the like.

18 So, I hope that you would consider higher  
19 priorities for existing facilities.

20 Now, having said that, the way to do  
21 that I would hope that you would do a quick audit  
22 in your first phase to audit what we have right  
23 now. Because much of that needs some reliability  
24 improvement; some needs some modernization.

25 For example, 18 of the 20 hydrogen

1 stations right now are 350 -- and we've already  
2 said that 700 -- was going to go long term.

3 So these are some of the things I would  
4 hope that you would clarify in your plan.

5 MR. WARD: Thank you.

6 MR. BURNETT: Thank you for allowing me  
7 to speak.

8 MR. WARD: Any other questions of a  
9 clarification nature about what we've presented so  
10 far?

11 MR. PROVENZANO: My name is James  
12 Provenzano; I'm with Clean Air Now. I just wanted  
13 to get a rundown on the timetable for the release  
14 of the solicitation.

15 MR. WARD: I believe I said spring 2009.  
16 We will have probably multiple solicitations in  
17 different areas.

18 MR. PROVENZANO: Okay. And do you know  
19 what portion of those will be outright grants  
20 versus loans and so forth?

21 MR. WARD: We really haven't determined  
22 that yet.

23 MR. PROVENZANO: Okay.

24 MR. WARD: But stay tuned. And for  
25 those who are on the phone and in the audience

1 here, our website, you can submit comments to the  
2 docket. I should have mentioned this, the formal  
3 way to provide input to our process, to our  
4 solicitation to what we're doing, and also sign up  
5 for the listserve so that we notify you of any  
6 events that come up, such as the one we're in  
7 today.

8 MR. PROVENZANO: Okay, thank you.

9 MR. WARD: Thank you. Okay.

10 MS. MAGAYA: This is from Kevin Harris.  
11 He wants to know: I am curious to know if funding  
12 is available for zero emission bus projects. I  
13 had heard before that AB-118 funds would not be  
14 available for such projects since CARB already has  
15 regulations in place to induce zero emission bus  
16 purchases.

17 MR. WARD: We are under a regulation not  
18 to fund any compliance or -- party under a rule or  
19 a mandate or ordinance. However, that is  
20 typically the manufacturer that is under that  
21 requirement, not the purchaser of that. So there  
22 may be some opportunities for that.

23 I know the Air Resources Board air  
24 quality improvement program is also looking at  
25 electric drive technology, as well.

1           They basically are working more in the  
2   vehicle area, and we are working in the  
3   infrastructure area, more readily, I should say.  
4   But I think it is not off the table as far as  
5   consideration in this program.

6           MS. MAGAYA: One more question from  
7   Steven Bruchner: Can methanol be considered as a  
8   low or ultra low or super ultra low kind of fuel?

9           MR. WARD: Methanol? Like d,j... vu all  
10   over again.

11           (Laughter.)

12           MR. WARD: Had an experience with  
13   methanol many years ago. I don't know that we've  
14   run full fuel cycle on methanol?

15           MR. OLSON: Yes, we'd done some early,  
16   some initial work on methanol. And there are  
17   other factors that are kind of likely to prevent  
18   it from being a market option.

19           MR. WARD: If it could be renewably  
20   produced, of course that would lower its carbon  
21   footprint obviously. But it is not one of the  
22   ones that we've typically considered up till now.  
23   But, as I say, I don't know that it's off the  
24   table if it can be renewably sourced.

25           I think it can be an acceptable and very



1 low carbon technology --

2 Any other questions of a clarification  
3 nature?

4 MR. VAN BOGART: Jon Van Bogart with  
5 Clean Fuel USA. I had a question about the RD&D  
6 section. Do you have any idea of the cost share  
7 level of funding for some of those projects for  
8 the light-duty vehicle and also the medium- and  
9 heavy-duty vehicles?

10 MR. WARD: They haven't established any  
11 of the details on that. We'd like to hear the  
12 suggestions. That's part of the reason we're out  
13 at these workshops is to hear what are the needs  
14 out there for the RD&D and for the other aspects  
15 of the alternative fuels and vehicles, to find out  
16 what's the bogey, if you will, on that.

17 So, we would like to hear from you. If  
18 you have an idea of what level of funding would be  
19 most helpful in that area, that would be good to  
20 hear.

21 I'm sure the Energy Commission's Public  
22 Interest Energy Research program may be of help  
23 here, too. If they have a transportation element  
24 of that that's been operating for two or three  
25 years now, and they may have available funding for

1       that type of RD&D, as well.

2               No other questions of a clarification  
3       nature. I'd like to move on now to the second  
4       part of our program today, and that is our  
5       stakeholder presentations. I'd like to call on my  
6       friend from a long time, actually back into the  
7       methanol days, Paul Wuebben from the South Coast  
8       Air Quality Management District, who will fill you  
9       up with an hour worth of information in 10 or 15  
10      minutes. Thank you.

11              MR. WUEBBEN: Thanks, Peter. First I  
12      want to thank Tim and Peter and all the CEC Staff  
13      for convening the meeting here, because it's  
14      certainly a very appropriate venue because of the  
15      vulnerability in southern California to the  
16      convergence of climate issues, energy and air  
17      quality.

18              As you probably know, 25 percent of the  
19      nation's ozone exposure occurs here. Fifty  
20      percent of our particulate exposure to the PM10  
21      standard occurs here.

22              And our latest MATS, multiple air toxic  
23      study, has identified that 85 percent of our  
24      airborne toxic compounds are associated either  
25      with gasoline or diesel exhaust, the predominant

1 of that being diesel.

2 If I can go to my presentation, I just -  
3 - okay, thanks. Maybe just as a bit of  
4 background, the South Coast certainly considers it  
5 crucial that we're moving to these low carbon  
6 technologies.

7 And generally what we're here to do is  
8 to explain some of the specific project proposals  
9 that we'd like to bring forward. And also be  
10 making some introductory comments there, too.

11 Can we get this up?

12 (Pause.)

13 MR. WUEBBEN: Can appreciate the  
14 logistic challenges of a meeting like this.

15 (Pause.)

16 MR. WUEBBEN: -- at least like the  
17 picture on the first slide, a before and after.

18 (Pause.)

19 MR. WUEBBEN: Great. Okay, next slide  
20 if you can. Yes.

21 First we just want to mention that we  
22 fully endorse the draft IP certainly as an  
23 important starting point and its focus on low  
24 carbon technologies.

25 And we just did want to say in a kind of

1 generically that should these ultra low carbon  
2 technologies be commercialized and available  
3 within several years, that the funding  
4 distribution to be reevaluated going forward.

5 Next slide. Some other kind of  
6 prefatory comments on the investment plan. That  
7 it's crucial, we think, to recognize that there  
8 are multiple benefits to greenhouse gas reduction,  
9 and petroleum displacement options, and criteria  
10 emission reductions, and toxic reductions, the  
11 strategies that do all of those together.

12 Another kind of general point is that  
13 there are important project areas and  
14 opportunities such as gaseous fuels, where  
15 building a natural gas, building on that expertise  
16 adds a literacy for bringing other gaseous fuels  
17 forward.

18 And so there is, I think, a very natural  
19 linkage between natural gas and hydrogen, for  
20 example. And there are other literacies that need  
21 to bridge from existing alternatives forward.

22 The third is that we should all  
23 recognize that the infrastructure piece of this is  
24 probably the hardest part to rationalize  
25 economically at the station level to retail level,

1 particularly given the incumbent strength, or the  
2 strength of incumbent technologies, and cost  
3 structure.

4 And then finally that we think that  
5 looking at this plan in a balanced fashion is very  
6 important because it wouldn't really be helpful,  
7 we think, to be too formulaic in our allocations.  
8 That each pathway needs careful feeding, as I  
9 would call it.

10 And, in effect, I think we're all  
11 recognizing that in important ways they're all on,  
12 in some sense, life support based on the current  
13 low oil price environment, coupled with this  
14 remarkable liquidity crisis we're struggling  
15 through.

16 Next slide. There are some important  
17 short-term opportunities which we think grow out  
18 of our current recessionary environment. Starting  
19 with what's on the front page of the Wall Street  
20 Journal today. The OEMs struggling with perhaps  
21 bankruptcy, and hopefully not. But there are  
22 certain synergies there to link those companies  
23 with their PHEV development efforts and other  
24 electric drive technologies.

25 School districts are another in this air

1 basin, and certainly throughout the state, need  
2 the help particularly with the current budget  
3 crisis. We know in California that the clean tech  
4 investor arena needs additional leveraging.

5 If you can go back? No? Okay. I guess  
6 we're just having IT problems, sorry. I know  
7 she's struggling mightily.

8 But also there is areas in the low  
9 carbon fuel standard which depend crucially on  
10 biofuel development. And also the moratorium  
11 currently on Prop B funding has placed a much  
12 bigger reliance on the -- is immediate roll out of  
13 AB-118. Our own agency, just last December, just  
14 two months ago, agreed to put some additional  
15 money in to fill the gap of the nonexistence, or  
16 the current moratorium on Prop B.

17 Next slide, please. So, with that, just  
18 to kind of note some pragmatic realities. The  
19 ranking system, we think, is certainly a good step  
20 forward. We also recognize it should evolve over  
21 time. That there's some real difficulties or  
22 complexities in these well-to-wheel distinctions  
23 as you start to -- these fine nuance to pathways.

24 The enabling technologies, all of them  
25 have complex pathways. And so I guess really the

1 message here is that we think that a strong sense  
2 of flexibility should be reflected in looking at  
3 the low carbon, the ultra low carbon super ULC and  
4 FEI categories. That one may morph into the other  
5 as they evolve.

6 Next slide. So now I want to spend the  
7 balance talking about our specific projects. And  
8 just go on to the next one. We think that  
9 overall, looking at our air quality and clean  
10 fuels program priorities, that our technology  
11 priorities are very much aligned. They're fully  
12 aligned, really, with the AB-118 investment plan.  
13 I won't go into the details here, but we'll have  
14 it for the record.

15 But just so you get a flavor for this,  
16 we're certainly recognizing that in natural gas  
17 there is an important role for financial  
18 incentives, for the entire vehicle segments.

19 For advanced engine development, for new  
20 and retrofitting and reliability updating for  
21 infrastructure. In the biofuels area we recognize  
22 that there is a need for additional instate  
23 production and a transition to these more  
24 sustainable fuels and expanding E-85 stations.

25 With electric vehicles we're very

1 excited and hopeful that additional  
2 demonstrations, and even including in that  
3 upfitting and retrofitting, as well as developing  
4 infrastructure.

5 With hydrogen we think that an emphasis  
6 is appropriate on high-volume stations where  
7 you've got mixed use fueling stations. Along with  
8 linking that with renewable hydrogen production.

9 And then, of course, vehicle and engine  
10 efficiency, crucial importance of that through all  
11 of these vehicle segments. And the importance of  
12 the medium- and heavy-duty hydraulics and electric  
13 type hybridization.

14 And then also in the areas of workforce  
15 and sustainability review, standards and  
16 certification, all of that is very important.

