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BEFORE THE  
CALIFORNIA ENERGY COMMISSION

**Staff Workshop on Alternative and Renewable Fuel  
and Vehicle Technology Program**

**Docket Number 10-ALT-1**

CALIFORNIA PUBLIC UTILITIES COMMISSION  
AUDITORIUM  
505 VAN NESS AVENUE  
SAN FRANCISCO, CALIFORNIA

WEDNESDAY, JUNE 1, 2011  
9:00 A.M.

 **ORIGINAL**

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Charles Smith, Project Manager  
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## ALSO PRESENT

Robert Garzee, ETDC - Silicon Valley and City of San Jose  
James Robbins, Business Cluster Development  
Jon Van Bogart, Clean Fuel USA  
Eric Bowen, Renewable Energy Group  
Dave Williamson, Orange Diesel  
Wesley Caddell, People's Fuel

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

2 JUNE 1, 2011

9:04 A.M.

3 MR. SMITH: Good morning, everyone. My name is  
4 Charles Smith and I am the Project Manager for the fiscal  
5 year 2011-2012 Investment Plan for the Alternative and  
6 Renewable Fuel and Vehicle Technology Program. We are a few  
7 minutes past nine and it's possible that a few more people  
8 will trickle in but I think it would be a good time to get  
9 started.

10 This is our agenda for today. We have an  
11 introduction and program overview. Then Peter Ward will  
12 provide a program status update on the Alternative and  
13 Renewable Fuel and Vehicle Technology Program. I will be  
14 providing an overview of the contents of the fiscal year  
15 2011-2012 Investment Plan. Then we will have a period of  
16 public comment. And depending on how long or short that  
17 period lasts we may break for lunch or we may adjourn as  
18 soon as public comment ends. I will also note that this  
19 meeting is being broadcast on WebEx. We have a few WebEx  
20 participants online and we also have a court reporter in the  
21 room.

22 Some background on the program. This program was  
23 established by Assembly Bill 118 in 2007 and this portion of  
24 that bill is administered by the Energy Commission. There is

1 a sister program called the Air Quality Improvement Program  
2 that is administered by the California Air Resources Board.  
3 The statutes were subsequently amended by AB 109. The  
4 emphasis of this program is to develop and deploy innovative  
5 technologies that transform California's fuels and vehicle  
6 types to help attain the state's climate change policies.

7           We have a number of key policy objectives that can  
8 be met through these activities. First, of course,  
9 greenhouse gas emission reduction, we have some aggressive  
10 goals to meet in that regard both in the short term by 2020  
11 and by 2050. We also have goals for petroleum reduction,  
12 alternative and renewable fuel use and in-state biofuels  
13 production.

14           A brief recap of the program funding and objectives.  
15 The program has a sunset date of January 1, 2016 and an  
16 annual program budget of approximately \$100 million. That  
17 is what we are anticipating for the proposed investment plan  
18 for fiscal year 2011-12. Through this program we develop,  
19 product, manufacture and deploy alternative and renewable  
20 fuels, advanced vehicles, vehicle efficiency improvements  
21 for on-road and non-road applications. We also do other  
22 non-hardware work, including workforce training and job  
23 creation, fostering education, promotion of alternative  
24 fuels and vehicle technology centers. And we also prepare  
25 environmental, market and technological assessments of

1 alternative fuels and vehicle technologies.

2           The Energy Commission develops and adopts an  
3 Investment Plan each year. This is the third Investment  
4 Plan. The Investment Plan determines the priorities and  
5 opportunities for the program during that year. The Energy  
6 Commission creates and consults with an Advisory Committee  
7 as it develops the Investment Plan. Earlier last week we  
8 held the second Advisory Committee meeting for this  
9 Investment Plan and the transcripts and recording of that  
10 meeting should be available on our website soon. Also  
11 included on this slide is the URL for the Investment Plan  
12 website. There you can find the current version of the  
13 investment plan, previous versions, meeting agendas,  
14 transcripts, etcetera.

15           This is our anticipated schedule for adoption of the  
16 fiscal year 2011-12 Investment Plan. On May 9th we posted  
17 the committee draft of the Investment Plan, which is the  
18 most recent version. On May 23rd we held our second  
19 Advisory Committee meeting. Last week we held our Public  
20 Workshop in Long Beach and this week, of course, today we  
21 are holding our Public Workshop in San Francisco. We are  
22 very grateful to the California Public Utilities Commission  
23 for letting us use their facilities in presenting this to  
24 you. And in the middle of the month we will be posting the  
25 Committee Final Version of the Investment Plan and we

1 anticipate taking that Investment Plan to a Business Meeting  
2 on June 29th for possible adoption. And that will be just  
3 in time for the end of this fiscal year and the start of the  
4 fiscal year 2011-12.

5 At this point we will have Peter Ward provide a  
6 program status update.

7 MR. WARD: Good morning, everybody. Thank you for  
8 coming. And those who on the phone, thank you for being on  
9 the phone and listening. Today, as Charles said, we are on  
10 our second workshop for the 2011-12 Investment Plan. And we  
11 are lucky at this point to not have any cuts for the program  
12 for the next fiscal year. But the legislature is still in  
13 session so we are ever vigilant.

14 Here are the solicitations and awards that we have  
15 compiled so far in the plan. This is the first Investment  
16 Plan. You can see that we were able to bring some federal  
17 money to California and we put up \$36.5 million for a total  
18 of nine projects and some charging infrastructure as well,  
19 seven projects for \$5.6 million. I won't go through the  
20 entire list. But you can see, other than the logo in the  
21 bottom right-hand corner where you can't really see the  
22 total, it does reveal the number of projects and some of you  
23 can do the quick math. But it is \$156 million for the first  
24 two fiscal years. We had one Investment Plan covering that.  
25 I think we've been able to encumber most of these funds if

1 not all of these funds in the intervening two years. So I  
2 think we are off to a good start with this first Investment  
3 Plan.

4 Here is a listing of the Public Agency Agreements  
5 that we have struck. Workforce training is by far the  
6 largest one, \$15 million. This program was hit as the  
7 California economy was hit with a bad economy nationwide and  
8 we really felt that to put the emphasis on workforce  
9 training and jobs development was a smart move for us to  
10 make in the early years of the program. And in fact in the  
11 first Investment Plan we are doing fuel standards  
12 development with the California Department of Food and  
13 Agriculture for hydrogen fueling and hydrogen dispensing.  
14 Light-duty electric vehicle deployment with the ARB, we have  
15 provided \$2 million for their light duty program and \$4  
16 million for their medium- and heavy-duty electric vehicle  
17 deployment. We are looking at woody biomass sustainability.  
18 We have contracted with UC Irvine for their STREET model.  
19 The STREET model is a - I wish I could come up with the  
20 entire acronym, it's Spatially and Temporally Resolved  
21 Energy and Environmental Tool, I think that's what it is.  
22 And what it is is a great model to help with the deployment  
23 of alternative fuel infrastructure. The first one they did  
24 was for hydrogen. We have asked them to expand that model  
25 to include other alternative fuels and in other regions in



1 California other than just Southern California. We still  
2 anticipate striking an agreement with the National Renewable  
3 Energy Laboratory, NREL, and we will be concluding an  
4 agreement soon with AC Transit for a hydrogen fueling  
5 station in Oakland.

6 We had eight solicitations. We received 313  
7 proposals that were all reviewed and total requested for  
8 about that \$156 million that you saw is \$1.2 billion. So I  
9 think you can see that this area is well oversubscribed. It  
10 has been a pent up demand for many, many years. And we are  
11 hoping to work through that with the second and now third  
12 Investment Plan. Grant awards and agreements are \$156  
13 million, as I said, 69 grant awards, \$31.6 million among 10  
14 agreements, and a total of \$188 million. We are on track to  
15 meet the encumbrance and agreement development deadlines for  
16 the 2009 and 2010 funds.

17 Current solicitations: One on the street right now  
18 that my colleague Mike Smith, in the audience here, and I  
19 developed, this is a buy-down incentives for natural gas and  
20 propane vehicles. It has been on the street since April  
21 13th and a total of \$14.54 million. And it continues until  
22 April 2013 or whenever the funds have been exhausted. And I  
23 think the funds will be exhausted very soon, as a matter of  
24 fact. At the last Business Meeting I think we approved  
25 another \$4 million, bringing the total to \$10 million

1 already encumbered out of the \$14.54 million in just a month  
2 and a half. So this has been a very quick-moving tool to  
3 get the vehicles deployed out there and to put the funding  
4 on the street where it does the most good.

5 Broken down, it is \$2 million for propane school  
6 buses and \$12.54 million for natural gas and propane  
7 vehicles of other types. How it works is, the original  
8 equipment manufacturers or their designated dealerships and  
9 distributors apply for the incentive reservations in blocks  
10 of funding. And the incentives are explicitly included to  
11 be part of the negotiated final sales price of the vehicle.  
12 This has worked incredibly well, as a matter of fact, and I  
13 think this could be an enduring mechanism that we would use  
14 in the future for this program where lots of evaluation of  
15 proposals is not required. We really do want to get this  
16 money on the street as soon as possible, deploying the  
17 vehicles is key to make the market for alternative fuels  
18 going forward for fuel stations, etcetera.

