

JOINT COMMITTEE WORKSHOP  
BEFORE THE  
CALIFORNIA ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION

In the Matter of: )

Preparation of the 2009 )  
Integrated Energy Policy Report )  
----- )

Docket No.  
09-IEP-1K

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

TUESDAY, APRIL 14, 2009

9:00 A.M.

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**09-IEP-1K**

DATE APR 14 2009

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COMMISSIONERS PRESENT

Jeffrey D. Byron, Presiding Member,  
Integrated Energy Policy Report Committee

James D. Boyd, Vice Chairman and Associate Member,  
Integrated Energy Policy Report Committee and  
Presiding Member, Transportation Committee

Karen Douglas, Chairman  
Associate Member, Transportation Committee

ADVISORS PRESENT

Susan Brown

Kristy Chew

Diana Schwyzer

STAFF and CONTRACTORS PRESENT

Nick Janusch

Suzanne Korosec

Gordon Schremp

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

ALSO PRESENT

Joe Sparano  
Western States Petroleum Association (WSPA)

Thomas O'Connor  
ICF International (ICF)

Martin Eskijian  
State Lands Commission

Robert Jagunich  
Biofuels, Logistics & Terminals, LLC (BL&T)

Rahul Iyer  
Primafuel Terminals

John Braeutigam  
Valero Energy Corporation

Jim Frusti  
Chrysler, LLC

Brooke Coleman  
New Fuels Alliance

Paul Argyropoulos (via telephone)  
United States Environmental Protection Agency,  
Office of Transportation and Air Quality (US EPA)

Russ Kinzig  
Kinder Morgan Energy Partners

Ed Hahn  
Kinder Morgan Energy Partners

Jeff Stephens  
Propel Fuels

Gary Castro  
California Department of Food and Agriculture,  
Division of Measurement Standards (CDFA DMS)

Allan Morrison  
California Department of Food and Agriculture,  
Division of Measurement Standards (CDFA DMS)

ALSO PRESENT

Chelsea Sexton  
Lightning Rod Foundation

Robert Graham  
Southern California Edison (SCE)

Mike Eaves  
Clean Energy Fuels

Michael Coates  
Mightycomm  
on behalf of Daimler AG

John Mough  
California Department of Food and Agriculture  
Division of Measurement Standards (CDFA DMS)

Jay McKeeman  
California Independent Oil Marketers Association  
(CIOMA)

John Shears (via telephone)  
Center for Energy Efficiency and Renewable  
Technologies

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

9:06 a.m.

PRESIDING MEMBER BYRON: We are anticipating the arrival of Chairman Douglas here momentarily but I think we can get some of the housekeeping things out of the way.

MS. KOROSEC: Yes, we'll get that out of the way first then.

PRESIDING MEMBER BYRON: So let's begin.

MS. KOROSEC: All right. Good morning. I am Suzanne Korosec. I am the Energy Commission's lead for their Integrated Energy Policy Report unit.

Welcome to day one of this day and a half workshop on transportation infrastructure issues. The workshop is being conducted jointly by the Energy Commission's Transportation and Integrated Energy Policy Report Committees.

We have a very full agenda so I'll try to keep my comments brief. Just a few housekeeping items. The restrooms are out the double doors and to your left near the side exit door. Also note, please don't use the side exit door, it's for staff only. A large alarm will go off and embarrass you if you do.

1           There is a snack room on the second  
2 floor of the atrium at the top of the stairs under  
3 the white awning. And if there is an emergency  
4 and we do need to leave the building please follow  
5 the staff out to the park kitty-corner to the  
6 building and wait there for the all-clear signal.

7           Today's workshop is being broadcast  
8 through our WebEx conferencing system.  
9 Instructions on how to participate in that are  
10 provided in the workshop notice for today's event,  
11 which is available on our website at  
12 [www.energy.ca.gov](http://www.energy.ca.gov). The workshop is also being  
13 webcast and access to the webcast is also  
14 available on our website.

15           Just some really brief background.  
16 Every two years the Energy Commission is required  
17 to prepare an Integrated Energy Policy Report that  
18 provides an overview of major energy trends and  
19 issues that are facing the state. This includes  
20 transportation fuels, technologies and  
21 infrastructure.

22           Today and tomorrow we will be focusing  
23 on transportation infrastructure issues that may  
24 affect the adequacy of supply and delivery of  
25 California's petroleum and alternative

1 transportation fuels.