17 Next slide, please. From a funding  
18 level standpoint we're recommending that in the  
19 low carbon technology category there be roughly \$4  
20 million that we would be able to contribute into  
21 cost sharing along with perhaps up to 8 million or  
22 more from the AB-118 fund to look at a variety of  
23 technologies from actual heavy-duty incentives,  
24 school bus incentives, conversion and OEM  
25 introduction of additional engine families. And



1       also infrastructure.

2               For the super ultra low category, for  
3       the area in the electric component of that, we see  
4       there are specific projects that we could bring  
5       forward that would amount to about \$9 million in  
6       the HMD funding if they were leveraged with  
7       perhaps 19 million from the AB-118 side.

8               Those would cover a wide range of plug-  
9       in and electric vehicle opportunities. And I'll  
10      describe some of that in future slides.

11              And then secondly in the hydrogen arena,  
12      we would recommend \$4 million worth of various  
13      projects with 8 million from the CEC side. And in  
14      terms of vehicle efficiency, about a \$2 million  
15      and \$4 million split.

16              Next slide. Just to review quickly some  
17      specific examples. And I highlight the word  
18      example, because I'm sure that there'll be many  
19      others that are very important in this area.

20              But we think that 3 million from our  
21      side could be used to develop additional engine  
22      optimization. That currently the Cummins ISOG is  
23      the only natural gas engine available in the  
24      heavy-duty segment. And we're hopeful to increase  
25      that. Very pleased, obviously, in the light-duty

1 segment that natural gas is still there. And we'd  
2 like to see that increase. So we think that  
3 there's projects there.

4 Next slide, please. In the heavy duty  
5 truck arena we think that it's appropriate to look  
6 at replacing, at a minimum, the pre-2003 diesel  
7 trucks with the LNG trucks. Perhaps those could  
8 be applied, particularly in the port area. And  
9 even in nonport applications. We think you could  
10 replace 200 older trucks at the cost of about \$18  
11 million.

12 Next slide, please. In the hybrid  
13 hydraulic demonstration arena, this is just one  
14 type of hybrid technology. And we give a lot of  
15 credit to the hybrid to truck user forum efforts.  
16 That there are medium- and heavy-duty segments  
17 that are very important here. And there are  
18 opportunities there to conduct application studies  
19 to find which types of specific niches one would  
20 design certain architectures for.

21 Perhaps even do an evaluation of how you  
22 can extend this technology into light-duty  
23 segment. Also look at development and  
24 demonstration of parallel systems, as well as  
25 series-type hydraulic systems.

1                   And then those that have even tried to  
2       couple this with advanced engine technologies like  
3       the homogeneous charge, SCI type engines, perhaps  
4       with series style architecture.

5                   Next slide, please. In the transit bus  
6       arena we have certainly been very involved with  
7       fuel cell buses for nearly a decade now. We think  
8       there are new opportunities still in emerging,  
9       particularly integrating and expanding the  
10      architecture is where -- is looked to couple those  
11      with battery technology for charging capability of  
12      essentially plug-in fuel cell buses, or hydrogen  
13      and natural gas blend type configurations. And  
14      that, we think, could be done in the range of \$1  
15      to \$4 million, looking at two different  
16      technologies.

17                  Next slide. In the school bus arena we  
18      would be looking at areas of perhaps up to \$14  
19      million where one would spend 140,000 per bus for  
20      natural gas application. I think it's very  
21      germane here to note that we're building on  
22      existing investments. So we've spent substantial  
23      funds, \$120 million to date, on 4000 different  
24      engine applications because our school bus  
25      projects are certainly in that range.

1               Next slide, please. And in turning to  
2       infrastructure, both for natural gas and hydrogen,  
3       we think that there is roughly about \$15 million  
4       worth of projects of which we would be investing  
5       maybe a third of that amount. We'd be looking at  
6       perhaps up to seven additional natural gas  
7       stations with industry cost share. Looking at  
8       also blended opportunities with hydrogen.

9               Some waste-to-biomethane demonstrations;  
10      refuse-derived methane. And those that try to  
11      utilize a co-operating environment, hydrogen-to-  
12      energy, some kind of integrated combined cycle  
13      demonstration. And even some higher pressure  
14      residential refueling that's been developed so  
15      far.

16              Next slide, please. So I think, as you  
17      step back, we see that there's tremendous  
18      opportunities for continuing the long history of  
19      cooperation and partnership between the AQMD and  
20      the Energy Commission. That partnership, I think,  
21      can be grounded in the future with a tremendous  
22      amount of capability and expertise that we've  
23      built up at this agency over the years.

24              Just this year we've got \$56 million  
25      targeted through incentive funds, through the SB-

1 1107 and AB-923. We've got efforts and expertise  
2 and program solicitation at large scale project  
3 administration, best practices for a wide variety  
4 of technologies.

5 We understand how to leverage those  
6 funds, synergize technologies, and to expedite  
7 outreach. And in the role of training, and  
8 efficient contracting. So I think all of that  
9 should give a lot of confidence going forward that  
10 we'll have a lot of efficiencies.

11 But we're trying to work with you to get  
12 all of these funds out in the most efficient and  
13 effective manner possible.

14 So, with that, thanks for your time.

15 (Applause.)

16 MR. WARD: Next I'd like to call on a  
17 good friend, JoAnn Armenta, who is the local Clean  
18 Cities Coordinator. And she is also housed in the  
19 building here, and helped us get copies of the  
20 agenda. Known her for a good quite awhile. She's  
21 very enthusiastic.

22 Mention that we are anticipating working  
23 strongly with the Clean Cities Coalitions in the  
24 state. They are the human capital on the ground  
25 that's been working in alternative fuels for more

1       than 15 years now. And we're looking forward to  
2       the future in a partnership way, as well.

3               JoAnn.

4               MS. ARMENTA: Hello, everybody. How you  
5       doing today? Thank you for being here. I see a  
6       lot of my stakeholders, partners.

7               Having difficulty -- well, basically  
8       I'll describe who I am and what I do. JoAnn  
9       Armenta, Clean Cities Coordinator for the Southern  
10      California Association of Governments. We cover  
11      six counties, 187 cities just within my own  
12      coalition.

13              We report to the Department of Energy,  
14      energy efficiency and renewable energy agency out  
15      of the Department of Energy. It's a 15-year  
16      program to do research and development in the  
17      deployment of alternative fuels, and to work with  
18      municipalities and industries to help to support  
19      the deployment through infrastructure and  
20      development through the alternative fuels networks  
21      and industry partners.

22              I have been involved as the coordinator  
23      since 2003. I was employed through SCAG back in  
24      1995, metropolitan planning organization here for  
25      the southern California region.

1           In recent years I've been assigned to  
2       committees, planning committees and advisory  
3       committees to the Department of Energy for the  
4       deployment and the development of future programs  
5       that support the outreach and education efforts of  
6       the coordinators.

7           Many coordinators over the past eight  
8       years have been forced to become sustainable.  
9       Unfortunately, the Clean Cities program has been  
10      seriously underfunded to the point that many of us  
11      have begun our own nonprofit organizations to sort  
12      of fill the void when it comes to financially  
13      being viable, in order to continue our outreach  
14      and education efforts.

15          Okay. Are many of you familiar with the  
16      Clean Cities program? I have some stakeholders  
17      here, some cities and some partners. And what  
18      we've done in the past over the last 15 years is  
19      develop those partnerships. Those strategic  
20      partnerships in education, industry and  
21      government.

22          What we do is we're grassroots  
23      organizations, we're national. We have over 90  
24      clean city coordinators serving the nation.

25          Two weeks ago we were called to D.C. to

1 speak to the Department of Labor and work with  
2 Climate Communities. Climate Communities is an  
3 organization out of D.C., who within the stimulus  
4 package, submitted -- or it was actually more, but  
5 it was finally decided \$350 million will go to  
6 continue to support the Clean Cities efforts, the  
7 programs and their partnership efforts.

8 So, like many of you here, looking at  
9 how we can reduce our greenhouse gases and employ  
10 people in these industries developed in accredited  
11 and certificated courses.

12 You want my computer?

13 (Laughter.)

14 MS. ARMENTA: That's okay. Okay, so  
15 going to D.C. a couple weeks ago what we were  
16 asked to do is to identify how we could work with  
17 veterans. And the number of veterans that are  
18 coming home, returning vets, need to be employed.

19 Looking at the soon-to-be-released  
20 57,000 incarcerated here in the state of  
21 California. Also working with at-risk groups,  
22 youths primarily.

23 So then we're really looking at how we  
24 could develop programs and curriculum to address  
25 the needs to develop the under-privileged, the



1 under-represented and the under-served  
2 populations. Being that so much money is going to  
3 the stimulus package for just that, workforce  
4 development and environmental education.

5 Perhaps I'll proceed without slides.  
6 The rationale for redefining how we can serve is  
7 through the -- because of the economic recession  
8 and environmental degradation and social  
9 degeneration. 9.3 unemployed California just as  
10 of January is the rate. 40,000 returning vets.  
11 Disenfranchised group. At-risk youth, which are  
12 future offenders, some youths that become  
13 institutionalized and will be there and  
14 marginalized continually. Then we have the  
15 57,000, as I quoted, soon-to-be-released.

16 The funding in particular that the  
17 Department of Labor is identifying is for these  
18 particular groups, 750 million for job training;  
19 500 million for green jobs.

20 Thirty million will be -- okay, well  
21 there is the first slide.

22 (Laughter.)

23 MS. ARMENTA: And Purpose Focused was  
24 developed; it's a nonprofit organization. We can  
25 go back to the first page. Purpose Focused was

1 developed to do education, environmental education  
2 and workforce development, primarily for the  
3 advanced transportation technologies and the  
4 renewable energy sectors.

5 Working with industry, working with  
6 educators, and working with government to fulfill  
7 the gaps that have been identified, as I just  
8 alluded to.

9 Again, through the stimulus package we  
10 know that those dollars, 700 million -- oh, you  
11 can go to the next one. I've already covered that  
12 slide. That's a good stopping point, thank you.

13 \$700 million for the Department of Labor  
14 for job training, and for specifically green jobs.  
15 \$900 million in the state grants to prepare the  
16 California at-risk youth for high-wage jobs in the  
17 growing industries. And 30 million in 103 grants  
18 to provide approximately 19,000 veterans with job  
19 training.

20 Next slide, please. In addition to the  
21 California Energy Commission \$120 million that's  
22 been set aside, my category falls under the nonGHG  
23 category, looking to also fund weatherization  
24 programs through the Department of Energy. And  
25 also 3.1 billion -- this is through the stimulus

1 package -- 3.1 billion for SET grants, which is  
2 something that we've done in the past with the  
3 assistance of the California Energy Commission, to  
4 assist them in reviewing them and identifying  
5 projects that fit our regional needs.

6 Also looking at 300 million going to the  
7 Clean Cities programs to advance again alternative  
8 fuels, alternative fuel vehicle and programs  
9 similar to that.

10 400 million for electric vehicles and  
11 other transportation electrification projects. So  
12 300 million for the USEPA grants to reduce diesel  
13 emissions through retrofits and auto reduction  
14 technologies.

15 So, Purpose Focused's mission -- next  
16 slide, please -- is to educate for change, empower  
17 people to positively affect the present and future  
18 economic, environmental and social living  
19 conditions; provide access to environmental  
20 education workforce development programs targeting  
21 green jobs.