19 Current solicitations: This is the gaseous fuel one  
20 that I just mentioned, the vehicle buy-down. Here are the  
21 different incentive categories that we have provided per  
22 vehicle. Light-duty up to 8500 is \$3000, light-duty 8501 to  
23 14,000 is \$8000 and \$6000, respectively natural gas and  
24 propane. And you can see that take-up that we have gotten  
25 so far. Quite a few vehicles have been applied for and

1 reserved. Typically the OEMs or their dealer-distributors  
2 have 120 days to sell the vehicle and then they can claim  
3 those incentives back just a one-page form to us showing all  
4 the sales transaction information and vehicle registration  
5 information. And then we schedule payment with the Office  
6 of the State Controller. It's a very simple process and  
7 anybody that is interested in purchasing vehicles, I suggest  
8 that you speak with the OEM you have in mind or their  
9 designated dealer or distributor to see if you can become  
10 involved and purchase vehicles through this mechanism.

11 We have another solicitation that is on the street.  
12 It is the Plug-in Electric Vehicle Readiness Program. This  
13 is funding for regions that are planning the roll out of  
14 plug-in electric vehicles and the necessary infrastructure,  
15 be it opportunity charging or home charging or working  
16 charging. This is for the planning in the regions. It is  
17 already well underway but has been underfunded and we found  
18 this to be an area that we could definitely help with to  
19 bring the readiness up to the time where we are deploying  
20 the vehicles, which is currently taking place. We expect  
21 that applicants will develop a multi-stakeholder PEV  
22 Coordinating Council. And this money is on a first come,  
23 first served basis. The maximum award is \$200,000 per  
24 region and up to \$1 million is available currently but we  
25 may be adding to that should demand require that.

1 Applications are due the 5th of July and it is open until  
2 July 5, 2012.

3 Upcoming solicitations for the current year  
4 Investment Plan are the medium- and heavy-duty  
5 demonstrations, electric drive and gaseous fuels, \$15.9  
6 million. Hydrogen fueling, we have funding in the  
7 Investment Plan that could be rolled over to this year, the  
8 next Investment Plan, for a solicitation in the Fall,  
9 possibly. Biofuel and renewable natural gas production and  
10 feasibility; this is a very large category. In the past we  
11 have had a separate category for biofuels and separate for  
12 biomethane. These are merged and that's why that is much  
13 larger than normal. The alternative fuel infrastructure is  
14 \$29.3 million. I think that may include the hydrogen  
15 funding but I'm not sure, but it has all the alternative  
16 fuels that require infrastructure help at the retail level  
17 or at the fleet level. Innovative technologies and federal  
18 cost sharing is an important area that we want to make sure  
19 that we can have funding available to match any federal  
20 efforts that are going forward. And I've heard of one this  
21 morning that I think could be very exciting for us to take  
22 part in. I think California has its rightful place in  
23 innovation and I'm hoping that we will be successful in  
24 deploying this money as soon as possible and using this  
25 money to leverage federal investment in California as well.

1 Market and program support of \$8.4 million. Total is \$106.8  
2 million.

3 And I'm going to call on Charles now to walk you  
4 through the 2011 and 2012 Investment Plan.

5 MR. SMITH: Thank you, Peter.

6 A brief summary. We have received extensive  
7 comments and input on this Investment Plan throughout the  
8 process. We had 15 Advisory Committee members provide input  
9 at the first Advisory Committee meeting with roughly the  
10 same number participating in the second Advisory Committee  
11 meeting last week as well. We had 25 organizations and  
12 individuals provide their own comments other than Advisory  
13 Committee members at that first Advisory Committee meeting.  
14 I would estimate maybe another 10 or 15 or so at the second  
15 Advisory Committee meeting as well. We have received more  
16 than 50 comments to our public docket from different  
17 organization and individuals and we have incorporated those  
18 as appropriate into the Committee draft Investment Plan and  
19 will continue to do so into the Committee final version of  
20 the Investment Plan.

21 June 3rd is the preferred deadline for additional  
22 items to be sent to our docket. If you send them to our  
23 docket there is a chance that there might be a few days  
24 delay in it reaching us in the office so if you perhaps also  
25 cc myself or Peter that would help us get your comments

1 quicker and help us make sure that we can incorporate them  
2 as appropriate into the Committee final version.

3           The Investment Plan outlines funding allocations for  
4 fiscal year 2011-12. We anticipate \$100 million in funding  
5 this fiscal year. This is spread across 18 funding  
6 categories over 12 fuel types and activities. Our  
7 methodology, we identify the GHG reduction, petroleum  
8 reduction and market potential for a variety of alternative  
9 fuels and vehicle technologies; we identify the barriers to  
10 those technologies greater market adoption; we look at what  
11 activities are being undertaken by others; we look where our  
12 funding can have the biggest impact; we consider short-,  
13 medium- and long-term opportunities; and we also provide  
14 consideration for non-fuel and vehicle needs such as  
15 workforce training, technology assessment and analysis,  
16 etcetera.

17           The Investment Plan is broken down primarily by fuel  
18 type. The first section is plug-in electric vehicles. And  
19 so for each section I'm going to describe the funding  
20 allocations that we have and some of the background on those  
21 fuel types as we observe them in the Investment Plan. For  
22 plug-in electric vehicles in the short-term we see that the  
23 demand for these vehicles is outstripping their supply. In  
24 the medium term we see the need for continuation of - well,  
25 a question as to how to continue vehicle incentives as these

1 vehicles become more popular. The Air Resources Board  
2 through the Clean Vehicle Rebate Program provides a certain  
3 level of incentive for each of these types of vehicles.  
4 However, we will see as the number of vehicles being  
5 deployed increases whether the state and federal tax credit  
6 can keep up with the demand.

7 In the long term there are a few issues that need to  
8 be addressed. Battery research and development is something  
9 that continues to be of interest to the EV community. The  
10 federal government, though, has taken a significant leading  
11 role in that, they have already invested about \$2 billion  
12 into that activity. So we are focusing our efforts on  
13 insuring regional plug-in electric vehicle readiness. As  
14 Peter mentioned, we have a solicitation already on the  
15 street for \$1 million and we anticipate supplementing it  
16 with another \$1 million allocation for the next fiscal year.  
17 We have also allocated \$7 million for charging  
18 infrastructure for plug-in electric vehicles. In previous  
19 versions of the Investment Plan this was broken down into  
20 individual types of charging infrastructure, for example  
21 fast chargers versus public chargers versus residential  
22 chargers. As we continue to get new information on what  
23 kind of infrastructure is needed we decided that it would be  
24 best to keep that \$7 million bundled for now and then we  
25 will make our decision as to what kinds of charging

1 infrastructure is most needed. And we certainly look for  
2 your input on that.

3           For hydrogen we benefit from the results of survey  
4 data that was done jointly with the Air Resources Board. We  
5 see a steady increase in certain clusters, especially Los  
6 Angeles and Orange County. The automakers commercialization  
7 plans center on 2015 as target date for which they will be  
8 expanding out to about 50,000 vehicles by the 2015 to 2017  
9 period. So to help meet the fueling needs of those vehicles  
10 we have allocated \$8 million in our Investment Plan. Some of  
11 this funding may be diverted as needed to a fuel cell  
12 transit project akin to the AC Transit project but this one  
13 would take place in Southern California. Funding for  
14 light-duty vehicle fueling infrastructure will be combined  
15 with the \$10.2 million that Peter noted on a previous slide  
16 that is available from fiscal year 2010-11.

17           On natural gas we see that fuel supply is relatively  
18 high and prices compared to diesel and gasoline are quite  
19 low. As a result we see an increasing number of fleets  
20 turning to natural gas to reduce long-term costs and also to  
21 help meet their air quality standards. This is covered in  
22 greater detail in the medium- and heavy-duty section but I  
23 mention it here to point out that in the year 2000 there  
24 were less than 2000 medium- and heavy-duty natural gas  
25 vehicles on the road. In 2009 there were more than 12,500



1 medium- and heavy-duty natural gas vehicles on the road. So  
2 obviously this is an expanding market. Infrastructure,  
3 however, is limited to meet the needs of these medium- and  
4 heavy-duty fleets and our \$8 million will go towards  
5 matching the needs of fleets that are converting from diesel  
6 to compressed natural gas and to meeting the needs of  
7 liquefied natural gas vehicles that use LNG for long-haul  
8 applications.

9           For propane we see an increasing number of ARB-  
10 certified light-duty vehicles. This \$1 million in funding  
11 for light-duty vehicle incentives will support the light-  
12 duty propane portion of the gaseous fuels buy-down program  
13 that Peter discussed earlier. Hopefully, this level of  
14 funding will take us through much if not most of the next  
15 fiscal year. We have also allocated a half-million dollars  
16 for fueling infrastructure. This is to establish a network  
17 of roughly 10 key stations along Interstate 5 in Northern  
18 California.

19           The next section of the Investment Plan focuses on  
20 biofuels. New to this year's Investment Plan we provided  
21 much more information on feedstocks, feedstock potential,  
22 feedstock economic feasibility, feedstock sustainability,  
23 carbon intensity, etcetera, especially the waste-based  
24 feedstocks. And you can see this in Table 20 of the  
25 Investment Plan, which summarizes the waste feedstock

1 potential available within California.

2           The first fuel type covered in the biofuels section  
3 is gasoline substitutes. The large focus in this section is  
4 ethanol, which is of course the predominant drop-in additive  
5 for gasoline. But we have expanded the title and the scope  
6 of our production funding allocation to include other  
7 fungible gasoline substitutes as well. We expect that  
8 ethanol and similar gasoline substitutes will have a major  
9 role to play in meeting the state's low carbon fuel standard  
10 as well as, of course, the federal renewable fuel standard.  
11 The vehicle cost for gasoline substitutes, ethanol, is  
12 relatively minor. A flex-fuel vehicle has an incremental  
13 cost of - I believe it's anywhere from \$100 to \$200. And it  
14 is now becoming standard on a lot of automaker's vehicles.  
15 For this category we have allocated \$7.5 million for  
16 advanced ethanol and gasoline substitutes production. And we  
17 are also allocating \$4 million for the expansion of E85  
18 dispensers and retail outlets.