2 As we noted in the 2007 Integrated  
3 Energy Policy Report, California's petroleum  
4 infrastructure operates at our capacity. And as  
5 the state's population continues to grow and the  
6 demand for transportation fuels increases the need  
7 for infrastructure also increases.

8 And with the Governor's aggressive  
9 greenhouse gas emission reduction goals we also  
10 need to identify the infrastructure that will be  
11 needed to reliably provide alternative  
12 transportation fuels that an help us meet those  
13 goals.

14 And with that I will turn it over to the  
15 Commissioners to make opening comments.

16 PRESIDING MEMBER BYRON: Thank you,  
17 Ms. Korosec. I am Commissioner Jeff Byron. I am  
18 Chair of the Integrated Energy Policy Report  
19 Committee. Which is taking, I guess, priority  
20 over the Transportation Committee today, since I  
21 get to open with remarks.

22 It's a Joint Committee Meeting and with  
23 me are the two members of the Transportation  
24 Committee, our chairman, Chairman Douglas, and  
25 Commissioner Boyd, Vice Chairman Boyd.

1           To Vice Chairman Boyd's left is his  
2       advisor, Susan Brown. And all the way to my right  
3       is our Chairman's advisor, Diana Schwyzer, and my  
4       advisor, Kristy Chew.

5           I am going to keep my remarks brief. We  
6       have a very full agenda, extraordinarily full.  
7       Who is going to keep this all on schedule?

8           MS. KOROSEC: Gordon. Gordon is the  
9       gatekeeper.

10          PRESIDING MEMBER BYRON: But I defer to  
11       the Chairman and the Vice Chairman to provide some  
12       additional opening remarks. Commissioner Boyd?

13          VICE CHAIRMAN BOYD: Well Suzanne did a  
14       marvelous job of almost covering the whole thing.  
15       I just want to re-reference everybody to the  
16       notice, and in particular the supplement to the  
17       notice that were issued for this joint workshop  
18       which elaborate the kinds of issues that we are  
19       interested in with regard to transportation  
20       fueling infrastructure.

21          And in this day and age, in this day of  
22       the diversified portfolio, ambitions and desires  
23       of the state of California -- as indicated we are  
24       going to be talking about the whole menu of  
25       transportation fuels, be they liquid, gaseous or

1       electrons. We really need to know in what  
2       position is the state with regard to the various  
3       features of infrastructure. Everything from, as  
4       indicated marine terminals, distribution  
5       terminals, biorefineries, charging stations,  
6       pipelines.

7               All that composes a transportation  
8       fueling infrastructure network in the state. And  
9       what we may have to address in the Integrated  
10      Energy Policy Report for this year as well as what  
11      the Transportation Committee needs to keep its eye  
12      on with regard to the progress against plan. And  
13      the multitude of plans, goals and objectives that  
14      exist in the state with regard to also a multitude  
15      of other types of needs that affect the  
16      transportation fuel infrastructure along with the  
17      transportation vehicular technologies that utilize  
18      those fuels.

19             I said I was going to be short and I  
20      already haven't been. We have an incredibly  
21      packed agenda and this is going to really tax  
22      Gordon to be the gatekeeper or timekeeper because  
23      nobody can talk longer than he and I when  
24      presented the opportunity. So I look forward to  
25      the next day and a half. Chairman Douglas.

1                   CHAIRMAN DOUGLAS: Good morning,  
2           everybody. I will limit my remarks to joining my  
3           fellow Commissioners in welcoming everybody to the  
4           Energy Commission for our joint workshop on  
5           transportation fuel infrastructure issues.

6                   And with that, thank you.

7                   MS. KOROSK: All right, Gordon.

8                   PRESIDING MEMBER BYRON: Thank you both  
9           very much.

10                  Gordon, I have been through the  
11           presentations that I had last night, some of them  
12           are quite lengthy. Very full of a lot of  
13           excellent information. It is going to be very  
14           challenging. How do you plan to notify your  
15           speakers when we are running out of time?

16                  MR. SCHREMP: I was going to jump up and  
17           down a little bit, look a little frustrated, and  
18           so that should get their attention.

19                  Seriously, we intend to give each of the  
20           speakers, we will put them on a clock essentially,  
21           ten minutes. And when the ten minutes is up we  
22           will give them a five minute signal. I will do  
23           that. And then hopefully they can wrap that up.