22 Develop sustainable communities through  
23 vision, people and purpose. And instill purpose-  
24 focused living and working principles; implement  
25 practices and policies to reduce our individual

1 and collective carbon footprint at home and our  
2 work environments.

3 Next slide, please. Our goal is to  
4 build capacities by providing personal and  
5 professional development programs; offer  
6 accredited and certificated programs; provide  
7 scholarship, internships and apprenticeships.  
8 Provide mentoring and career path counseling. And  
9 provide job placement services.

10 Next, please. Green job career  
11 opportunities are in the following areas that will  
12 be identified and further developed. And that  
13 would be in energy efficiency audits;  
14 deconstruction and reconstruction; LEED certified  
15 construction; advanced transportation  
16 technologies, retrofits, uplifts.

17 Alternative fuel infrastructure  
18 maintenance; alternative fuel vehicles  
19 certificated technician training in heavy-duty,  
20 medium-, light-duty onroad and offroad  
21 technologies.

22 Next slide, please. Other areas of  
23 training would fall into categories of vehicle  
24 technologies, alternative fuel technologies,  
25 building technologies, industrial technologies,

1 solar, wind and hydropower generation, energy  
2 efficiency technologies, renewable technologies  
3 and geothermal and biomass biofuels.

4 Next, please. Environmental education,  
5 sustainable development. Environmental education  
6 programs would include ecosystems, earth science,  
7 health science, water quality and conservation,  
8 air quality, land use and extraction to disposal.

9 Sustainable responsibility, green supply  
10 chain; the cost of real-time consumer demands.  
11 And then the association of all of the greenhouse  
12 gas emissions related to not taking into  
13 consideration sustainable development.

14 Recycle, renew, reuse, revise, rethink,  
15 repair. These are conservation methods and  
16 science strategies to mitigate and develop the  
17 sustainable future environmentally, economically,  
18 and socially.

19 Next slide, please. Our target audience  
20 will be for education and outreach, would be the  
21 K-8, the K-9 to 12. Specific programs that have  
22 been developed through some of our partnerships  
23 like the Clean Air Now challenge program and other  
24 entities that have facilitated and produced  
25 programs for teaching teachers science programs

1       that they can implement in their programming.

2               Community colleges, like the ATT&E,  
3       advanced transportation technologies and energy.  
4       Community colleges are our partnerships. Other  
5       alternative learning centers, environmental  
6       learning centers that have been identified up and  
7       down the state.

8               LEED-certified buildings and  
9       contractors. These, the universities,  
10      municipalities, we would be outreaching and  
11      educating industry leaders and education partners  
12      as well as the municipalities, the at-risk group  
13      and the incarcerated.

14              All of these populations will be  
15      targeted in one specific area or multiple specific  
16      areas to train the trainers and teach the teachers  
17      so that we can maximize our outreach efforts in  
18      terms of education and job developments.

19              Once identified, these attendees to  
20      these particular programs will then be put through  
21      programs that have been identified as certified  
22      and accredited programming in the advanced  
23      transportation technologies, renewable energies,  
24      and in the life science, earth science, ecoscience  
25      programs through colleges and universities, as

1 well as developing capacities of teachers and  
2 industry leaders as education partners.

3 Next slide, please. The accountability  
4 and transparency of our programs would be to  
5 develop and implement local energy conservation  
6 plans required under the block grants so that we  
7 are developing these programs very concisely so  
8 that we can report back.

9 So if we're outreaching to  
10 municipalities we want to be able to demonstrate  
11 to them how they can reduce their greenhouse gases  
12 and measure them so that they can demonstrate  
13 reductions in their emissions and/or their  
14 purchasing and/or conservation policies.

15 Implement best practices that produce  
16 concrete results in terms of energy saved,  
17 emissions reduced and jobs created. Tracking and  
18 measuring and verifying the progresses.

19 Assess multiple sources of federal,  
20 state and private funding for scholarships meant  
21 to implement local clean energy and climate plans  
22 that produce emission reductions.

23 Building capacities through  
24 collaboration. This is something that President  
25 Obama overly has stressed that it's the time to

1 collaborate, not to compete. And with the new  
2 vision to create and not to destroy our  
3 environment, to preserve our environment, and to  
4 create capacities and develop people this is the  
5 time to begin to collaborate.

6 Through the Clean Cities Coalition,  
7 that's been its primary mission, is to collaborate  
8 again with educators and industry partners, as  
9 well as government.

10 Within our outreach efforts that we've  
11 identified for the AB-118 plan we have already  
12 identified other coordinators and coalitions  
13 within the state. Starting with the SCAG region,  
14 covering L.A., Long Beach, the Coachella Valley,  
15 San Joaquin Valley and Silicon Valley.

16 These particular coordinators -- next,  
17 please -- will have the roles and responsibilities  
18 to plan and organize education outreach events  
19 with other regional Clean City coordinators. Host  
20 a minimum of four outreach events within the  
21 designated regions. And follow through with the  
22 applicants, providing career path counseling and  
23 job placement guidance.

24 And, then, of course, track and report  
25 out the progress.



1           Next, please. Outreach partners, again  
2     identifying the advanced transportation and energy  
3     technologies centers in the regions. So there we  
4     have listed the community colleges already  
5     operating in this vein to support education,  
6     outreach and certificated and accredited  
7     programmings and curriculum.

8           In addition to project we also will be  
9     identifying universities like UCI and others that  
10    have schools of sustainability or programs for  
11    sustainability. Moving those interested into  
12    higher education working in these particular areas  
13    of the earth science, ecosciences and air quality  
14    and land use, all of those areas.

15          Next, please. Other partners are  
16    workforce development partners, workforce  
17    investment boards and community Clean Cities  
18    stakeholders, employment security agencies,  
19    utilities, industry, green businesses, community  
20    agencies and transportation foundations.

21          There is a gentleman in the room today  
22    who will be speaking to the California Energy  
23    Commission tomorrow at the port, Robert Mejia.  
24    Robert Mejia recently created a document that  
25    defines green jobs. We presented that a couple

1 weeks ago in D.C. to the Department of Labor. And  
2 they are very interested in further developing and  
3 supporting our pilot programs here in the state of  
4 California.

5 So, working together with the workforce  
6 investment programs and coalition -- their  
7 particular coalition partners, we are  
8 strategically identifying green employers, green  
9 employee certification and accredited curriculum  
10 that will be recognized by all of the agencies  
11 here and stakeholders who have an interest in  
12 providing those programs.

13 They are also strategically located up  
14 and down the state. So, again, developing those  
15 partnerships, those outreach efforts are very  
16 strategically identified in our efforts.

17 And next, please. The next steps would  
18 be for us to identify and apply for funding  
19 sources. Identify and procure partnership  
20 agreements for advancing shared values and goals.  
21 Support each others' efforts to identify  
22 accredited and certificated courses.

23 Identify and build database for green  
24 job employers. Partnership leveraging to maximize  
25 limited resources. And create a model for

1 alternative learning centers.

2 Create network for duplicating efforts  
3 in other regions in order to maximize our outreach  
4 efforts. And to build a healthier environment and  
5 more vibrant economy.

6 Next, please. So, again, doing this  
7 together. Building capacities to collaboration is  
8 our mission.

9 Thank you. That's it.

10 (Applause.)

11 MR. WARD: Our next presenter is Bill  
12 Van Amburg. Bill has to leave right after his  
13 presentation. That he's not avoiding questions,  
14 he tells me.

15 (Laughter.)

16 MR. WARD: But he will be accessible.  
17 Bill is Senior Vice President at CALSTART. He's  
18 also an Emmy-winning journalist of Science and  
19 Technology in this area. So, please welcome Bill.  
20 Thank you.

21 MR. VAN AMBURG: He always has to talk  
22 about my past life, but that's okay. I'll try to  
23 be brief, get us maybe back on track.

24 Very quickly, what I want to do is give  
25 kind of a brief overview of where we see

1       tremendous leverage with the AB-118 funds. And  
2       we're very proud and very supportive of what staff  
3       has done. I think the Energy Commission Staff has  
4       done a fantastic job in trying to lay out a really  
5       good structure and rubric for how to use these  
6       funds to really push forward what we need in  
7       California, both for job creation, as well as  
8       carbon petroleum reduction on a real fast  
9       timeline.

10               So, without waiting for the slides, just  
11       really quickly for those who don't know CALSTART,  
12       we are a 501(c)(3). We're an advanced  
13       transportation technologies consortium based here  
14       in California since 1992.

15               And our focus has really been to drive  
16       forward this industry. And that's why we think  
17       it's so important what AB-118 can allow us to do,  
18       both in terms of job and industry creation, as  
19       well as the reductions that we need to get to.

20               What we think is important is one of our  
21       mantras that you really need to focus very much on  
22       spreading a portfolio approach. There is no  
23       silver bullet. We're even struggling with silver  
24       buckshot these days to really figure out, maybe  
25       it's bronze buckshot that we're looking at.

1           Because we really need to have a suite  
2   of technologies and fuels that are moving forward.  
3   And if you would go ahead and jump a couple slides  
4   forward -- or not. I know we've got --  
5   technology's great when it works, as we always  
6   joke.

7           But we really need to balance an  
8   approach now of emission reduction, carbon  
9   reductions and energy security. We have to go for  
10  things that move us in the right direction for all  
11  three, not just in one.

12          Go another slide. Another slide. I  
13  know it takes time on the WebEx. Another slide.  
14  And one more past that then.

15          So we've tried to focus our efforts --  
16  if we go one more after that -- on really kind of  
17  the three legs of the stool, if you will, to push  
18  forward what's needed, which is cleaner and more  
19  efficient vehicles and the technologies for them.

20          Cleaner and lower carbon fuels and the  
21  infrastructure for them. And then really trying  
22  to find out different ways of using vehicles,  
23  moving people around, different modes of mobility  
24  that maybe don't really on single passenger cars  
25  for everything.

1                   So, next slide. Now, I think it's  
2                   really important as we're looking at the suite of  
3                   investments that have been laid out by the Energy  
4                   Commission Staff, that we do keep our eye on the  
5                   nearer term price.

6                   We have to start turning the boat. And  
7                   the pace of increase in climate change gases is  
8                   even faster than the experts have predicted. This  
9                   came out of the Washington Post this weekend. So  
10                  we certainly applaud the focus on getting things  
11                  that we can do now on the road, but making sure we  
12                  have a good suite of investments in the things  
13                  that need to come next, and building on those  
14                  technologies to build the bridge forward.

15                  Next slide. We also need to build on  
16                  what the federal government is doing. And JoAnn  
17                  talked about it. There is almost an embarrassment  
18                  of riches if we can leverage it correctly.

19                  Certainly we count more than a million-  
20                  two in transportation technology funds that could  
21                  come through EPA, DOE and other sources. Some are  
22                  demonstration funds, some for implementation. We  
23                  really want to encourage the state, South Coast,  
24                  the region and others to partner together to draw  
25                  more of these funds to the needs that California

1 has.

2 Next slide. So our observations really  
3 on AB-118 would be first of all, the staff has  
4 done an outstanding job in laying out a smart  
5 rubric.