19           The next subsection in the biofuels section is  
20 diesel substitutes. This includes both biodiesel and  
21 renewable diesel, which is fungible with conventional  
22 diesel. Biodiesel, we see that there are some engine  
23 concerns. A lot of fleets have said that they will accept  
24 no greater than B5, though many medium- and heavy-duty  
25 vehicle fleets have said that they will accept up to B20.

1 Only a very small number have said that they will provide  
2 warranty for up to 100 percent blends of biodiesel. As  
3 mentioned, renewable diesel is fungible with conventional  
4 diesel and so you don't have those engine concerns. And we  
5 also anticipate the infrastructure needs of renewable diesel  
6 being much less significant than for biodiesel. For diesel  
7 substitutes production we have allocated \$7.5 million for  
8 the next fiscal year's Investment Plan. And again this will  
9 cover both biodiesel and renewable diesel production.

10           The next subsection of the biofuels section is  
11 biomethane. This is a very low carbon feedstock that we are  
12 seeing primarily from waste-based feedstocks. There is a  
13 strong interest in these projects, which we have seen in  
14 both the quantity and the quality of projects that were  
15 proposed in our first solicitation for biomethane production  
16 facilities. This biomethane that is produced can serve a  
17 wide array of fuel pathways. The most obvious, of course,  
18 would be as a displacement for natural gas in natural gas  
19 vehicles. Biomethane can also, however, be used to generate  
20 electricity for electric vehicles or to produce renewable  
21 hydrogen through steam-methane reformation. So for the next  
22 fiscal year's Investment Plan we have allocated \$8 million  
23 for pre-landfill biomethane production facilities.

24           The next section of the Investment Plan is also  
25 somewhat new to this year's Investment Plan. We separate

1 medium- and heavy-duty vehicles into its own section. We  
2 felt this was appropriate given that medium- and heavy-duty  
3 vehicles constitute just four percent of California's total  
4 vehicle population but they consume more than 16 percent of  
5 California's transportation fuel and they produce more than  
6 16 percent of the states GHG emissions from the  
7 transportations sector. So for that reason these are  
8 excellent opportunities to provide vehicle incentives for  
9 early benefits.

10           For many of these vehicles both natural gas and  
11 propane are approaching price parity with diesel for certain  
12 applications if you look at the long-term costs of  
13 ownership. The goal for us is to reach a three year payback  
14 period for these vehicles. And that is the timeframe in  
15 which a lot of fleets, as they tell us, are looking to see  
16 if they can payback their higher upfront investments in  
17 natural gas vehicles and propane vehicles. For the next  
18 fiscal year's Investment Plan we have allocated \$11.5  
19 million for natural gas vehicles and \$3 million for propane  
20 vehicles. And these funds will be used to supplement the  
21 gaseous fuel buy-down program that Peter mentioned  
22 previously.

23           We also see that advanced technology medium- and  
24 heavy-duty vehicles are beginning to enter the market. The  
25 Air Resources Board through its Hybrid Voucher Incentive

1 Program provides up to \$40,000 for these vehicles that are  
2 at the deployment stage. Our \$7 million as proposed here  
3 will go towards the demonstration of new technologies that  
4 can meet new service needs.

5 The next category in the Investment Plan is  
6 innovative technologies, advanced fuels and federal cost-  
7 sharing. There is a wide array of opportunities that exist  
8 that are difficult to foresee and also that don't neatly fit  
9 into any of the fuel types that we have discussed so far.  
10 One example that we are investigating would be the creation  
11 of a small grants program similar to the Energy Innovative  
12 Small Grants Program that is run by the Energy Commission's  
13 Public Interest Energy Research Program. And that small  
14 grants program provides up to \$95,000 for hardware projects  
15 and up to \$50,000 for modeling projects. But, again, that  
16 is just one option. We have a number of opportunities that  
17 continue to become apparent to us.

18 For manufacturing, California has attracted a  
19 significant amount of venture capital for its advanced  
20 technologies and alternative fuels. But now we need those  
21 ideas to be more fully developed here and move into the  
22 manufacturing process here in the state. In previous years  
23 this allocation was provided specifically for electric  
24 vehicles and electric vehicle components but we are  
25 expanding it this year to include all alternative fuel

1 vehicles. And for that purpose we will allocate \$8 million  
2 in the next fiscal year's Investment Plan.

3 The next category, workforce training and  
4 development, is implemented with our partners at the  
5 Employment Development Department, the California Community  
6 Colleges system and the California Employment Training  
7 Panel. We have seen a significant demand for additional  
8 workforce training and that is the justification for our \$6  
9 million allocation for workforce training and development  
10 delivery. We are also allocating a quarter-million dollars  
11 each to both workforce training and development outreach and  
12 dedicated clean transportation workforce needs studies.

13 The final category of our Investment Plan is for  
14 ongoing market and program development. This includes \$1.5  
15 million for sustainability studies. This is focused  
16 primarily on the sustainability of our feedstocks for  
17 biofuels. We have allocated \$4 million for technical  
18 assistance and analysis and \$3 million for program  
19 measurement, verification and evaluation. And all three of  
20 these categories are needed to meet ongoing program needs.

21 This final slide is a brief summary of our  
22 allocations and concludes my presentation on the contents of  
23 the Investment Plan.

24 At this point I think we would be happy to take any  
25 clarifying questions. Or if there are no clarifying

1 questions, we will move into the public comment period. But  
2 let me first ask if there are any clarifying questions from  
3 anyone in the audience on what we have presented today.

4 (No response.)

5 Okay, seeing none, Pilar, has anyone on WebEx  
6 requested a clarifying question?

7 MS. MAGANA: No.

8 MR. SMITH: Okay. Well, then our next step will be  
9 to move to the public comment period of this workshop. We  
10 have collected a number of blue cards already. If you  
11 haven't filled out a blue card yet and would like the  
12 opportunity to speak, the blue cards are available at the  
13 table in the entranceway. If you could just make a note of  
14 your name, your affiliation and the brief topic that you are  
15 going to discuss. We would like to keep the public comment  
16 period to three to five minutes per speaker, if possible.  
17 And we would be particularly interested in hearing your  
18 thoughts on the contents of the Investment Plan, if you have  
19 suggested changes or if you think there is anything  
20 significant that we have not yet included. And Court  
21 Reporter requests that you provide a business card after  
22 you've spoken here, if you can provide it to him.

23 The first public comment is from Robert Garzee  
24 representing ETDC of Silicon Valley and the City of San  
25 Jose.

1           MR. GARZEE:   Thank you, Peter, Charles and Mike.  I  
2 spoke on March 7th at the last advisory meeting in  
3 Sacramento and brought up the concept of the Center of  
4 Excellence, which was brought up about a year ago as to  
5 having a location around the California area where centers  
6 work on different projects.  And we talked about things like  
7 workforce development, technology from Silicon Valley, we  
8 talked about the area of solar fueling of electric vehicles.  
9 And today I have delivered into the docket six letters from  
10 organizations in Silicon Valley supporting this Center of  
11 Excellence Project.  One from the City of San Jose Economic  
12 Development Department, one from De Anza College,  Breathe  
13 California, Silicon Valley Clean Cities, the Proterra Bus  
14 Company and Napa School Districts.  All of these are  
15 suggesting that the Center of Excellence be funded and the  
16 projects go forward.

17           Last Thursday we came to Sacramento and presented to  
18 Tim Olson and seven people an idea that we had presented a  
19 couple of years ago, which is why not bring private funding  
20 into the money the CEC has?  If you took \$108 million and  
21 added \$200 million you would have a lot more money to fund  
22 the projects that sometimes don't get enough allocation.  
23 And that meeting went for about two hours and I think was  
24 very eye opening to the companies out there that are willing  
25 to put in the funding to help from a private standpoint.



1 This company that we have worked with in Clean Cities in  
2 Silicon Valley has been doing this project of helping  
3 alternative fuels for many, many years and are willing to  
4 step up and do funding with the California Energy  
5 Commission.

6 We also talked a little bit about workforce training  
7 and the fact that there is a company called De Anza College  
8 which has been the premier trainer in automotive that would  
9 like to move forward. There is a technology called solar  
10 fueling of electric vehicles which not only handles large  
11 school buses but also handles small- and medium-sized  
12 vehicles like vans and pickup trucks. That technology drops  
13 the price of fuel from \$4.50 a gallon to 75 cents a gallon  
14 and then guarantees that price structure for 25 years. The  
15 school bus project, which is a retrofit project, includes a  
16 new battery technology from Silicon Valley that can drive  
17 that bus at a much less cost than is being done today.

18 So our submission is the number of letters to help  
19 recommend that the Center of Excellence move forward. Thank  
20 you very much.

21 MR. SMITH: A quick clarifying question. You said  
22 you sent that to the docket. Could you perhaps send it to  
23 me as well and make sure I have it well in time?

24 MR. GARZEE: I will.

25 MR. WARD: And, Bob, you mentioned a company, you

1 didn't mention the name of the company. You might want to  
2 put that in the record, too.

3 MR. GARZEE: The name of -

4 MR. WARD: I think it might have been -

5 MR. GARZEE: Our company or the solar fueling  
6 company?

7 MR. WARD: Well, I thought you mentioned a company  
8 that you met in Sacramento with?

9 MR. GARZEE: Oh, I'm sorry. We met with the  
10 California Energy Commission in Sacramento.

11 MR. WARD: Right.

12 MR. GARZEE: And with Tim Olson to discuss, and we  
13 brought from Dallas and Mississippi a company called  
14 Government Capital.