24                  Because as you mentioned their slides  
25           are into the record, all of them, even though they

1        may not present and talk about each one. So we  
2        want to make sure everyone has an opportunity.  
3        Because as you said, we are extremely full in the  
4        number of speakers we have.

5                PRESIDING MEMBER BYRON: And I feel  
6        badly. We are limited, we only had a day and a  
7        half scheduled for this meeting and I apologize.  
8        I thank you all for being here and for the efforts  
9        that you put into this.

10               I can tell you that Commissioner Boyd  
11        flew up this morning from Los Angeles, he had a  
12        hearing last night. As you saw, Commissioner  
13        Douglas just got here. We just don't have enough  
14        time to eat, breathe and sleep it seems anymore.  
15        And yet here you are giving up your time to be  
16        here so we appreciate it. And I apologize ahead  
17        of time that we are going to try and stick to a  
18        schedule so that we can be done by six o'clock.  
19        Thank you.

20               Gordon, let's go.

21               MR. SCHREMP: Okay. Just a few things  
22        before I get going on my presentation.

23               Questions and answers. Typically we  
24        will take questions from the audience after each  
25        presenter. But in this case what we would like to

1 do is hold questions in the audience until we have  
2 completed a session if that's okay with the  
3 Commissioners and the Chairman.

4 And then we'll go online. If Nick has  
5 any questions from people online at the end of the  
6 session we'll take them at that time. And those  
7 questions, people can indicate by raising their  
8 hand online with that online feature.

9 We do -- When people have questions we  
10 are looking for the clarifying questions based on  
11 the presentations that have occurred during that  
12 session. We understand some people may have some  
13 statements they would like to make and we do have  
14 a public comment period at the end of the session.

15 Copies are outside, hard copies. They  
16 are being posted online. So as we get them we  
17 make copies and put them online. So if they are  
18 not there yet they will be today.

19 And I guess finally, as I mentioned,  
20 I'll give you the five minute signal when we're up  
21 here. So I'll get going without any further  
22 adieu.

23 My name is Gordon Schremp, I am the  
24 senior fuel specialist in the Fuels and  
25 Transportation Committee. And I'll be sort of MC-



1       ing or walking your way through this.

2               We are essentially here to collect  
3       information. This is an opportunity for  
4       stakeholders to present critical issues to the  
5       Commissioners and the Chair during this day and a  
6       half, put information into the record and help us  
7       identify what issues should be addressed through  
8       this IEPR process.

9               This is really integration. This is our  
10       second workshop in sort of the transportation and  
11       development chapter. There was a price workshop  
12       talking about demand forecast. Prices, demand and  
13       supply all go together. And we are, in this day  
14       and a half, concerned mostly with the  
15       transportation infrastructure that keeps all of  
16       that functioning. Both the in, through and out in  
17       that system for all liquid fuels.

18              And sort of how that works. We have an  
19       in-state fuel demand calculation. We look at  
20       demand in neighboring states, Nevada and Arizona.  
21       Why? Because pipelines go there. It's part of a  
22       southwest system.

23              We look at the refineries. Are there  
24       new projects? Will they expand gradually over  
25       time by increasing the distillation capacity?

1 Will they continue to do that or will actually  
2 production capacity decline in California?  
3 Refinery closures running at lower rates.

4 So with all that information we forecast  
5 imports into California. And part of those  
6 imports are for purposes of going through the  
7 state into Arizona and Nevada. So what is the  
8 infrastructure requirements we are anticipating  
9 from all that.

10 So we do look at the refineries. We are  
11 looking at biorefineries, ethanol and biodiesel  
12 facilities. We are trying to better understand  
13 what the import facilities are. We will talk  
14 about that today in the first session. And  
15 pipelines, what can they transport, can they carry  
16 renewables? We will also be talking about that  
17 this morning as well.

18 This is a graphic that intends to show  
19 that we are interdependent on other states. We  
20 receive product through over-the-water. They go  
21 through these black pipeline segments, petroleum  
22 pipelines, and we feed into Nevada and Arizona.  
23 So it's one large system, is how we look at it.

24 And the various parts and pieces are  
25 laid in this graphic. But essentially it's

1 everything from the point at the water, the wharf,  
2 all the way to the retail station. Those are the  
3 infrastructure issues that we would like to  
4 identify and cover today.