6 But as I heard Paul Wuebbens say, and we  
7 fully agree with it, with South Coast's view, you  
8 don't want to lock yourself into absolutes in your  
9 funding categories.

10 And I think what we'd like to see is  
11 focus on, in the first couple of years, timely  
12 implementation. We need to really start to get  
13 some near-term successes and start to move, if you  
14 will, the needle on climate change. A balanced  
15 approach, near-, medium- and long-term, and across  
16 a suite of technologies and fuels is smart. And I  
17 see that in the portfolio.

18 Encourage innovation and keep yourself  
19 flexible. Now what we mean by that is don't lock  
20 into categories that you have to absolutely fund  
21 "X" amount of dollars in category B, if you get a  
22 lot of good projects in another category where you  
23 can make some real breakthroughs happen.

24 So we would really encourage CEC Staff,  
25 to hold onto your flexibility as you balance this

1 with your partners at CARB. I think you have the  
2 opportunity, particularly with some of the  
3 incentive funds coming down the pike, to really  
4 move the ball in a big way.

5 Now, what I would like to just very  
6 quickly skim over is just some of the leverage we  
7 also see in terms of things that are already  
8 underway, that California's funds can now further  
9 build on and push farther down the road.

10 And some of these are things that we're  
11 familiar with at CALSTART because they're programs  
12 that we operate. So in the next slide, just  
13 really going to click through these quickly, but  
14 we do have the hybrid truck users forum, HTUF  
15 program, that we've operated nationally with our  
16 partners, the U.S. Army, Department of Energy, the  
17 Hewlett Foundation.

18 We have really been quite proud of the  
19 fact -- next slide -- that hybrids have now moved  
20 into early production. But one of the reasons I  
21 show this slide is we need to keep our eye on the  
22 idea that we can't not only only invest in one  
23 thing, but we have to invest across a continuum of  
24 moving technology from R&D or development, into  
25 the marketplace, buy-down incentives.



1           And where we've fallen down in the past,  
2   both in the state and the federal level, is we  
3   only put money into certain of those categories  
4   and maybe only certain fuels or technologies. We  
5   really do need to take a longer term approach and  
6   a portfolio approach.

7           But now that these technologies are  
8   moving to market they continue to need help to  
9   move to market with buy-down funds, but they now  
10   need the next generation of technologies to be  
11   funded on the R&D side. So you build on that  
12   initial platform that comes down the pike. And  
13   this is true of all technologies and fuels.

14          Next slide. We think this is certainly  
15   good for California; it's one of those things, and  
16   there are many of them that have been mentioned  
17   already here today, that starts to address all  
18   three of the issues we have to tackle, climate,  
19   emissions and energy security. And moves the ball  
20   for all three.

21          Next slide. And just some pictures.  
22   This is some of the breakthroughs we've seen in  
23   terms of the platforms of some of the early  
24   investments. We're seeing hybrid technologies  
25   spread into other platform sizes.

1               Next slide. We're seeing the movement  
2     in tractors, including class 8. Next slide. And  
3     certainly one of the things I'll talk about  
4     tomorrow at the port is some of the opportunities  
5     for these vehicles to move into drayage and heavy  
6     regional applications.

7               And the next step we want to go with  
8     that, if you go to the next slide, is really to  
9     start looking at all fuel and biofuel hybrids, as  
10    well. This also is coming, where we're seeing  
11    electrification starting to drive other components  
12    on the truck, further reducing fuel use and  
13    emissions.

14              Next slide. But this is the area both  
15    where deployment is important as well as this  
16    investment in the area that's circled, which are  
17    some of the new technologies that we now need to  
18    build on top of all the truck platforms and  
19    vehicle platforms to allow a start/stop, engine-  
20    off, slight movement forward, lighter weight  
21    materials. Just the suite of technologies for  
22    greater efficiency.

23              Next slide. We're also doing work in  
24    hydrogen and fuel cell, as well as now more and  
25    more looking at the blending of hydrogen with

1 natural gas and other fuels, which looks very  
2 promising.

3 This work we've been doing on a national  
4 level with transit bus platforms because they're  
5 very promising for first use.

6 Next slide. We're looking right now at  
7 a partnership with the southern California transit  
8 agencies to look at both fuel cell, HCNG and other  
9 technologies that can really move the ball to  
10 lower carbon transit and zero and near-to-zero  
11 transit.

12 Next slide. And heading towards much  
13 greater efficiencies. This is a national study we  
14 did for the Federal Transit Administration of  
15 where we need to be when it comes to heavy  
16 vehicles. We really need to start looking at  
17 doubling and tripling efficiencies of our  
18 platforms. State funds could be used to help do  
19 that.

20 Also getting out the fuels. We've been  
21 active on a DOE program, for instance, with E-85.  
22 But all of the fuels that can start to be used as  
23 the vehicles are phased out, need to have  
24 additional infrastructure phased out for them.

25 Next slide. And vehicles. We've been

1 looking at how do you really drive up the demand,  
2 as we've done in the HTUF program, for people to  
3 aggregate purchases and get more alt fuel vehicles  
4 on the road to match with the infrastructure  
5 that's there. So we're working on a program to do  
6 that with light-duty natural gas, light and  
7 medium.

8 So to take the kind of that look at what  
9 we've been involved in and roll it back up now to  
10 look at how does that coincide. What makes sense  
11 now with this structure, this very smart structure  
12 the CEC Staff has put together.

13 We certainly see that there is an  
14 opportunity within their rubric for hybrid and  
15 high-efficiency trucks, both working with CARB on  
16 implementation and deployment, as well as  
17 investing in the next phase of efficient  
18 technologies and fuel blends with them.

19 Zero and near-to-zero emission  
20 technology for low carbon buses. Certainly high  
21 efficiency natural gas engines in vehicles is a  
22 really promising and important next step area.  
23 Especially as you can blend a biomethane and  
24 hydrogen into that fuel down the road.

25 Wasted fuel demonstrations. As I

1 mentioned, low carbon fuel retail stations, very  
2 important. And to match those with vehicles as  
3 they start to roll out.

4 And then assistance, I think, to help  
5 the manufacturers and suppliers actually get their  
6 vehicles and systems quantified and verified in a  
7 timely way. This has really been a holdup to new  
8 technology moving forward in the past. I think  
9 the state could play a tremendous role in speeding  
10 up that process now.

11 And one last thought to throw in.  
12 Certainly, Paul mentioned school buses. I think  
13 an ultra low carbon fuel bus -- school bus area,  
14 there's also some tremendous opportunities for the  
15 state to leverage funds, both their funds and the  
16 federal funds, to cause implementation to happen.

17 So that would be kind of our  
18 observations of how the state can actually take  
19 what is already in play and really move it the  
20 next notch.

21 I'll have to, myself, leave, but Mike  
22 Ippoliti from CALSTART is here and happy to answer  
23 questions later if there are any.

24 Thank you.

25 (Applause.)

1                   MR. WARD: Our next presenter is Chelsea  
2                   Sexton. She is with the Lightning Rod Foundation.  
3                   And there's probably a really good story behind  
4                   that. You may be familiar with Chelsea, she was  
5                   very instrumental in the movie "Who Killed the  
6                   Electric Car." And -- co-producer, is that right?  
7                   But she was very instrumental in that, and the  
8                   whole story.

9                   She's going to be speaking to us about  
10                  the roll out of electric vehicles and the  
11                  technology of that.

12                 Please welcome Chelsea.

13                 MS. SEXTON: Well, the good news is I  
14                 have no PowerPoint.

15                 (Laughter.)

16                 MS. SEXTON: Although realizing that  
17                 means I have to be up there and thinking that's  
18                 probably a mistake. This is what it's like to be  
19                 on this side of the podium, given that  
20                 aforementioned little movie, I'm still not  
21                 accustomed to it.

22                 I was asked to talk a little bit about  
23                 the state of electric cars and plug-in hybrids and  
24                 what's coming to the market. And how this piece  
25                 of policy can be kind of instrumental in helping

1       that along.

2               So, the state is that the cars are  
3       coming. That's really, you know, a little bit  
4       like Paul Revere, "the cars are coming." But  
5       other major automaker just about is working on  
6       some sort of plug-in car.

7               And so far they're the only programs  
8       that are not really subject to being cut based on  
9       the current financial situation.

10              So, you know, we realize that they're  
11       coming. In fact, a lot of them are already  
12       starting to kind of hit the road a little bit in  
13       pilots and those sort of things. We have Tesla  
14       putting cars on the road. We have BMW putting  
15       cars on the road, with any luck, within the next  
16       couple of months.

17              And so that also means that some of the  
18       challenges that are on the table are already  
19       having to be answered in some form or another.

20              And, you know, the good news is that  
21       it's consumer demand driven. You know, as a  
22       grassroots girl, that makes me really happy. But  
23       it also means that the consumers are long out in  
24       front of both the industry and especially out in  
25       front of policy.

1                   And so what that means in terms of a lot  
2                   of the policy and process questions is we're not  
3                   ready for these cars to be coming. And yet we're  
4                   thrilled that they are.

5                   So, with that in mind, I'm going to make  
6                   a few comments about how this piece of policy is  
7                   instrumental. You know, because we know the  
8                   consumers are sort of demanding these vehicles.  
9                   And it's going to happen no matter what, this  
10                  isn't necessary to make the cars happen.

11                  But where policy can really be  
12                  instrumental is in timing, in sooner rather than  
13                  later. And in sort of how many, how soon, how  
14                  much. You know, uptake speed, that kind of thing.

15                  So I have a few comments that are not  
16                  nearly as wonky as sort of funding driven, and  
17                  will not necessarily be unique to electric drive.  
18                  I think they probably share some common ground  
19                  with some of the other fuels. But basically a  
20                  little food for thought as we refine this plan and  
21                  sort of get it ready for adoption.

22                  The first is that I think there are a  
23                  couple of parties that are really being under-  
24                  utilized. The first is the veterans. You know,  
25                  we kind of enjoy the fact that we have been there



1 and done this a little bit in the past. And have  
2 skinned a whole lot of knees doing it.

3 And so those of us that are too stubborn  
4 to leave this little industry are also really kind  
5 of excited about the idea of people not skinning  
6 those same knees all over again.

7 So, that said, I'm not sure that they  
8 have been engaged enough in this process. They're  
9 not necessarily the folks that are applying for  
10 funding. They're not people who necessarily want  
11 to be on the advisory committee. And they're  
12 certainly not going to be the people that will  
13 always show up to do their three minutes in a  
14 public forum. These are long, informed  
15 discussions that need to be had.

16 Same thing with the actual constituents.  
17 You know, California's home to the two biggest  
18 consumer groups in electric drive. Plug-In  
19 America and CALCARS. I'm not sure that either one  
20 has been deeply engaged.

21 We also have the largest group of former  
22 and current EV drivers. We have a built-in focus  
23 group in this state, and they're not being used.  
24 It is the strangest thing. Kind of like little  
25 human Cliff Notes walking around that we could be

1 taking advantage of.

2 And, yeah, I mean a lot of the reason  
3 that particularly the consumers get dismissed,  
4 the current drivers, because everyone goes, oh,  
5 they're early adopters. Yes, they are.