15 MR. WARD: Government Capital, that's the one I  
16 thought. Okay.

17 MR. GARZEE: Yes. And they have been in business  
18 for 27 years and done over a billion dollars in financing.

19 MR. WARD: That's the one I thought you might want  
20 on the record.

21 MR. GARZEE: Okay, thank you.

22 MS. MAGANA: Okay, Jon Van Bogart from Clean Fuel  
23 USA.

24 MR. VAN BOGART: I have a couple of slides.

25 MS. MAGANA: Okay, we will set that up and first go

1 to James Robbins of Business Cluster Development.

2 MR. ROBBINS: Thank you very much. I would like to  
3 speak today concerning the innovation section of your  
4 Investment Plan. And I would like to generally support the  
5 comments that were made by Bob Garzee as well. My name is  
6 Jim Robbins and I am with Business Cluster Development. I  
7 would like to spend just a minute to talk about my  
8 qualifications to speak to this innovation issue.

9 For 15 years I ran the Environmental Business  
10 Cluster, which was a clean tech commercialization center in  
11 San Jose, California. When I left that two years ago it was  
12 the largest private clean technology commercialization  
13 center in the United States. In 2007 a study in the United  
14 Kingdom studied 110 clean tech commercialization centers  
15 around the world and found that the Environmental Business  
16 Cluster successfully commercialized more technologies than  
17 any of the other centers. I also have commercialized  
18 technology under contract to the California Energy  
19 Commission.

20 What I would like to talk about is the need for a  
21 center that supports innovation and clean technology in this  
22 state. I think it's great that the California Energy  
23 Commission supports individual projects and it identifies  
24 areas where technology development is needed to be done.  
25 But there is a need for an ongoing location to support this

1 kind of effort, including a place where people can do their  
2 demonstrations and testings regardless of who they are and  
3 what they want to test. That kind of center is being built  
4 in San Jose. It is a \$12 million clean technology  
5 demonstration center. It's got \$9 million of funding from  
6 the City of San Jose. It has an approved EDA \$3 million  
7 funding that will be forthcoming as soon as the budget is  
8 passed in Washington, DC.

9           Currently, the primary economic development method  
10 for the federal government is innovation clusters. I know  
11 you are familiar with these at the California Energy  
12 Commission. An example is the \$135 million Energy  
13 Efficiency Center that was recently awarded by the  
14 Department of Energy. I participated with Lawrence Berkeley  
15 Lab in the development of the proposal for California. We  
16 did not win. One of the things that we were told was the  
17 reason we didn't win was because the center didn't actually  
18 exist, it was a proposal.

19           In clean transportation we do have such a center  
20 operating, the Electronic Transportation Development Center.  
21 It has been operating for a number of years. Lawrence  
22 Berkeley National Lab is a participant, the Mineta  
23 Institute, the City of San Jose. And they are building this  
24 center that I mentioned to be able to support projects from  
25 all around Northern California in clean transportation. But

1 is has no support from the California Energy Commission.  
2 Now you have a plan that is cutting back your innovation  
3 support from \$8 million to \$3 million. That is entirely  
4 insufficient to support innovation on a long-term basis  
5 separate from individual projects. And I think it's  
6 important to recognize the need for both.

7 All you have to do is look at the Stem Cell Research  
8 Institute here in San Francisco to see what the state can do  
9 when it wants to support innovation. And I would maintain  
10 supporting innovation is not about cash matches. Those  
11 matches are fine. But that is a follow-on process, follow  
12 the leader, follow the US government. When they decide to  
13 fund, then the state will fund. I think we all know that  
14 that is not how California created its position of  
15 leadership in the environmental segment, by following the  
16 federal government. We have acted independently, we have  
17 been the leaders, we've shown how to innovate. You've got  
18 the innovation hub of the United States in Silicon Valley  
19 and the Bay Area and you are not supporting a long-term  
20 solution for excellence and innovation.

21 I will give you just a current example for the  
22 federal government. They have an innovation accelerator  
23 grant currently outstanding and advertised. They are going  
24 to fund 20 innovation accelerators around the United States  
25 that support innovation. The key to that is regional and

1 state support. We have a center that can apply for those  
2 funds, the Electronic Transportation Development Center, but  
3 we have no indication of state support.

4           The California Energy Commission should be the  
5 leader in providing this kind of support. And you need to  
6 recognize the biggest problem I had when I ran the  
7 Environmental Business Cluster was my companies finding a  
8 place to demonstrate their technology. And I ran into  
9 numerous situations where the California Energy Commission  
10 was paying for the testing but we couldn't find a location  
11 inside the State of California to do the testing. And when  
12 we moved outside of the State of California then usually the  
13 California Energy Commission wouldn't release their funds.  
14 So we need a center. That center can also support workforce  
15 training, interns can be put to work on the demonstration  
16 projects. So the training and the internships can occur  
17 right in the same location.

18           So I urge you, number one, to fund your current plan  
19 for the Center of Excellence. If you can't do that, move it  
20 forward into your new plan and maintain and protect that  
21 concept and increase your funding for innovation. Three  
22 million dollars is not enough to be able to support this  
23 kind of work. You need to be a leader.

24           I understand that many of the problems, I've been  
25 told, are legal around this concept. I'm a former attorney,

1 I worked for the State of Massachusetts for the Chief  
2 Justice of the Trial Courts, I worked for federal government  
3 as an attorney for the Chief Justice of the US Supreme  
4 Court. I understand that attorneys can support innovation  
5 and understand how to support solutions or they can view  
6 their job primarily as raising issues and problems that  
7 people should be wary of. Solve your legal problems.

8 Many, many states have Centers of Excellence in  
9 clean technology and the State of California has centers,  
10 like the Stem Cell Center and others, that show that it can  
11 be done in this state. So please continue to support this  
12 effort, move it into your new plan and continue to provide  
13 financial support. Thank you.

14 MS. MAGANA: Okay, now we will have Jon Van Bogart  
15 from Clean Fuel USA.

16 MR. VAN BOGART: Good morning, everyone. Thank you  
17 for the opportunity to kind of give an update on what is  
18 happening within the propane industry. I also gave a  
19 presentation at the March 7th meeting in Sacramento. So  
20 some of these slides I will go over rather quickly because  
21 some of these are the same slides. And then I will get to  
22 some of the added slides for the Investment Plan.

23 Clean Fuel USA received a grant for \$12.3 million  
24 dollars for infrastructure funding throughout the United  
25 States, also for workforce development and vehicle

1 deployment strategies for propane. It includes 184 stations  
2 nationwide. Here in California there are three key market  
3 cities, Sacramento/East Bay, San Diego and Los Angeles.  
4 Each one of the 17 key market cities will have a clean fuel  
5 service center which will provide education and training for  
6 service technicians for not only propane but CNG fuel as  
7 well.

8           This is what the program is going to look like when  
9 it is fully implemented. This is actually phase two of a  
10 phase three and four type project. The Energy Commission  
11 originally funded 24-hour public access refueling in  
12 California in their infrastructure program in years  
13 previous.

14           These are our two partners here in California that  
15 we partnered with, our propane marketers that have been in  
16 the propane industry and motor fuel industry since 1936.

17           This is an overview of some of the training that is  
18 included in the project. Rio Hondo College is one of the  
19 sponsors through Texas State Technical College to develop an  
20 academic program. I just recently learned that Rio Hondo  
21 College now have accredited degrees in alternative fuels,  
22 first of their kind. I met with the State of California and  
23 he has one in alternative fuels and it looks like he is now  
24 going to be getting one in EV technology and battery  
25 technology as well. So education and training is very, very



1 important.

2           We have a website for our Clean Start Program as the  
3 stations start to come online. In years previous there  
4 weren't a lot of propane vehicles available. Because of  
5 Memorandum 1A in 1995, when EPA changed the rules for  
6 certified technology, that really pushed back alternative  
7 fuels of all kinds for vehicle conversions. Since then the  
8 industry has rebounded. We have an announcement this last  
9 year from General Motors. They are now producing OEM  
10 factory propane and CNG vehicles starting in 2012. Today we  
11 have OEM vehicles from Blue Bird on school busses, Collins  
12 for school buses, also workhorse step-van chassis such as  
13 UPS and FedEx use. Freightliner is now going to be putting  
14 the new GM 8.0 liter engine in their medium- and heavy-duty  
15 trucks. That is going to be available probably in Fall  
16 2012, it could be a 2013 model year. Right now the timeline  
17 is not locked in stone but that product will be available  
18 also in the Thomas School Bus platform. Many of you are  
19 familiar with Roush Industries, they are an engineering  
20 company. They are a Tier 1 supplier of propane for Ford  
21 products. And IMPCO is the world's largest fuel station  
22 provider for both propane and CNG vehicles worldwide. They  
23 are working on fuel systems for both propane and CNG for 50  
24 state certification, which they haven't had in quite a few  
25 years. So we are seeing a lot of fleet excitement and a lot

1 of growth within the propane industry for vehicles.

2           These are some of the vehicles that are available  
3 today with the GM 8.0 liter and 6.0 liter engines. This is  
4 our school bus platform. We will be adding the Thomas  
5 School Bus to this mix. A lot of school districts down in  
6 Southern California that have access to buy-down funding  
7 from South Coast, also of the state school bus replacement  
8 program, are buying a lot of propane buses because these  
9 propane buses fit a niche in their fleet that no other bus  
10 fits in that it is a special need, the conventional style  
11 bus and the van cutaway. There is no other alternative fuel  
12 vehicle available in these bus classifications. So propane  
13 is filling that niche.