5 So we calculate imports in terms of  
6 incremental imports. How many more than currently  
7 we are receiving. We are interested in the  
8 increased load on the system, both at the marine  
9 terminals, the distribution terminals, and in this  
10 case, retail infrastructure in terms of new or  
11 expanded use of fuels that currently aren't in  
12 great use at this time.

13 We have gone through, and no surprise  
14 based on the economic news both globally, in the  
15 US and in California, there has been a severe  
16 economic downturn. As a consequence we have  
17 gasoline and diesel fuel demand decline. And this  
18 is really unprecedented. It's been four  
19 consecutive years of decline in California.  
20 That's only happened one other time since World  
21 War II.

22 Diesel fuel is off 8 percent compared to  
23 last year. Gasoline is off 4 percent compared to  
24 last year. This does have an impact on the  
25 infrastructure. It means it frees up additional

1 infrastructure assets and also has impact on  
2 refinery operations. And you'll see that in some  
3 of my slides.

4 So some of the issues we want to talk  
5 about in this first segment on marine  
6 infrastructure are the Marine Oil Terminal  
7 Engineering and Maintenance Standards by the State  
8 Lands Commission, so we have someone to talk about  
9 that. What potential impact, if any, may there be  
10 on those operations as facilities upgrade to this  
11 new set of standards.

12 And then we are also going to be talking  
13 about what is the expectation for refinery  
14 capacity. Because if we change that it changes  
15 the crude oil import estimate, but it also affects  
16 the imports for clean products coming into the  
17 state. So we want to understand what type of  
18 infrastructure issues are out there and what type  
19 of projects are underway.

20 And I think lastly something newer that  
21 we haven't been exploring as much has been the  
22 renewable infrastructure. What do people want to  
23 do, what are the type of assets and attributes of  
24 a marine terminal that may be different from the  
25 existing marine terminals that we use today to

1 import gasoline, blend stocks and diesel fuel and  
2 jet fuel.

3 And most importantly, what plans are  
4 there or actual construction projects underway to  
5 facilitate increased renewables over the water.

6 So this is a list of the speakers we  
7 have in this first session on marine  
8 infrastructure. At this point I'll turn the  
9 microphone over to Joe Sparano as soon as we get  
10 his presentation up. Thank you very much.

11 MR. SPARANO: Good morning,  
12 Commissioners, Advisors, members of the audience.  
13 First, thank you for allowing WSPA to share some  
14 information with you this morning.

15 I'll start by reminding everyone, myself  
16 included, that as a trade association we are held  
17 to pretty strict anti-trust guidelines. You will  
18 not find me predicting anything.

19 Information such as very valuable  
20 information Gordon outlined, would have to come to  
21 come from companies in terms of who and which  
22 company might be interested in expanding  
23 refineries or increasing imports or getting  
24 another slot at one of the import terminals in  
25 California. That's all company competitive

1 information and we don't go there.

2 I am not going to wear an orange  
3 jumpsuit in the last two years of my career and  
4 certainly not interested in sharing a cell with  
5 Bubba. So with that in mind I'll share as much  
6 information with you as I can and hopefully set  
7 more of an overview tone.

8 Tom O'Connor with ICF, who will follow  
9 me this morning, has done what I believe to be an  
10 excellent report linking supply issues with  
11 infrastructure and will share some of that  
12 information with you. He did that report for WSPA  
13 so I want to be sure that we are up front with  
14 that before he starts to speak.

15 And then tomorrow there will be someone  
16 from WSPA and one of our contractors talking about  
17 crude oil infrastructure, supply issues, issues  
18 that are important to our upstream members.  
19 Combined heat and power. So I think you are going  
20 to get a broad picture from WSPA by the time all  
21 of us have had a chance to share our information  
22 with you.

23 This chart was put together by the  
24 Energy Information Administration. It's their  
25 2009 annual energy outlook. You're shaking your

1 head.

2 PRESIDING MEMBER BYRON: I have just  
3 come to not believe EIA very much anymore, Joe.

4 MR. SPARANO: Well that sets a great  
5 tone for my next comment, Commissioner. Now that  
6 the Commissioner has debunked my slide I think  
7 I'll go to the next one.