6 But given that we will be production  
7 limited for several years to come, it is the early  
8 adopters that are going to take up the first  
9 several years of production for these  
10 technologies, mine and many of yours.

11 And these guys are deeply tolerant of  
12 early issues. They are -- they so much want to be  
13 a part of something that they're willing to  
14 contribute massive amounts of their own time and  
15 energy. And these are people that produced their  
16 own commercials for the cars they thought weren't  
17 being advertised enough.

18 And wouldn't call roadside assistance  
19 when their cars broke down because they wanted to  
20 spare electric drive from the visual of being on  
21 the back of a tow truck. Use these guys for all  
22 they're worth, my goodness.

23 But the other thing that ends up  
24 happening is they're great incubators for near-  
25 term technology, for low-hanging fruit. There's

1 the discussion about conversions and what role  
2 that they should play.

3 You know, the stimulus package just set  
4 a really interesting, and I think meaningful,  
5 precedent by incentivizing plug-in hybrid  
6 conversions. Those that are safe, that are crash  
7 tested, that are emission certified. But making  
8 the way for the sort of low-hanging technology  
9 fruit to be adopted in a limited way to see how it  
10 happens and to prep the market for actual OEM  
11 cars.

12 And with that sends that meaning is that  
13 the early adopters become the investors; they  
14 become part of the consumer education process.  
15 And it takes a little bit of the weight off of the  
16 agencies and the other stakeholders to do it.

17 One of the lessons that we learned with  
18 all these different consumers over the last 20  
19 years or so, is that you have to balance sort of  
20 the virgin input, as it were, with the experienced  
21 input. You know, you want to talk to the new  
22 consumers, you want to talk to the old consumers.  
23 And you want to sort of balance the two.

24 One of the interesting things that we  
25 learned is that what people think they want before

1       they try it is not necessarily what they want.

2       Oddly enough, we found that the most popular  
3       battery on the EB-1 program was lead acid.

4                You know, there's lots of talk about  
5       lithium and have to have the longest range, and  
6       that just was not our experience. There are  
7       people who want that. There are people who want a  
8       Tesla. There are also people who will be totally  
9       happy with a 100-mile car that has a smaller, and  
10      therefore cheaper, battery pack.

11             So, you know, I see a lot of weight  
12      placed on the more academic studies with new  
13      consumers, which is important to realize what  
14      issues we have to cross in the consumer education  
15      front, but also to be balanced with the people  
16      that have actually been using the technology.

17             Where consumers are actually really  
18      really good, I think, for all of the technologies,  
19      actually, in the infrastructure space. We spent a  
20      lot of years rolling out electric charging  
21      stations. A lot of them are still out there.

22             And a lot of it was trial and error. I  
23      mean we learned by doing, where it was useful to  
24      put the stations; where was it was not so much.  
25      We learned through experience that it's actually

1 less about the speed of charging and more about  
2 the ubiquity of it. People don't need to be able  
3 to do it in five minutes; they just want to know  
4 it's there if they need it.

5 So some of those sorts of things help  
6 inform these newer discussions about level three  
7 charging and battery swapping, and you know, 350  
8 versus 700 bar, and all of these other things are  
9 not necessarily what we think are the ideal.

10 And, you know, that really ended up  
11 cautioning us against assuming what people want on  
12 their behalf. And it seems to happen a lot,  
13 especially with industry and policymakers. We  
14 kind of go, this is what the consumer wants.

15 I don't know, I think that's a little  
16 arrogant to say, personally. But we do it all the  
17 time. So I think that putting a variety of things  
18 out there, let the consumers choose and parse that  
19 is going to be key to the success of all of this.

20 Another interesting area that we found  
21 really needed to be focused on in infrastructure  
22 is those that are out of warranty, those that have  
23 been vandalized. You know, a really useful spot  
24 for funding here would actually be an endowment  
25 fund for the maintenance and upkeep of chargers

1       that nobody else wants to deal with anymore.

2               Even those that are seeking to monetize  
3       charging are not necessarily wanting to cover  
4       those aspects.

5               It's also useful to engage the drivers  
6       and the people who've been doing the upkeep on a  
7       volunteer basis, to see what the real problems  
8       are, both in this area, but in others.

9               People pulling out of driveways while  
10       their cars are still plugged in turned out to be  
11       kind of a big deal actually. We probably want to  
12       keep that from happening again.

13              And so those sorts of little things that  
14       are kind of counterintuitive, and we don't really  
15       think about, end up becoming things that are the  
16       barriers to success. And I think that we have to  
17       focus less on picking winners and more on lowering  
18       barriers and letting a variety of solutions kind  
19       of come out and play.

20              There is a lot of talk about monetized  
21       charging. And, you know, electric drive is in an  
22       ironic situation because we're the only technology  
23       that has an incumbent history of free fueling.  
24       And that's starting to shift, how long that should  
25       stick around.

1           But I do think there's a huge amount of  
2           sensitivity among the stakeholders to using public  
3           funds for charging monetized by somebody else.  
4           Especially when they're owned one-by-one in  
5           private sites, or in public garages.

6           So that's something that we have to kind  
7           of balance and be careful about, how many years  
8           that we think it needs to be free, and the balance  
9           of who should make money and how much and when.  
10          As well as the legal issues of who gets to sell  
11          electricity.

12          One interesting way to prioritize this  
13          is actually a newer model that's emerging called  
14          EV Ready Cities. There's a few different  
15          coalitions that are developing these models and  
16          they have different names. They're all about the  
17          same.

18          And they basically entail laying out a  
19          roadmap for what a geographic area should do to  
20          make itself ready for this technology. It's great  
21          for the geographic areas because they all write in  
22          wanting to know, what do I do to get ready for  
23          this to come.

24          But it also requires buy-in from auto  
25          manufacturers, from the geographic area, from the

1 utilities involved. And it means people have to  
2 cooperate. And some of those people inherently  
3 end up being veterans which helps kind of bless  
4 some of the smaller issues, as well.

5 Obviously a lot of consumer education,  
6 which we know. But I would agree with whoever  
7 said earlier we need a higher emphasis on the K  
8 through 12. I mean by the time we get past the  
9 production-limited phase that will be, you know,  
10 sort of assumed by the early adopters, middle  
11 schoolers will be driving age. You know, you kind  
12 of can't start too young and too early, both for  
13 their own vehicles, but also for their parents.

14 But we also need to broaden it to  
15 stakeholder education. Public fleets are a huge  
16 market for all of us. But I know when I used to  
17 run around with GM and talk to cities, nobody knew  
18 inside those cities what products were available,  
19 and what funding was available.

20 There's all sorts of little pockets  
21 everywhere, but nobody knows what to do with it.  
22 So we ended up playing counselor, as much as  
23 anything else, about what people and cities could  
24 really do with their local public fleets.

25 Same thing with planners, electricians.



1       You know, there's need for sort of workshops and  
2       education on that front. We're already seeing  
3       chargers go in and we're already seeing them not  
4       work. Not because they're difficult, but just  
5       because it's new.

6               There is a desire to have sort of  
7       certified electricians and people that are blessed  
8       and ready for the process.

9               And then in terms of process. Thirteen  
10      years ago when we first started putting these on  
11      the road it took an average of a month from the  
12      time someone knew they wanted one to the time it  
13      landed in their driveway -- charger installation,  
14      permitting and planning and inspection and all  
15      that.

16              Today it takes a month. I have to  
17      believe there's room for improvement there. So,  
18      you know, that requires really kind of trying to  
19      standardize utility processes to the extent  
20      possible, planners in cities, permitting  
21      processes, the electricians, themselves.

22              I mean all of these different entities  
23      that historically don't go into a car purchase  
24      that all of a sudden not only go into your car  
25      purchase, but they're standing in your driveway.

1           So there's a lot of opportunity here to  
2     streamline that process. But also to insure  
3     consistent experience for the consumer. And  
4     that's absolutely key, because these guys make  
5     early Saturn drivers look boring in terms of their  
6     enthusiasm and their community, and the way that  
7     they share information and teach others.

8           So they are, by far, our best and most  
9     important tool. But it also means that when we  
10    screw up, we screw up big.

11          You know, there was some talk already  
12    about leveraging matching funds with employers  
13    that are willing to provide incentives. The Bank  
14    of Americas and Googles of the world.

15          Also with utilities that are willing to  
16    provide funding for drivers that sign up to  
17    purchase their power that's renewable. And also  
18    information sharing. I mean there's a huge desire  
19    for centralized pockets of information. Not only  
20    for these various stakeholders, but also for  
21    consumers.

22          And especially on behalf of  
23    policymakers, utilities and automakers to get a  
24    sense of demand where it is. Are we going to have  
25    load issues in certain neighborhoods.

1           And I think probably similar things for  
2     the other fuels. It would be really good to kind  
3     of know that stuff going in for planning purposes.  
4     And there's really no reason why we couldn't start  
5     to use the online community to harness a lot of  
6     that information now. To draw people in; to  
7     assess demand; parse it down. And actually  
8     develop these in a much more informed way, some of  
9     these policy decisions.

10           And then in terms of incentives, you  
11    know, we talk a lot about financial ones and  
12    rebates and that kind of thing. How -- through  
13    the lesser financial incentives.

14           One of the things that we found was most  
15    useful was actually not the cash, actually in the  
16    early years. Because a lot of the early adopters  
17    that's not so much an issue for them.

18           It's that the incentives that offer  
19    access and privilege and time. HOV lanes, free  
20    parking at airports. Ironically free parking in  
21    L.A. at meters is going away next month. And the  
22    drivers are freaked out about it. We're hearing  
23    about it more than the incentives running out at  
24    the state level to actually buy the cars in the  
25    first place. And it's less than \$1 an hour.

1           So some of these sorts of things  
2 actually have been more useful in moving the  
3 needle than the stuff that you would think.

4           So as we look at this limited pool of  
5 funding and how to use it, I would encourage those  
6 sorts of more creative ideas, as well.

7           And then if I can ramble this much in  
8 ten minutes, you can imagine what we would do in a  
9 day. So, I will lobby for a longer forum  
10 discussion with the veterans. And anybody else  
11 who wants to observe.

12           But really kind of dig into some of this  
13 stuff. And figure out where we're too much in the  
14 weeds and where we're not. What needs examining.

15           You know, I think we have to, as a  
16 state, be a bit more entrepreneurial. We have  
17 become really complacent. We're used to leading  
18 this, and we're not so much anymore. We've become  
19 so known for R&D and kind of the further outlying  
20 plans, the 2050 plan, that we have whole other  
21 areas that are starting to compete for veteran  
22 and stakeholder attention and for OEM attention.

23           And given the traveler provision within  
24 some of the CARB regulations, people can -- you  
25 know, car companies can take their programs to

1 whole other areas and get credit here. So it is  
2 no longer assumed that this is going to be where  
3 it starts.

4 So, I think that it is the  
5 responsibility of all of us, but also the  
6 agencies, to insure that California is far more  
7 competitive from here forward than we have been in  
8 the last several years.

9 And I think it's our responsibility to  
10 help.

11 Thanks.

12 (Applause.)