14           This is some of the technology. We will go over  
15 this real quick. This is the new 6.0 liter engine. This is  
16 seamless technology. The system was developed in Millbrook,  
17 England at GM's Global Alternative Fuels Facility so this  
18 fuel system has gone through every step of the process from  
19 development to the showroom that any gasoline or diesel fuel  
20 system goes through. The fuel tanks replace the gasoline  
21 tanks so it is a virtual replacement, which means there is  
22 no augmentation to the frame or to the chassis or to the bus  
23 body, which comes in handy for fleets when they go to resell  
24 that vehicle. There is no change to the vehicle so it  
25 increases the resell value.

1           On the left, these vehicles are available now. GM  
2 is making the announcement on some of the other vehicles on  
3 the right, which is there pickup trucks for utility bed.  
4 Also on the right-hand side their pickup trucks and vans are  
5 coming online in 2012, it looks like. This is a product  
6 that looks like it may be coming online sooner rather than  
7 later. This is a very popular delivery platform, Isuzu-GM  
8 cab-over, it's called their NPR series. This is the  
9 Freightliner product that will be coming online in late  
10 2012. Also this new GM 8.0 liter engine is going to be -  
11 we've hooked with Capacity of Texas and also the Propane  
12 Education and Research Council. This is a fully funded  
13 project. It looks like in 2012 this product will be coming  
14 online, this will be a factory port vehicle. We are also  
15 looking at the 6.0 liter integration with this with a PEV.  
16 So you have a plug-in electric hybrid alternative fuel port  
17 tractor. The next phase of that would be to possibly take  
18 that into the over-the-road on school buses or transit buses  
19 because we know a 6.0 liter is plenty enough power to marry  
20 up with a hybrid technology.

21           When you are a fleet you are always worried about  
22 what is it going to cost me to run on an alternative fuel.  
23 So this chart gives you a cost per mile driven on both  
24 gasoline, diesel and propane. And, as you can see, propane  
25 has a significant cost advantage even with the 50 cent -

1 this includes the 50 cent federal tax credit. When you take  
2 that out you're still under 20 cents per mile driven on  
3 propane. So if you take the incentives away propane really  
4 does have one of the lower thresholds financially for fleets  
5 to get into the alternative fuel for their fleets.

6 Propane is the oldest alternative fuel. Globally  
7 there is over 13 million vehicles running on propane  
8 consuming nearly 10 billion gallons. You might say  
9 displacing nearly 9 billion gallons of petroleum fuel.  
10 There has been a lot of recent activity with a fuel called  
11 dimethyl ether. Dimethyl ether can be made from Syngas,  
12 also biomass, black liquor, other resources for that fuel.  
13 This fuel is handled a lot like propane, it's reactive like  
14 propane. So the refueling infrastructure, the tanks,  
15 storage, dispensers, things of that nature, the fuel systems  
16 are very, very similar to propane. This is going to give  
17 propane what we call a bio-propane element much like E85 and  
18 ethanol has done for gasoline in spark-ignited engines.  
19 There are current projects in Asia and Europe and now in the  
20 United States with CalStart and Oberon Fuels with dimethyl  
21 ether for over-the-road transportation projects.

22 At Clean Fuel USA we are looking at infrastructure  
23 development for certified refueling dispensers and tanks so  
24 when fleets go to deploy this fuel into the marketplace they  
25 are not going to run into regulatory issues with fire

1 marshals and things of that nature. All the regulatory  
2 statutes will be fulfilled. So we are taking a look at the  
3 innovative technologies and advanced fuel funding that is  
4 currently available under the 118 Program. We know that  
5 there is \$8 million that has yet to have been released. We  
6 that it has to be leveraged with some federal funding. So  
7 we are hoping to look at some projects for infrastructure  
8 certification, RD&D really, with certification being the end  
9 game on those products.

10           Why propane? These are some of the advantages of  
11 propane. It is still the most widely available and lowest  
12 cost domestically produced alternative fuel. One of the  
13 things about propane, it's made from two different sources.  
14 It used to be 50/50 petroleum-based and natural gas.  
15 Natural gas liquids form under the ground when they are  
16 pulling methane out, a lot of that is wet gas. Propane is  
17 part of that mix, it forms naturally under the ground. In  
18 recent years it has gone to 55/45. It looks like very soon,  
19 in the next few years, it's going to go to 65 percent  
20 natural gas and only 35 percent from crude oil. I have  
21 another slide later, but by 2015 the United States is going  
22 to be exporting 1.5 billion gallons of propane, which is a  
23 domestically produced, pretty clean alternative fuel. That  
24 would be a tragedy if we don't find resources for that clean  
25 resource.

1           The current Investment Plan, we are feeling the  
2 love. When we first started out with \$2 million, we went to  
3 \$2.3 million. We know there were some haircuts in there.  
4 The current plan has \$4.5 million in there. We have seen  
5 this because we have brought more vehicles into the  
6 marketplace, there are a lot of fleets asking for propane.  
7 The Energy Commission challenged the propane industry some  
8 years ago that we would love to fund some of your projects  
9 but we need more certified technology. And we now have  
10 that.

11           When you take a look at the gaseous fuel categories  
12 between propane and CNG - which I like to call our  
13 hydrocarbon cousin, if you will - there is about 19.5  
14 million in there for natural gas and only \$4.5 million for  
15 propane. We are getting very close to having the same level  
16 of vehicle platforms available. So what we are taking a  
17 look at is making some suggestions, if we can, on revising  
18 some of the funding. If you took less than 10 percent of  
19 the current funding level that would be \$9.6 million. And  
20 how we would like to see that distributed would be a little  
21 bit at infrastructure with a 70 percent cost share from the  
22 industry. Light-duty vehicles, there is a lot of product  
23 that is online now with Ford, a lot more coming online with  
24 General Motors. Seven thousand dollars is a pretty good  
25 incremental cost, or buy-down cost. Medium- and heavy-duty

1 incentives, it costs a little bit more on those vehicles.  
2 So we are suggesting a \$10,000 cost share. And also this  
3 last category here of propane research, development and  
4 deployment strategies for new vehicle platforms, this is one  
5 of the critical elements.

6 Now that GM is in the game and Roush is in the game  
7 it still does take several million dollars to bring a 50-  
8 state certified vehicle to the marketplace. This would  
9 really help not only the propane industry, I know it's going  
10 to help the EV industry, natural gas. When this type of  
11 funding is available you see significant changes with the  
12 amount of vehicles that are available.

13 California has been a net exporter for the last few  
14 years of propane, mainly due to the Elk Hills discovery.  
15 And, as I mentioned, 1.5 billion gallons is projected to be  
16 exported by the United States with regards to Shell and  
17 other discoveries. So we have the fuel, we have the  
18 vehicles, and I think justifiably we need to have some  
19 additional support, also on the federal side, and here from  
20 the Energy Commission.

21 This is my contact information and I would be happy  
22 to answer any questions if you have any.

23 (No questions.)

24 Okay, thank you.

25 MR. SMITH: Thank you.

1 MS. MAGANA: Okay, next we have Eric Bowen from  
2 California Biodiesel Alliance.

3 MR. BOWEN: Good morning, everyone, and thank you  
4 for the opportunity to address the panel this morning. I am  
5 Eric Bowen, Chairman of the California Biodiesel Alliance.  
6 We are the biodiesel industry's trade association here in  
7 California and we work very closely with the National  
8 Biodiesel Board, the national biodiesel industry  
9 association. I am also the Executive Director of Business  
10 Development and Legal Affairs at Renewable Energy Group, or  
11 REG, headquartered in Ames, Iowa. REG is the largest  
12 producer, distributor and marketer of biodiesel in the  
13 United States. I have been in the biodiesel industry and in  
14 and around biodiesel now for probably 10 years.

15 I really want to address two key points today, the  
16 first having to do with renewable diesel and the second  
17 having to do with the lack of infrastructure funding for  
18 diesel substitutes. First let me say with regards to  
19 renewable diesel that I am a supporter of renewable diesel,  
20 my company works on renewable diesel, I have worked with  
21 renewable diesel technology companies, petroleum majors, all  
22 sorts of people, about renewable diesel and it is a  
23 technology that we will very likely bring to market. I have  
24 found in my work with the California Resources Board and the  
25 California Energy Commission that because renewable diesel



1 is a new field, an emerging field with lots of different  
2 fuels under that umbrella, that there is often confusion  
3 about what is renewable diesel. And thus when we speak  
4 about it publicly we make statements that, to someone who  
5 wasn't fully educated, may be misleading or not fully  
6 accurate.

7           So why don't we start with, What is renewable  
8 diesel? Renewable diesel broadly defined is going to be any  
9 diesel substitute fuel made from a renewable feedstock  
10 source. And with that broad definition biodiesel is  
11 actually a subcategory of renewable diesel. As federally  
12 defined, they define biodiesel as a diesel substitute, it's  
13 the ester-based, and renewable diesel is all other diesel  
14 substitutes that are non-ester-based. So you will often  
15 hear and see federally non-ester renewable diesel.

16           There are three main types of renewable diesel that  
17 I think the California Energy Commission needs to be aware  
18 of and think about when thinking about renewable diesel. The  
19 one that I know you most commonly think about is hydro-  
20 treated renewable diesel, Neste UOP style hydro-treated  
21 renewable diesel. The second one is what I would call  
22 biomass to liquids. So this is, you know, any of your old  
23 gas to liquids technology. It used to be coal to liquids.  
24 But you can do the same thing with biomass. You can take  
25 woody biomass, gasify it and then turn it into a liquid fuel

1 and have a diesel substitute, not hydro-treated, not  
2 biodiesel but a biomass to liquid diesel substitute. And  
3 there are a whole number of companies, some quite prominent,  
4 working on such technologies. Then the third main type of  
5 renewable diesel is what I would call biotech renewable  
6 diesel. A leading example here is probably Amarus (ph) over  
7 in the East Bay, where they are taking sugars, fermenting  
8 them in a biotech way, the bugs are excreting a number of  
9 things, one of which is basically a diesel blend stock and  
10 that becomes part of renewable diesel. There are other  
11 types of renewable diesel as well but those are really the  
12 three main ones that I think CEC needs to be paying  
13 attention to.

14           Each of those types of renewable diesels are wildly  
15 different. And each of them may or may not be drop-in  
16 fuels, may or may not be miscible with petroleum diesel, can  
17 be blended at different levels, are going to have different  
18 issues in underground storage tanks, are going to have  
19 different issues in vehicles. And so the federal government  
20 is presented with this same problem. The Navy, who is  
21 leading a lot of this renewable distillate work because of  
22 their initiatives, has begun to create subcategories within  
23 renewable diesel that I would encourage the Energy  
24 Commission to think about.

25           The most important one and the leading one is the

1 hydro-treated renewable diesel or HRD. So when we talk  
2 about HRD everyone understands what that means, and that is  
3 the most miscible of the renewable diesels and it is the one  
4 most commercialized, though still there are only 75 million  
5 gallons of production installed in the United States in one  
6 plant down in Louisiana and it has only produced six million  
7 gallons to date. So there is not a lot of it available but  
8 there are some high profile projects like the Darling-Valero  
9 project also proposed for Louisiana and then obviously  
10 Neste's facilities in Europe and Asia. But I do think when  
11 speaking about it, both in all of our written documents as  
12 well as publicly, particularly when making statements with  
13 regards to its drop-in or miscible status, it's very  
14 important that we specify we are talking about hydro-treated  
15 renewable diesel so that people don't think that their  
16 renewable diesel, which might be a biomass to liquid or  
17 might be a biotech renewable diesel, is going to get the  
18 same benefits. Because those fuels haven't been fully  
19 tested and are fully understood. So that's the first thing  
20 I want to state with regard to renewable diesel.

21           The second thing I want to state with regard to  
22 renewable diesel is I don't think it is as drop-in or as  
23 miscible as most people currently believe today. And this  
24 is informed by conversations I've had with the Water Board,  
25 conversations going on at ASTM. People are still trying to

1 figure out what renewable diesel is. The Water Board is  
2 concerned about putting in underground storage tanks without  
3 appropriate testing, all the same MTBE issues that you are  
4 aware of, all the same work that biodiesel has had to go  
5 through over the last number of years that you are aware of.  
6 But you should be aware that the Water Board has not  
7 concluded that renewable diesel can go into underground  
8 storage tanks yet without needing to through all the same  
9 verification that any other transportation fuel would have  
10 to go through to be in an underground storage tank. And you  
11 should obviously talk to them directly.

12           ASTM does not yet have a definition of renewable  
13 diesel. And there is actually a fairly strong raging debate  
14 at ASTM with regard to renewable diesel. And depending on,  
15 you know, which energy major falls down on which side of the  
16 renewable diesel debate - they are taking different  
17 positions on how renewable diesel should be defined and  
18 should it be narrow, should it be broad, and what does it  
19 mean. So again, I just want to make sure that people are  
20 well informed so that we can be accurate in our statements  
21 and we can have crispness in our thinking.

22           Let me transition from that to the second point,  
23 which is the lack of funding in the currently proposed  
24 Investment Plan for infrastructure for diesel substitutes.  
25 And I don't know if all of you or some of you might have

1 been in the CEC meeting up in Sacramento last month where I  
2 was asked to speak on this topic. I apologize if this is  
3 repetition for some folks but please do follow-up with  
4 Commissioner Boyd and others. Mr. Ward, I know you were in  
5 and out of that meeting so I don't remember if you were  
6 there for my presentation or not.

7           The fact that we are spending \$24 million on  
8 infrastructure for plug-in electric vehicles, hydrogen and  
9 natural gas - and I've got no problem with those fuels - and  
10 spending zero on liquid diesel substitute fuels I think is a  
11 huge mistake for the State of California. And whether it's  
12 a renewable diesel or a biodiesel, those fuels are in  
13 desperate need of infrastructure support within the State of  
14 California. I am not remembering the exact number but it is  
15 somewhere around there are 50 bulk terminals for liquid  
16 petroleum fuels in the State of California. And I believe  
17 100 percent of those terminals have storage and blending  
18 infrastructure for gasoline substitutes, ethanol, and not  
19 one has storage or blending infrastructure for diesel  
20 substitutes, biodiesel or renewable diesel. And both of  
21 those fuels need to enter the petroleum supply stream  
22 because generally speaking they are always going to be  
23 blended with petroleum diesel with very few exceptions.  
24 There is obviously, as you are well aware, a strong pure  
25 biodiesel or B100 community and there will probably be some

1 renewable diesel used that way as well.

2 But, you know, 95, 98, 99 percent of diesel  
3 substitutes, biomass-based diesel substitutes, are going to  
4 be blended with petroleum diesel. And they can't currently  
5 get into the petroleum supply stream upstream at the bulk  
6 level. Right now it is all done downstream at the jobber  
7 distribution level, which adds about a quarter per gallon to  
8 that blended fuel because of the extra handling and  
9 transportation associated with that versus a couple of  
10 pennies if it were done at the level terminal level, at the  
11 bulk level. So I know in prior investment funds there was  
12 some money available for diesel substitute infrastructure.  
13 I don't believe any of that money has actually gone out yet.  
14 But none of that money actually went at the critical level.  
15 Some of that went to biodiesel plants for storage on their  
16 sites, some went to jobbers for storage at jobber terminals,  
17 but none of it went to the big petroleum terminals, which is  
18 where it is needed. And you didn't receive any proposals  
19 for that, so I'm not fully blaming you.

20 I mean, I think many of you have also heard me say  
21 with the deadlines you put forward on that last funding plan  
22 it was impossible to get a funding application in because  
23 when you are working with folks like Kinder Morgan it takes  
24 one or two years just to put together a proposal in order to  
25 get it in. So you need lots of lead time to work with Exxon

1 and Tesoro and Kinder Morgan and New Star, the people who  
2 control all the bulk infrastructure. They want to do it but  
3 the system is not designed to facilitate allowing them to do  
4 it. And there is a critical need today and there is going  
5 to be an even more critical need tomorrow for this bulk  
6 infrastructure. So I would really strongly encourage the  
7 Energy Commission to look at that infrastructure pool - and  
8 you've got, you know, the electric, the hydrogen, the  
9 natural gas and propane, there is a big pool of  
10 infrastructure there - and either collapse it all into one  
11 and let people compete on their greenhouse gas reductions -  
12 because I know the diesel substitutes will do exceedingly  
13 well and probably will beat all of those - or carve some out  
14 and allocate it in for renewable diesel and biodiesel, which  
15 is the same infrastructure supporting.

16           You know, again if there are 50 terminals, each of  
17 these terminals needs one to three million in upgrades.  
18 This is not a lot of money. Having matching funds from the  
19 CEC will grease the wheels and greatly help this go forward.  
20 There is a lot of cost with steel, with Sequa (ph), with  
21 engineering work that needs to get done. The longer we wait  
22 to get started, the longer it's going to take for us to have  
23 more cost effective low carbon diesel substitutes in our  
24 supply stream.

25           The final point I want to make on this is sort of an

1 update on where biodiesel is at and how biodiesel and  
2 renewable diesel relate. Because I know Commissioner Boyd  
3 in particular, and I believe others, have had the concern  
4 of, Well, if we put infrastructure funding in that supports  
5 biodiesel isn't that going to be lost because how long is  
6 biodiesel going to be with us? So first off, with RFS2  
7 demand for biomass-based diesel, which is 800 million  
8 gallons this year and one billion gallons next year, the  
9 industry is currently producing at a run rate just shy of a  
10 billion gallons per year. So we've got a lot of this stuff  
11 in the country.

12           Virtually none of it is coming to California. We  
13 are not even proportionate on our diesel use. We're the  
14 first or second largest of diesel in the country and we are  
15 probably, you know - well, I won't say we're as bad as on  
16 our education spending, you know, in the 50 category - but  
17 we are probably in the 30s or 40s on our biodiesel use. And  
18 it is because of this infrastructure problem by and large.  
19 And biodiesel is actually, in addition to reaching these  
20 large commercial production rates - and again, 30 to 50  
21 percent of that is waste-based biodiesel, this is not a soy  
22 world, this is not a - this is a waste-based biodiesel, low  
23 carbon, you're reducing carbon intensity 80 to 90 percent  
24 compared to petroleum-based diesel. And it is a drop-in  
25 fuel.



1           ASTM changed the definition of diesel nationally,  
2 the D975, up to five percent biodiesel is completely  
3 miscible, completely drop-in. Most of the biodiesel that  
4 comprises this just shy of a billion gallon per year run  
5 rate that we are at that I just mentioned is going into low  
6 blends - anywhere between B2s and B11s - and it just  
7 extending the diesel supply, it's cleaning up the diesel  
8 supply, it's reducing carbon emissions. And it is not going  
9 on in California. And it should be. And we are going to  
10 have a hard time achieving our low carbon fuel standard  
11 goals and our fuel diversification goals if we don't help  
12 put the infrastructure in place to support the fuels that  
13 are available and that are clean and low carbon.