13 MR. WARD: Our last presenter today is  
14 Jordan McRobie. He's with the California Fuel  
15 Cell Partnership. He's agreed to make a short  
16 presentation, and he has a PowerPoint.

17 And I don't know if the audience on  
18 WebEx can hear, but they're having trouble. We've  
19 heard that, and we're trying to fix that.

20 Jordan.

21 MR. McROBIE: I think a picture is worth  
22 a thousand words, so, everyone, just take a little  
23 stretch, because we're going to wait until this  
24 PowerPoint gets up.

25 AUDIENCE SPEAKER: It's up.

1 (Laughter.)

2 MR. McROBIE: Oh. All right, very good.

3 So, first slide, please. So this is a  
4 picture of a guy with a sunny disposition. And  
5 that has to do with the title of my presentation,  
6 Moving Towards a Commercial Fuel Cell Market.

7 So, that's one reason why I'm happy.  
8 Another reason is that I get to benefit from using  
9 this great technology.

10 And as you can see here I am fueling a  
11 Mercedes SL at the West L.A. Shell station in  
12 Santa Monica. And I hope this adds a little  
13 credibility to my presentation today. Not only do  
14 I have the good fortune of being in this industry,  
15 but I also can tell you firsthand my experiences  
16 driving around in these vehicles.

17 So, I am going to do my best to try and  
18 stick to ten minutes. What I'm going to do in the  
19 next ten minutes I'm going to cover vehicles,  
20 infrastructure, provide a very basic strategy to  
21 transition from demonstration phase to early  
22 commercial and pilot commercial.

23 And then I'll quickly address help that  
24 we need to insure success. And that's partially  
25 in discussion with CEC's needs. And then I'll

1 close with why hydrogen fuel cell vehicles are a  
2 technology that can help us address the  
3 environmental challenges we face today.

4 Next slide, please. All right, so what  
5 I'm going to do is I'm just going to start talking  
6 about the vehicles and this is both cars and  
7 buses.

8 As you saw in the previous slide I'm one  
9 of hundreds of people who participate in these  
10 fuel cell vehicle demonstration programs. And the  
11 mission of these programs is to be really hard on  
12 the vehicles. I mean hit the speed bumps, slam  
13 the brakes and, you know, insure that we get as  
14 much data as possible about these vehicles.

15 The only way you can figure out how a  
16 vehicle is going to behave after 50,000 miles is  
17 to drive the vehicle 50,000 miles.

18 This particular picture is in Maine, of  
19 all places. This is actually the first day of  
20 hydrogen road tour 2008, which was a 14-day trip  
21 across the country from Maine to California. And  
22 I have to say the vehicles performed like champs.

23 And as you can see, the vehicles range  
24 in size. Anything from, you know, a small compact  
25 to an SUV, all the way up to a fuel cell bus. And

1 the reason why I point that out is that these are  
2 fully functional vehicles. These are vehicles  
3 that you'll want to drive today. In fact,  
4 probably some of you have. And the performance is  
5 exactly what you'd expect compared to your current  
6 conventional vehicles.

7 So these come from eight different  
8 manufacturers and three transit agencies. The  
9 buses aren't shown here. And really, again, the  
10 purpose of these demonstration programs was to  
11 collect data and to make these cars ready for  
12 consumers.

13 And these demonstration programs have  
14 definitely proven that the buses and vehicles have  
15 the potential to meet consumer demands, and also  
16 provide significant environmental benefit and  
17 energy diversity benefits that California needs.

18 Next slide, please. All right, so fuel  
19 cell vehicles are nearing the end of this  
20 demonstration phase. Based on all the experience  
21 we've gathered in these demonstration programs,  
22 many of the auto manufacturers are confident that  
23 fuel cell vehicles are ready, or very close to  
24 being ready to be introduced to individual  
25 customers in the next few years. They'll have



1       them for sale or for lease here in southern  
2       California.

3               Now, I know, personally I drive one of  
4       these vehicles, and I'm excited about this. And I  
5       know that my friends, my coworkers are also  
6       excited about this prospect.

7               You basically, during your commute,  
8       you're in a vehicle that's not creating any  
9       pollution, that's not using petroleum, not making  
10      any noise. And me, personally, since I drive the  
11      SL, I like to know that I can go 100 miles on a  
12      tank, now this is a small tank in that particular  
13      vehicle, but if you drive a Honda Clarity SCX or a  
14      Toyota Highlander SCE, or a Chevy Equinox, you can  
15      go further than that 100 miles.

16              Next slide, please. All right,  
17      stations. Obviously if you're going to grow your  
18      customer base you need to have easy access to  
19      fuel. This slide here, it's just a small  
20      representation of the 26 stations that currently  
21      exist in operation today.

22              And I have to say that the stations  
23      today have served their purpose well. Initially  
24      they were built to support specific fleets, or to  
25      prove out a hydrogen production or delivery

1 method. Many were designed with a fixed life  
2 span. And this end date is rapidly approaching.

3 Unfortunately, of the 26 stations that  
4 are currently in operation, only six are really  
5 useable. And what I mean is they have easy access  
6 for all customers, all OEMs. This is extremely  
7 important.

8 The other 20-some-odd stations have hard  
9 access for one reason or another; some are in  
10 fleet yards. Others have dispensing technology  
11 that's outdated. The gentleman said earlier that  
12 he wanted, you know, consideration for 350 bar  
13 versus 700 bar; 700 is the way that most  
14 manufacturers have gone. So that needs to be  
15 considered.

16 The point here is that the old  
17 demonstration model of a particular station  
18 handling a particular fleet of vehicles is no  
19 longer appropriate.

20 And today we are actually seeing in  
21 operation retail-like stations that are as easy to  
22 use as gasoline stations. Some of them make  
23 hydrogen onsite from natural gas or electricity.  
24 Others truck in liquid hydrogen. And in some  
25 cases, some stations use renewables for carbon

1 free fuel.

2 Next slide, please. And I'm showing one  
3 of these stations here. This is actually the  
4 station I was talking about earlier, the Shell  
5 station on Santa Monica Boulevard in west L.A.

6 This is one possibility of what the  
7 future stations look like. I fuel here quite  
8 often. And I'll tell you, it's an exemplary  
9 retail-like experience.

10 All right. So the key question is how  
11 are you going to get from demonstration vehicles  
12 and dedicated fueling stations to consumer  
13 vehicles and retail-like stations.

14 Since I'm a driver I can tell you  
15 firsthand that even though I'm in a pretty  
16 privileged position within the industry, I'm  
17 actually only able to fuel at two fueling  
18 stations. The Shell west L.A. station and a  
19 station here in Diamond Bar, which is a very very  
20 small station. So, access to fuel is a real  
21 challenge.

22 Next slide, please. So Tim said  
23 earlier, or outlined, at least, the CEC ideas or  
24 strategies for cofunding a fueling network,  
25 accelerating multiple use sites, and then also

1 addressing the renewable requirement under SB-  
2 1505. He actually -- our needs and their needs  
3 are aligned pretty well. This is actually almost  
4 duplicative of what he said.

5 So here's the role on strategy that  
6 we're, you know, considering. What we're going to  
7 do is concentrate on early market or key markets.  
8 These are obviously going to be, you know, densely  
9 populated urban areas.

10 Los Angeles is most likely where the  
11 light-duty passenger market's going to develop.  
12 San Francisco is most likely where transit will  
13 develop. And Sacramento is where codes and  
14 standards will be developed in conjunction with  
15 government. This is the way we see it.

16 And, of course, what you want to do is  
17 you want to cluster stations and vehicles. You're  
18 going to maximize station utilization, be able to  
19 support.

20 Higher utilization obviously is going to  
21 provide better economics for the station. And it  
22 will also provide fueling redundancy for drivers,  
23 which is a really important consideration. If a  
24 station does go down, if you spread them out too  
25 far, then you really don't have a backup for fuel.

1           So the following slide is just a --  
2       obviously the reason why we're here is to sort of  
3       make suggestions, comments on what CEC is  
4       proposing. And I, you know, like I said, I think  
5       we're well aligned.

6           Here are just some minor suggestions.  
7       You know, the idea, the big concern is risk. Many  
8       of these stations have a high capital cost. And  
9       for early station builders this is considered a  
10      perceived risk.

11          So we really need support in those early  
12      stations, those first hydrogen stations, to offset  
13      risk. Both the station owner and the vehicle  
14      owner, you know, there's a chance that these  
15      station owners are going to have to lower through-  
16      put in the early years. And we don't want that to  
17      be something that holds back station development.

18          I have to say that the meeting today,  
19      unfortunately the timing hasn't been very good. I  
20      would have liked to have proposed a more detailed  
21      response for the CEC. Unfortunately, our steering  
22      team committee is actually meeting today and  
23      tomorrow to come up with very detailed  
24      suggestions, and a more detailed action plan,  
25      which is a follow up to our early vision document

1 vehicle roll out plan. So we certainly will have  
2 those to you guys as soon as possible.

3 I actually didn't mention one thing. If  
4 you'd go back to the roll out strategy, thank you.

5 I didn't mention anything about fuel  
6 cell buses. You know, I need to make a comment  
7 that we also need fueling infrastructure for  
8 buses, as well. There are, you know, zero  
9 emission bus regulations which go into effect in  
10 2011, 2012.

11 And for the larger transit agencies we  
12 really need to have the necessary fueling  
13 infrastructure in place. And this is of vital  
14 importance to the success of those programs, as  
15 well.

16 Thanks, Pilar.

17 All right, so I sort of talked about our  
18 strategy, where we need support. And I'll just  
19 finish with why fuel cell vehicles.

20 I enjoyed Bill's comment earlier that  
21 it's not even a silver bullet technology out  
22 there, in the sense of there isn't one technology  
23 that's going to solve all the transportation  
24 problems. I like his comment about the bronze  
25 buckshot.

1               So, obviously CEC investment plan is  
2               going to look for a portfolio of technological  
3               solutions. We feel that fuel cell vehicles fit  
4               really well into this for a number of reasons.

5               Obviously you have zero tailpipe or  
6               local emissions. We have the ability to  
7               significantly reduce greenhouse gas emissions.  
8               You can do this with a sustainable domestic fuel  
9               supply. And it's in vehicles that are what the  
10              consumer want.

11             I can actually just say only a quick  
12             comment with respect to sustainable domestic fuel  
13             in the next slide. Okay, so we know why fuel cell  
14             vehicles; we know what they're able to achieve.  
15             Why hydrogen. I think it's pretty  
16             straightforward. Obviously it's an excellent  
17             energy carrier. Has a very good track record,  
18             safetywise.

19             And key is it can be produced from a  
20             number of different sources within this country.  
21             We do a lot of outreach to the public. And I  
22             would say the number one concern that we get from  
23             people is energy independence. That is a huge  
24             concern. So that is one of the great advantages  
25             of this as a fuel.

1           And, I don't know, it's kind of a side  
2       note, I don't know how many people know, but  
3       there's a large amount of hydrogen that's already  
4       produced, tens of millions of tons per year. And,  
5       in fact, a lot of that goes to actually cleaning  
6       up gasoline.

7           Now, there were some comments earlier  
8       about whether hydrogen from natural gas would fall  
9       into the super ultra low section. But I do want  
10      to just put this up here just to show the  
11      potential, even from natural gas.