14           So in summary, renewable diesel and biodiesel are  
15 compatible fuels. I think biodiesel will be with us for a  
16 long time. Renewable diesel will complement biodiesel, they  
17 will complement each other, they will both be blended into  
18 petroleum diesel. They need the same infrastructure at the  
19 bulk terminal. We need to start spending the money to put  
20 this infrastructure in. There is lots of biodiesel  
21 available today that could take advantage of that  
22 infrastructure and there will be lots of biodiesel and/or  
23 renewable diesel tomorrow that can take advantage of the  
24 same infrastructure. But if the infrastructure is not there  
25 those fuels will have a hard time entering our marketplace.

1 Thank you for your time.

2 MR. SMITH: A quick question, if I may, Eric. You  
3 mentioned, of course, the federal RFS2 demand. So  
4 presumably California has a share of that but other states  
5 do as well. I was just curious about whether this issue is  
6 faced by other states and how they are proposing to deal  
7 with the increased RFS2 demanded biodiesel.

8 MR. BOWEN: So I appreciate the question. The RFS2  
9 program requirements are allocated amongst obligated  
10 parties, as I'm sure you know. Those obligated parties can  
11 meet those requirements in any particular part of the  
12 country that they so choose. So none of the fuel has to  
13 come to California. And what's happening is that, as you  
14 would expect in a marketplace, the obligated parties are  
15 interested in the lowest cost of compliance. So the lowest  
16 cost of compliance is occurring in areas where there is the  
17 most biodiesel infrastructure and the most logistics support  
18 to allow for low cost blending of biodiesel into petroleum  
19 diesel.

20 With current RIN pricing, the RFS2 compliance  
21 currency, biodiesel is significantly cheaper than petroleum  
22 diesel. So quite frankly the industry is producing as much  
23 as it can because the demand is there because it's lower  
24 priced than petroleum diesel. And every time biodiesel has  
25 been cheaper than petroleum diesel demand is almost

1   limitless. It certainly exceeds the production capacity and  
2   exceeds the available feedstocks.

3               So the states that were historical biodiesel users,  
4   Iowa, Minnesota, Illinois, Texas, where they have  
5   infrastructure throughout the entire supply chain - there  
6   are biodiesel plants making biodiesel locally, there are  
7   terminals with biodiesel storage and rack blending, there is  
8   a jobber community familiar with it, there is a diesel user  
9   community that has been using it for years - the vast  
10  majority of biodiesel is going into those marketplaces. The  
11  companies that have operated in those marketplaces are then  
12  also taking it to nearby marketplaces where they can do  
13  another B5 in a neighboring state and leverage off the  
14  infrastructure they already have, and it's sort of growing  
15  out that way.

16              So if you sort of looked where biodiesel is mainly  
17  consumed today it's going to be in the center of the  
18  country, Texas up through the Great Lakes. Oregon is an  
19  exception because it has a mandate. They consume a lot of  
20  biodiesel up there for the size of their state. New England  
21  is somewhat of an exception, they have a bioheat mandate up  
22  there. So during the winter they use a lot of biodiesel in  
23  their bioheat. And what you've found is state-specific  
24  incentives or programs or policies are attracting the RFS2  
25  demand. And California has the potential for LCFS to do

1     that. But because LCFS has a slow ramp and because we don't  
2     have any infrastructure the RFS2 demand for biodiesel has  
3     gone to other states.

4             MR. SMITH: Got it. Thank you.

5             MR. WARD: Eric, I had a couple of questions for  
6     you, if I could real quickly. The California biodiesel  
7     production numbers, can you give us an estimate of what  
8     capacity is and what is being produced now, currently?

9             MR. BOWEN: Yes. I would give you a range of 50 to  
10    75 million gallons of capacity. The largest producer in the  
11    state, as I'm sure you're aware, will be Crimson Renewables  
12    in Bakersfield. They took their plant down to do some  
13    upgrades and are bringing it back up, I believe, this month.  
14    And I would expect them to be producing at a run rate of,  
15    you know, 20 million gallons per year by the end of this  
16    year. The second largest plant - there are actually two  
17    plants with the same capacity, Community Fuels in Stockton,  
18    which is a 10 million gallon per year plant, and IWP in  
19    Coachella, which is also a 10 million gallon per year plant.  
20    Both of those companies have been producing for a long time  
21    and are producing, I believe, at a fairly good clip. But I  
22    don't have specific numbers that I can share with you. I'm  
23    sure if you called them they would be happy to share.

24             So if you take production capacity of those three  
25    that is 50 million gallons right there. Though, again,

1 Crimson is not producing today and I don't know if IWP and  
2 Community are producing at their capacity, at the 10 million  
3 gallons per year each or if there is something less than  
4 that. I would suspect they are probably somewhere closer to  
5 50 to 80 percent of their stated production capacity, if I  
6 had to guess.

7 MR. WARD: So 20 for Community, 10 for -

8 MR. BOWEN: Sorry, 10 for Community -

9 MR. WARD: 20 for Crimson, 10 for Community and 10  
10 for IWP?

11 MR. BOWEN: Yes.

12 MR. WARD: That's 40?

13 MR. BOWEN: So Community is a - sorry, Crimson is a  
14 30 million gallon per year capacity plant. But I believe  
15 they will be producing at closer to 20 million gallon per  
16 year run rate by the end of this year.

17 MR. WARD: I see.

18 MR. BOWEN: They will get to 30 eventually.

19 MR. WARD: Okay and -

20 MR. BOWEN: So that's 50. And then there is a  
21 smattering of other plants, UKIO (ph), New Leaf in San  
22 Diego, Blue Sky across the bay, that are all sort of, you  
23 know, half a million to two million gallon per year run  
24 rates, Biodiesel Industries out of Port Hueneme. So if you  
25 add all of those up you get, you know, somewhere between an

1 additional 10 to 20 depending on what you think it is, which  
2 is where I get to my - you're sort of in a 50 to 75 range on  
3 potential production capacity.

4 We've never produced that much as a state. I think  
5 the most we've probably ever produced as a state - and this  
6 is just an educated guess at this point - would be the low  
7 10s. So call it, you know, 15, 20, 25 million gallons per  
8 year.

9 MR. WARD: All right.

10 MR. BOWEN: It's probably the most we've ever  
11 actually produced in this state. We believe we have about  
12 75 million gallons of waste feedstocks available in this  
13 state.

14 MR. WARD: How many?

15 MR. BOWEN: About 75 million gallons, mostly used  
16 cooking oil and animal fats. And so we believe that our  
17 installed production capacity and our available in-state  
18 waste feedstocks are actually a pretty good match for each  
19 other. They haven't rationalized yet to marry up entirely.  
20 But they are a pretty good match for each other.

21 And then, you know, back in 2007 when we had a  
22 fairly well functioning biodiesel market California was a  
23 pretty large importer of biodiesel, both from the Midwest as  
24 well as from overseas. And if we had a functioning  
25 biodiesel market, which I believe we will again some day and

1 it will become even faster with the Energy Commission's  
2 assistance on infrastructure funding, there is tens of  
3 millions of gallons of biodiesel that can immediately come  
4 to California from the Midwest - and I'm sure from overseas  
5 as well - if the price point made sense and there was  
6 sufficient demand.

7 MR. WARD: My second question has to do with the  
8 retail infrastructure. USTs, the underground storage tank  
9 issue.

10 MR. BOWEN: Yes.

11 MR. WARD: I know you're familiar with it. The  
12 Water Resources Control Board has given a three year waiver.

13 MR. BOWEN: Yes.

14 MR. WARD: Where is the industry on the third party  
15 testing for the B20 underground?

16 MR. BOWEN: I appreciate the question. And it  
17 reminds me that when I was speaking about the infrastructure  
18 funding earlier I think it would be good to make some of  
19 that available as well for UST work for some of the  
20 manufacturers that need to complete some certifications.

21 But to answer your question directly, most of the  
22 manufacturers have self-certified most of their equipment as  
23 compatible with biodiesel and biodiesel blends. UL as a  
24 fairly slow-moving, consensus-oriented organization has yet  
25 to get around to any real meaningful testing on biodiesel

1 compatibility that would satisfy California regulations with  
2 regard to third party verification. Independent of that,  
3 USEPA is working on updating its underground storage tank  
4 regulations. And it is my understanding as part of those  
5 updates they are also updating for newer fuels, including  
6 biodiesel. And that there may be an opportunity - emphasis  
7 on may, because it is up to the Water Board - there may be  
8 an opportunity for California to harmonize with the federal  
9 underground storage tanks and still protect our groundwater  
10 in a way that we need to do, that makes us feel comfortable,  
11 but gets us around the requirement for UL's third party  
12 testing by updating our regulations and harmonizing them  
13 with potentially updated federal law. So that's going on in  
14 the background.

15 In the meantime there is conversation that has been  
16 started between the industry and the Water Board about a  
17 potential extension to the existing three-year grace period  
18 to allow either the federal rules or the UL to complete  
19 their work so that that can then be done. So at the B5  
20 level this is really no longer a problem, this all got  
21 addressed a while ago. At the B20 level, which is  
22 important, it needs to be addressed. It's still being done  
23 on a case by case basis. It is problematic, it's a  
24 headache, it's expensive. It works, it doesn't work as well  
25 as we would like it to work. And both of these solutions



1     that I've mentioned to you are ones we are hoping will be  
2     here in the not super distant future.

3             MR. WARD:     Their grace period ends February 12, is  
4     that right?

5             MR. BOWEN:     Of next year?

6             MR. WARD:     Yes.

7             MR. BOWEN:     That sounds right.

8             MR. WARD:     That's my guesstimation.

9             MR. BOWEN:     I'm not remembering. It's within -

10            MR. SMITH:     June of 2012.

11            MR. WARD:     June of 2012, okay. About another year.

12            MR. BOWEN:     Yes.

13            MR. WARD:     Okay, great. Thank you.

14            MR. BOWEN:     You're welcome.

15            MS. MAGANA:     Okay, next is Paul Williamson from  
16     Orange Diesel.

17            MR. WILLIAMSON:   Thank you. My name is actually  
18     Dave, I just have trouble forming letters.

19            (Laughter.)

20            I'll work on that.

21            MR. WARD:     Welcome, Dave.

22            MR. WILLIAMSON:   Thank you. I feel very special.

23     My name is Dave, as you know. Speaking to my background,  
24     I'm a former Fleet Manager of the City of Berkeley curbside  
25     recycling program. We converted to the use of pure

1 biodiesel and we ran that fleet on biodiesel for five years.  
2 And subsequently I have been a broker of biodiesel as well  
3 as a consultant. Currently I'm working with owners of  
4 underground storage tanks trying to obtain variances for the  
5 use and introduction of B20 into their decertified systems.  
6 This is as per the variance by the State Water Resources  
7 Control Board.

8           One thing I would like to bring out regarding a  
9 strategy regarding fuels, biodiesel is actually very cost  
10 effective and it can be used in conjunction with other fuel  
11 strategies. Case in point is there are many, if not the  
12 majority of, vehicles out there that are actually quite low  
13 mileage but high impact. These are diesel engines that  
14 power street sweepers, even lawnmowers, public works  
15 vehicles, delivery vehicles. Very often - and this is  
16 surprising - a lot of these vehicles burn about seven to ten  
17 gallons a day. And also they are on their second or third  
18 owner.

19           The point I'm trying to make is, as far as the  
20 infrastructure investment to transition these vehicles into  
21 a green field or into a more sustainable or even more  
22 friendly set of emissions, biodiesel is actually probably  
23 the way to go. And as a capitalization cycle occurs you can  
24 transition into hydrogen or natural gas, whatever fueling  
25 strategy is appropriate for that fleet. Case in point, with

1 the City of Berkeley they had a long-term plan and continues  
2 to have a long-term plan to convert to natural gas.  
3 However, they did use biodiesel in the vehicles that  
4 obviously weren't using natural gas and as a consequence we  
5 were able to green-up the other fleets.

6 As part of a proposal that actually didn't go  
7 anywhere I did some math and the cost of converting the  
8 entire school bus fleet in California to pure biodiesel  
9 would actually equal the cost of 120 school buses converted  
10 to natural gas. And the point of that is that for legacy  
11 fleets - and there are fleets out there that are 30 or even  
12 40 years old using two-stroke engines, and these fleets will  
13 not be replaced any time soon - a fuel strategy of using  
14 biodiesel in those particular fleets is probably the most  
15 cost effective way of reducing emissions. Again, to remind  
16 you, biodiesel will actually reduce the visible opacity of  
17 up to 90 percent and reduce particulate matter, which is  
18 asthma precursors, by up to 50 percent.

19 Speaking from my experience, we had an old and  
20 rather heterogeneous fleet, some of our vehicles were two  
21 years old, some were actually 15 years old. The use of  
22 biodiesel enabled me to transition that entire fleet  
23 immediately.

24 To the point of distribution and my current guys,  
25 there are a lot of distribution bottlenecks within the State

1 of California. In my work I have identified, for instance,  
2 a city that needs simple things like a dispenser pan  
3 underneath a dispenser at a cost of \$10,000. I identified a  
4 distributor that needed to replace a valve, a single valve,  
5 at a cost of about \$1400. There is a garbage company that  
6 needs two dispenser pans - I'm picking on dispenser pans,  
7 these are the containments that sit underneath the gas pump  
8 - at a cost of \$20,000. I have a small list. But off the  
9 top of my head when I was making my notes this morning, that  
10 was \$50,000 of infrastructure investment that can leverage  
11 at least 500,000 gallons of diesel fuel displacement per  
12 year, a one time thing.

13           And this is the result of the actions by the State  
14 Water Resources Control Board. There is a lot of equipment  
15 out there, a lot of infrastructure that has been  
16 decertified, the infrastructure that has been built by  
17 companies that are no longer in business. And it can be  
18 replaced by companies that are in business. But the point  
19 is that there is a lot of simple fixes that we can actually  
20 implement in conjunction with the strategy that Eric was  
21 saying that can actually leverage a lot of biodiesel  
22 throughput. Case in point, I was working with another  
23 distributor in the Stockton area. A cost of \$30,000 would  
24 have leveraged an immediate annual throughput of again  
25 500,000 gallons. So there is a lot of that out there.

1           I urge the Energy Commission to reconsider some  
2 infrastructure funding for small fixes, to arrange \$5,000 up  
3 to maybe \$30,000 per instance. And this would actually  
4 leverage a lot of immediate diesel displacement. And this  
5 can be used in conjunction with the other energy strategies  
6 such as the green propane that has been mentioned here as  
7 well as hydrogen as well as natural gas. And I would urge  
8 going forward that the Energy Commission would set aside  
9 some money, maybe an 80/20 split or a 90/10 percent split,  
10 specifically for biodiesel infrastructure and distribution  
11 infrastructure. Because there is a pent up demand for  
12 biodiesel, it accomplishes a lot of problems, it actually is  
13 the easiest path for greenhouse gas mitigation that there  
14 is. And once we uncover and get past these little  
15 bottlenecks the biodiesel industry can actually move forward  
16 and accomplish a lot of the goals of the Commission. Thank  
17 you very much.

18           MR. SMITH:     Thank you.

19           MS. MAGANA:    Okay, next we have Wesley Caddell from  
20 People's Fuel.

21           MR. CADDELL:   Hello. My name is Wesley Caddell  
22 with People's Fuel and Biofuel Recycling, based here in San  
23 Francisco. We distribute biodiesel and consult with fleets  
24 who would like to look at using the fuel in their fleet.

25           As you know, biodiesel in its pure form requires no

1 modification necessary, there is no engine retrofits, and  
2 it's not explosive, biodegradable, and very easy to store.  
3 And I would like to urge the Commission to reconsider the  
4 funding for infrastructure. As a biodiesel distributor, the  
5 need for additional access to terminals and blending  
6 facilities is of higher importance. We work in an industry  
7 of volumes where currently 80 percent of the diesel used in  
8 the state is medium- to high- to heavy-duty vehicles. And  
9 so these infrastructure improvements with blending  
10 facilities and terminals will greatly impact the biodiesel  
11 used in the state and increase our volumes, resulting in  
12 enormous greenhouse gas benefits.

13 I would like to keep my comments short, but again  
14 encourage the Commission to reconsider allocating additional  
15 funds to the infrastructure needed for biodiesel. Thank  
16 you.

17 MR. WARD: Wesley, I have a question. You  
18 mentioned with little modification to the engine. Is that  
19 at the B5 level you're speaking to or is that B20?

20 MR. CADDELL: At 100 percent biodiesel little to no  
21 modification is to be made to any diesel engine. It works  
22 without modification.

23 MR. WARD: Okay. And what is the impact on the  
24 warranty for that vehicle? Are the OEMs warranting that use  
25 and where does that fall? It's been a while and I

1 understood they didn't all support it.

2 MR. CADDELL: Absolutely. And important to bring  
3 up, OEMs do need to be looked at. OEMS are increasingly  
4 looking at higher blend biodiesel for their engines. And,  
5 while it hasn't been challenged, there is a Magnus-Ferguson  
6 (sic) Act that actually protects OEMs from voiding  
7 warranties - protects the consumer from having their  
8 warranty voided because of a different fuel is used. So if  
9 it's the result of the fuel being the problem for the engine  
10 failure then obviously it needs to be traced back to the  
11 fuel itself. But just because biodiesel is used in the  
12 vehicle does not mean you can void a warranty. I would  
13 encourage you to look at the Magnus-Ferguson Act. I can  
14 provide the information to the Commission.

15 MR. WARD: Thanks, Wesley.

16 MR. SMITH: Okay, I believe that is all of the blue  
17 cards that we have. Pilar is typing a message on WebEx that  
18 is perhaps to ask anyone on WebEx if they have any follow-up  
19 questions or to clarify something that has been said or to  
20 present new material. But it's not looking that way.

21 Okay, well seeing no additional comments I think I  
22 would just like to wrap up this workshop by, of course,  
23 thanking everyone who participated, especially the  
24 California Public Utilities Commission. Thank you, Matthew.  
25 This will be the last of our series of workshops on the

1 Investment Plan. The Committee final version of the  
2 document should be posted towards the middle of the month in  
3 anticipation of possible adoption of the Investment Plan at  
4 a June 29th Commission business meeting. Any final  
5 comments?

6 (No response.)

7 All right, we thank you all for coming here. This  
8 workshop is adjourned.

9 (Workshop adjourned at 10:44 a.m.)

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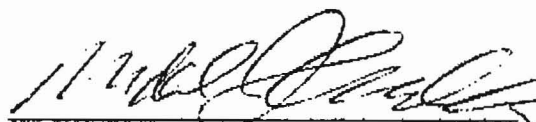
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## CERTIFICATE

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

  
\_\_\_\_\_  
Michael F. Connolly, CER  
Reporter/Transcriber

\_\_\_\_\_  
6/6/11

Date