12           Of course, this is actually a CEC  
13      comparison of a 2012 fuel cell hybrid to an  
14      average 2012 hybrid, and more importantly the 2012  
15      conventional gasoline vehicle.

16           And as you can see, even from reforming  
17      from natural gas you have 45 to 55 percent  
18      reductions or improvements versus conventional  
19      vehicle in energy and greenhouse gases.

20           Now, there again there's been a lot of  
21      talk about hydrogen from renewables. If you go  
22      and take that extra step, then all of a sudden  
23      you're reducing those green bars almost down to  
24      zero. Just significant.

25           So, on final conclusion, the final



1 reason why fuel cell vehicles is because you can  
2 do this with them.

3 Thank you.

4 (Applause.)

5 MR. WARD: Thank you, Jordan. We have  
6 some blue cards, which I mentioned earlier. If  
7 you'd like to make a public comment, we'd like to  
8 get a blue card from you.

9 And I'll take the first one that I have  
10 in order. And that is from Herb Burnett. I don't  
11 know if Herb is still here. He spoke earlier but  
12 I thought this was maybe on a different issue.

13 (Pause.)

14 MR. WARD: The next we have is from Jon  
15 Van Bogart with Clean Fuels USA.

16 MR. VAN BOGART: My comments are more  
17 towards the RD&D, the funding that's available in  
18 the investment plan now, there's a lot of funding  
19 in there for vehicle buydowns and things of that  
20 nature.

21 And as put forth in the 1007 report and  
22 even the 118 plan, the greatest need for propane  
23 vehicles and even CNG vehicles is the need to fund  
24 commercialization of additional vehicle platforms  
25 and engines.

1           And so I think I would like to ask the  
2           CEC, the Energy Commission, to take a look at some  
3           of the funding allocations and see if there's some  
4           room in there to put some more funding into the  
5           RD&D section.

6           Because, ready-today technology such as  
7           natural gas and propane, I think, can do a lot  
8           more in these first few years than a lot of people  
9           are giving us credit for.

10          The propane school bus is the cleanest  
11          school bus sold here in the United States today,  
12          running on a propane engine. It's only been on  
13          the market less than six months. We've sold 1000  
14          of these buses. California's, about 600 of those  
15          are coming. There's a large pent-up demand for  
16          that.

17          A lot of fleets that were under EPAC in  
18          the beginning, a lot of pickup trucks, vans and  
19          things of that nature, that need some range. This  
20          is a perfect application for those type of  
21          vehicles.

22          For other future technologies, we  
23          believe that's also a great investment for the 118  
24          plan. But they are some years out.

25          And last time I checked some of our

1 displacement strategies, we had to displace over a  
2 million gallons a day. And we're getting further  
3 and further behind on that strategy every day.  
4 Both natural gas and propane are alternative  
5 fuels, we think, can displace a large amount of  
6 fuel in the next three to five years.

7 And when these other technologies come  
8 along, CNG and propane are already looking at  
9 hybrid technologies to invest in those, as well.

10 So that would be my comments on that.

11 MR. WARD: Thank you, Jon. Next we have  
12 Robert Bienenfeld. Don't go away, Robert.

13 Robert's with Honda.

14 MR. BIENENFELD: Thank you very much,  
15 Peter. Appreciate the opportunity to share with  
16 you our view of hydrogen infrastructure needs.

17 (Pause.)

18 MR. BIENENFELD: Thank you. Next page.  
19 We'll go page by page and turn them sideways.

20 (Pause.)

21 MR. BIENENFELD: Maybe not. There we  
22 go. Next page.

23 Thank you. As Jon mentioned, we've got  
24 some commercial vehicles out, or precommercial  
25 Honda Claritys out in the market. At this time we

1 have about five customers with more on the way.  
2 And the first deliveries have been to a high  
3 school principal, a district attorney, an actress,  
4 Hollywood producer.

5 They've been delivered through our  
6 dealership network which we have in the three  
7 communities that we've identified as hydrogen fuel  
8 cell communities. Very consistent with what other  
9 manufacturers have identified, as well.

10 The dealerships are responsible for  
11 sales, service, parts, customer relations. They  
12 actually deliver the vehicles. And these vehicles  
13 are built, right now, in a dedicated factory. And  
14 we have mass production type equipment that are  
15 actually making the fuel cell stacks.

16 And next page, please. Thank you. As  
17 was mentioned, there's some great low carbon  
18 benefits to fuel cell vehicles. Comparing the  
19 Clarity to a comparably sized gasoline-powered  
20 vehicle, an ICE, we see about a 62 percent  
21 reduction in well-to-wheel greenhouse gas  
22 emissions. And that's based on methane steam  
23 reforming. So comparable to even a similarly  
24 sized battery electric vehicle on the California  
25 grid.

1                   Next page. Our estimate, Honda's  
2                   estimate of what the vehicle volume will be in the  
3                   next few years shows that we're moving from  
4                   hundreds to thousands of new vehicle introduced  
5                   every year. And the units in operation will  
6                   quickly exceed a thousand.

7                   Next. The problem is that all the known  
8                   stations and plant construction supply about 500  
9                   vehicles, which shows that we're going to have a  
10                  capacity problem in the next year or year and a  
11                  quarter.

12                  We see that we're going to exceed the  
13                  supply in the third quarter of 2010. And, of  
14                  course, that's a problem with station time being a  
15                  year and half to two years.

16                  We also estimate that based on this  
17                  production plan, these production plans, we are  
18                  going to need a new 100 kilogram per day station  
19                  about one every quarter starting early next year.  
20                  That means opening next year, so funding would be  
21                  earlier.

22                  Next page. What we're trying to do is  
23                  move from chasing the hydrogen infrastructure to  
24                  being market driven.

25                  Next page. What we want to do is begin

1 with markets that have identified themselves as  
2 potential hydrogen communities. And this we've  
3 done based upon the demand we have seen for our  
4 vehicles.

5 It's very important that we consider the  
6 communities, the corridors within those  
7 communities, as well as the connectors to other  
8 communities. We think we need a cluster concept  
9 that has some redundancy and backup. The station  
10 has to be about five minutes from a consumer's  
11 house, as well as we need backup within about 15  
12 minutes of that customer.

13 And it's real important that we have  
14 marquee or image stations within the community.  
15 That we have small community stations that can  
16 support their communities. And we need to have  
17 both 70 megaPascal and 35 megaPascal stations.

18 Honda supports the 70 megaPascal  
19 stations, but our vehicles run on 35 and we have -  
20 - our range is exceptional without that. We're  
21 looking at our real-world range of over 200 miles.

22 Next page. The communities we've  
23 identified are Santa Monica or west L.A., the  
24 South Bay area around Torrance, and Costa Mesa --  
25 I'm sorry, Newport Beach and Irvine.

1           The next page shows that within those  
2           stations we've got -- the little red box in the  
3           center is where the Santa Monica station is right  
4           now. And we envision the need for two more  
5           stations in that area. And we're very clear where  
6           we think there are hot spots within this general  
7           market, and would best serve the consumers in that  
8           area.

9           The next page shows the South Bay  
10          market. And it's centered a little bit around the  
11          Torrance pipeline station, which is in  
12          construction. But we see the need for two to  
13          three additional stations in that market.

14          Next page. And then the Irvine/Newport  
15          Beach markets we see that there's the current UC  
16          Irvine station. And we think that there needs to  
17          be three other stations to support those markets,  
18          as well.

19          Next page. So, in conclusion, we think  
20          we need about one new 100-kilogram-per-day station  
21          coming online per quarter beginning in mid 2010.  
22          We'd like to see them clustered where the demand  
23          is. Stations really need to be retail oriented  
24          with good ingress and egress, well lit, clean,  
25          visibility from the street -- visible from the

1 street, well-traveled streets so people are  
2 comfortable going there.

3 And there's been some talk about mobile  
4 refueling, two trailers. We'd like to rename them  
5 semi-permanent stations. When they're put in a  
6 community we'd like to make sure that the mobility  
7 is hidden so that consumers can get a sense of  
8 permanence about those stations. And the best way  
9 to do that, we think, is to separate the pump and  
10 dispenser to get that feeling.

11 And that's it, thank you very much.

12 MR. WARD: Great, thank you, Robert.  
13 Next we have David Blekhman from Cal State Los  
14 Angeles.

15 MR. BLEKHMEN: I would like to thank the  
16 panel and the CEC management for organizing this  
17 workshop and opportunity to provide our feedback.

18 My main concern is educational and  
19 workforce development topics. The document  
20 identifies a couple of items, initiate education  
21 and proper promotion within California. And the  
22 other one is provide workforce training --  
23 alternative renewable feedstock and vehicles.

24 On the other hand, appendix D has other  
25 categories being investigated, workforce training



1 to support deployment of new hybrid trucks,  
2 equipment replacement, zero to 5 million to be  
3 determined details.

4 And from today's presentation I'm still  
5 left unclear of how you're going to pursue those  
6 two bullet items in your plan.

7 Surely that is a concern. I'm  
8 intimately involved in teaching electric hybrid  
9 fuel cell vehicle, fuel cell courses, alternative  
10 renewable energy. And would like to see more  
11 support, especially for this document targeting  
12 renewable fuel and vehicles, to have a more  
13 comprehensive plan.

14 I certainly would be available, if there  
15 is a need, to provide input. It was actually  
16 refreshing to hear from Clean Cities initiative to  
17 listing of the jobs. Certainly not all of them  
18 will qualify for this particular opportunity, but  
19 a short list could be worked out and pursued.

20 I also have a few specific items in the  
21 educational arena. Once again, due to specific  
22 nature of courses I teach, I have developed  
23 relationships with the OEMs, and they certainly  
24 have made their facilities available for one-time  
25 tours.

1           What I would like to see is more  
2       consistent support to OEMs to develop onsite  
3       programs where we could come for several weeks and  
4       have a consistent training there for both levels,  
5       students and faculty training, especially for  
6       community colleges, instructor training. For CSU  
7       system it would be also of great value, and the  
8       technologies nowadays are comprehensive. It  
9       involves Los Angeles, it involves electric motors,  
10      if it involves battery ultra capacitors. So there  
11      could be deficiencies in our -- so that would be  
12      great.

13           I also would like to point Commission's  
14      attention that while the report mentions UC Davis  
15      and UCLA centers, and those are valuable  
16      contributors, also would like -- should give to  
17      California State University system and maybe to  
18      community colleges as a more comprehensive set of  
19      incentives.

20           And one more is related to out-of-state  
21      funding or providing grants for research out of  
22      state. And since it's California taxpayers, I  
23      would like to see a split, let's say 51 percent to  
24      be spent instate versus 49 percent out-of-state  
25      entities.

1                   Thank you.

2                   MR. WARD: Thank you, David. As an  
3                   alumnus from the California State University  
4                   system, I agree with your comments. We didn't  
5                   mean to exclude any facet of California education  
6                   from this. Thank you.

7                   Are there any other blue cards? Any  
8                   other individuals wishing to make a short comment?

9                   MR. PROVENZANO: I'm James Provenzano  
10                  with Clean Air Now.

11                  Just looking through the figures you  
12                  have in the investment plan, the draft, given the  
13                  benefits from hydrogen energy technologies, we  
14                  would like to see a ramp-up of funding to the  
15                  hydrogen sector.

16                  I noticed, unless -- fuel cell vehicles  
17                  are electric drivetrain, unless electric  
18                  drivetrain portion also includes hydrogen, maybe  
19                  that might be a leveling item. But I don't see  
20                  how that's written in here.

21                  The other issue is related to the heavy-  
22                  duty, the transit sector. I saw that you had  
23                  about \$2 to \$4 million to the heavy-duty transit  
24                  sector. And I wondered why that number was so  
25                  low, given the impact of public transit and

1       renewables that could be applied to public transit  
2       and low carbon drivetrains to public transit.  
3       Why, it seems like the public transit is getting  
4       short shrift. Is there a response to that?

5               MR. WARD: Well, I'm pretty sure that's  
6       not intentful, but I may want to call your  
7       attention to the other side of the AB-118 program,  
8       that is the air quality improvement program that  
9       is administered by the Air Resources Board.

10              I believe that they are very interested  
11       in electric drive and demonstrating heavy duty, as  
12       well. It isn't just our program from this one  
13       bill. Maybe I didn't make that clear enough  
14       earlier on.

15              The Air Resources Board does have about  
16       \$80 million a year for the same term, seven and a  
17       half years. So we are cooperating and planning  
18       jointly with them. And so we basically understand  
19       that they will be working in the vehicle sector  
20       and in the hydrogen area, specifically --

21              MR. PROVENZANO: Okay.

22              MR. WARD: -- more extensively than we  
23       will be.

24              MR. PROVENZANO: And then my last  
25       comment is with ethanol, given the latest research

1 on ethanol, and especially corn-based ethanol, are  
2 you going to be skewing the funding away from  
3 corn-based ethanol into more renewably sustainable  
4 ethanol production methods?

5 It seems like the ethanol portion is  
6 heavily weighted, given the latest research on  
7 ethanol and the issues related to ethanol.

8 Also, we're concerned, as a clean air  
9 advocacy group, that the byproducts of ethanol  
10 combustion, it's just more than the criteria  
11 pollutants. You run into other health effects  
12 from combustion products from ethanol.

13 MR. WARD: Regarding your first point  
14 regarding the ethanol and the production streams,  
15 I think we are looking for the lowest GHG  
16 possible. Production streams of ethanol, that's  
17 what we've heavily favored from the waste stream  
18 from other, you know, more production, lower GHG  
19 lower carbon row crops. That is definitely our  
20 focus.

21 MR. PROVENZANO: Okay.

22 MR. WARD: We want to do things, as I  
23 mentioned earlier, in a much more sustainable  
24 fashion going forward. And we would like each  
25 year to have projects, say even fuel production

1 projects, that are better year to year, as the  
2 technologies evolve and as the feedstocks are  
3 better developed.

4 MR. PROVENZANO: Okay. And then I'm  
5 sure General Motors has submitted their scenario  
6 for hydrogen fueling stations, just like what  
7 Honda has done, for cluster approach to hydrogen  
8 fueling stations. When they have a study showing  
9 that only 40 fueling stations in the Los Angeles  
10 region would support the introduction of a major  
11 fleet of hydrogen fuel cell powered vehicles in  
12 the region.

13 So, it's a low-cost introductory step  
14 towards mass marketing of fuel cell vehicles.  
15 Where if you have the fueling stations are running  
16 between \$1 to \$2 million a pop, you're looking at  
17 only a \$40 or \$80 million infrastructure  
18 investment to actually get fuel cell vehicles off  
19 the ground.

20 MR. WARD: We've heard from the  
21 California Fuel Cell Partnership, we have not  
22 directly gotten the true count of numbers of  
23 vehicles that will be in play by General Motors in  
24 a statement directly to the Energy Commission, if  
25 that was the question.

1 MR. PROVENZANO: Okay. Thank you.

2 MR. WARD: Are there any other public  
3 comments? I have one more. Mark Aubry with Smith  
4 Electric Vehicles Group. Good afternoon, Mark.

5 MR. AUBRY: Pilar's got a similar video  
6 to last week's, and we'll see how successful it  
7 shows up.

8 This is just a basic overview of Smith.

9 (Played video.)

10 MR. AUBRY: Thanks, Pilar. Just as we  
11 reiterated -- or just as we iterated last week in  
12 Fresno, and then previously in the week in  
13 Sacramento, we're certainly interested with the  
14 Energy Commission to bring our products to not  
15 only the United States, but also to California.

16 And so while we're here obviously Smith  
17 Electric Vehicles as being the largest  
18 manufacturer of all electric commercial vehicles,  
19 specifically designed for fleet usage.

20 And we would like to be able to bring or  
21 steer 150 of the initial 500 vehicles that we'll  
22 produce this year specifically to California.  
23 Specifically to major metropolitan areas such as  
24 L.A. and all the cities surrounding that.

25 Just as you saw here on the slide, those

1 vehicles will range anywhere from about 16,000  
2 pounds up to 26,000. And what you most recently  
3 saw this past week at the Chicago auto show, you  
4 see collaboration with Smith Electric Vehicles and  
5 Ford on the transit connect platform and other  
6 platforms. That's one of the things that they  
7 have just recently announced for not only the  
8 U.S., but as well for Europe.

9 Another one of the things again to  
10 mention is that in these first 150 vehicles that  
11 will come in here as early as summer 09, some of  
12 the key points, the highlight vehicle operations  
13 that the portfolio will deliver. Vehicle  
14 operations, no tailpipe emissions; no vehicle-  
15 based diesel or gasoline fuel consumption.

16 As far as the manufacturing side, we  
17 have three of our entities that are based here in  
18 California already, which we feel qualifies us,  
19 even though we won't manufacture the physical  
20 vehicles today in California, our footprint is  
21 already here. Anywhere from -- powered access,  
22 which is based in Fresno, California, to our  
23 mainstream engine and drivetrain supplier, which  
24 is based right here in the L.A. area.

25 And then as well as fast-charging



1 opportunities and companies that we're working  
2 with here in the L.A. area, as well.

3 The maintenance side. Total of four  
4 moving parts as opposed to over 1000 vehicles --  
5 1000 parts in the traditional vehicle. Certainly  
6 the energy efficiency and environmental benefits  
7 that you can get from this. The energy security.  
8 And I think probably one of the most key things  
9 that, Peter, you and I have talked about, is that  
10 it's a full production vehicle in Europe, as well  
11 as it will be here in the U.S.

12 So it's not something that we hope to  
13 make this vehicle, we hope it works, and it's  
14 never been tried or proven in any other public  
15 fleets. It has been doing that, and this vehicle  
16 is rolling out in the states mid-2009.

17 And we'd certainly like to direct it,  
18 with the support of the Energy Commission here,  
19 into California, specifically the L.A. area, as  
20 well.

21 Thanks very much.

22 MR. WARD: That's great, thank you,  
23 Mark. Thanks for coming back again to the  
24 workshop, appreciate it.

25 I think we have one more blue card.

1 This will be for Tim Volk, MVP.

2 MR. VOLK: Stay here in case it doesn't  
3 work.

4 (Pause.)

5 MR. VOLK: I noticed in the original  
6 under improved vehicle efficiency, 22 million  
7 allotted. Of course, you've got a tough time to  
8 get that out before, what is it, June 30th, you  
9 have to do your first allocations, if that's  
10 correct?

11 This would be under the retrofit for  
12 existing vehicles. It's a kind of technology --  
13 test vehicles.

14 We've run tests on different vehicles  
15 from Class 8 all the way down to tow trucks, so it  
16 would be the mid-range and large-range vehicles.  
17 And anywhere from 8 to 12 percent on average of  
18 increased fuel efficiency.

19 It is an aftermarket product originally  
20 developed for performance vehicles for the Dodge  
21 Chargers aftermarket. It gives increased torque  
22 and horsepower, but what we're really looking for  
23 is to go into -- our organization is an equity  
24 group and we invested in this company to take them  
25 to the next level, which would be to fleet, buses,

1 class 8 trucks, et cetera.

2 To aftermarket equip current vehicles  
3 that are not going to be changed to LPG or natural  
4 gas. And help the efficiencies, and that way  
5 lower the carbon footprint.

6 So something we'd like to propose for  
7 funding. Especially on city buses or the school  
8 buses it would be great to give them all natural  
9 gas, but the ones that can't be because of  
10 constraints, we could put these on and retrofit.

11 This also will work with natural gas.  
12 It will increase their efficiencies, also. So  
13 really any moving vehicle. That's just one of the  
14 products we're involved with.

15 The other one, I was glad to hear you  
16 talking about ethanol production. And I believe  
17 the numbers now are, I think we bring in 95  
18 percent of our ethanol into California, if that's  
19 correct. And that's a huge carbon footprint, I  
20 believe, in the production of ethanol.

21 And to bring that across the country  
22 into California, and increase the carbon footprint  
23 as we go along, to decrease it small here is one  
24 of the problems in the green environment that we  
25 live in now.

1           We're investing in some technologies  
2           that are in the waste-to-energy area. And what  
3           we're doing is looking at different landfill sites  
4           that could produce with a very positive ROI,  
5           return on investment.

6           Under plasma arc gasification processes  
7           we're -- the different sites in Orange County,  
8           L.A. County and southern California could produce  
9           anywhere from 60,000 to 250,000 gallons of ethanol  
10          a day off of the existing waste stream that we now  
11          bury in the ground.

12          So there's a combination of electricity,  
13          stationary fuel cells, we're looking at the  
14          technology there that's being developed. Also,  
15          the main thing is the ethanol production. So  
16          that's something we'd like to present to you guys  
17          in a formal way to look into, maybe co-oping  
18          something with the CEC. Because of the amount of  
19          trash we have here, reduces the footprint of those  
20          landfills by two-thirds. And at the same time  
21          comes out of that a renewable sustainable ethanol  
22          production of quite a massive amount.

23          Right now a lot of the counties are  
24          looking at taking that trash and shipping it to  
25          Nevada and burying it there, because all the

1       landfills are filling up, which does nothing for  
2       our carbon footprint, of course, except makes it  
3       worse.

4               So, thank you very much.

5               MR. WARD: Okay, thank you, Tim. There  
6       are no other blue cards and no one's on the phone  
7       wishing to ask questions. Pilar?

8               (Pause.)

9               MR. WARD: Hearing none, I want to thank  
10      you all for attending the workshop. And those on  
11      the phone, as well.

12              We'll be at the Los Angeles Port  
13      tomorrow with another workshop. Any of those  
14      listening can tune in at that point. Otherwise,  
15      thank you all for attending. Drive safely today.

16              (Whereupon, at 12:35 p.m., the workshop  
17      was adjourned.)

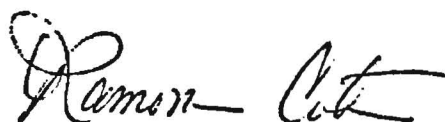
18                       --o0o--

## CERTIFICATE OF REPORTER

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

IN WITNESS WHEREOF, I have hereunto set my hand this 23rd of February, 2009.



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