8 Actually who knows whether they are  
9 right or not but I think what is instructive is  
10 that some of the better minds that our federal  
11 government has in terms of forecasting the future,  
12 and they have redone this one already twice in  
13 2009. The main point on this is if you look at  
14 2030 you will see that despite what I will show  
15 you in a moment, tremendous growth in ethanol and  
16 biodiesel and also in other biofuels.

17 We are still looking in the eyes of the  
18 EIA at 80 percent or so, 79 is the number in 2030.  
19 Seventy-nine percent fossil fuels, about 55  
20 percent of energy supplied to meet this modestly  
21 growing demand as is shown on the chart. About 55  
22 percent is still expected to come from oil and  
23 gas. So I think the message here is, we are not  
24 done yet. And despite a lot of great effort by a  
25 lot of people that I think will come to fruition

1 over time, we should all consider that we will be  
2 using petroleum-based fuels for quite some time to  
3 come.

4 I won't dwell on this, I only want to  
5 point out two numbers here. Ethanol and Biodiesel  
6 line. That's the growth rate, 465 percent between  
7 2007 and 2030. It's pulled along, if you will, by  
8 the Federal Renewable Fuel Standard, which  
9 mandates biofuel use by refiners in blending and  
10 finishing their gasoline and diesel products.  
11 Thirty-six billion gallons by 2022. So there is a  
12 pull there. That's a huge growth rate.

13 Look down at the line of Other Biomass  
14 and Renewables. You'll see also a significantly  
15 large growth rate for the period. So the  
16 expectation by the EIA is that we will see  
17 tremendous increases in the percentages at least  
18 of alternative and renewable fuels that will be  
19 part of our transportation fuel portfolio here in  
20 America. But that when you add it all up we are  
21 still looking at about ten percent of 2030 demand  
22 met by biofuels and other renewables, about eight  
23 percent from nuclear, and that's pretty flat from  
24 2007, and about two and a half to three percent  
25 from hydro. All the rest comes from fossil fuels.



1           This is a pretty busy chart in terms of  
2     the words so let me just try to encapsulate it.  
3     Overall, at least in the last few years, and it's  
4     come up a bit short as Gordon showed on his chart  
5     more recently, but we have seen demand for  
6     transportation fuels outpacing supply. That has  
7     created some challenges in the last few years in  
8     terms of price volatility here on the West Coast  
9     and around the country.

10           We are looking at a future that appears  
11    to be requiring significantly more imports. Not  
12    necessarily products, although the last time you  
13    folks issued an Integrated Energy Policy Report  
14    there was still a fair amount of product imports.  
15    Certainly a significant amount of crude imports.  
16    And even the product imports, whether they were  
17    imports of petroleum products or renewable fuels  
18    as outlined in your last report, they are still a  
19    substantial amount.

20           And the big issue here is that we don't  
21    have any pipelines that I know of that bring crude  
22    or products into California. There are none. So  
23    everything we get comes by water.

24           Right now 45 percent of the crude  
25    delivered to refineries in California comes from a

1 foreign country; 16 percent comes from Alaska.

2 Both of those types of crudes are delivered by  
3 water. And then the other 39 percent is produced  
4 inside California on or offshore. The 39 percent  
5 number has been dropping, the 16 percent number  
6 has been dropping. The 45 percent number has been  
7 increasing and is expected to increase more.

8 We need to be sure that we have adequate  
9 facilities to import those hydrocarbon-based  
10 materials that we will be using if the EIA is even  
11 close to right for decades to come. And I think  
12 we are all aware, based on our dialogue in  
13 previous IEPR workshops and adoption hearings that  
14 according to your own estimates the current import  
15 and importation facilities are at capacity.  
16 Petroleum infrastructure facilities are at  
17 capacity.

18 The other piece of news here is that we  
19 have outlined collectively, certainly the CEC in  
20 your previous IEPR and what I would expect in the  
21 current one, a great deal of increase in the  
22 amount, volume, types of renewable fuels,  
23 alternative fuels that will be part of  
24 California's energy supply portfolio.

25 For most of those except ethanol by rail

1 and maybe a little by water there isn't any  
2 infrastructure. And I know Gordon outlined that  
3 and hopefully in these two days we will hear from  
4 folks who have some insight into whether, how much  
5 and who is going to pay for the infrastructure  
6 that will be needed to support those additional  
7 products. So I think those --

8 VICE CHAIRMAN BOYD: Joe, could I?

9 MR. SPARANO: Yes.

10 VICE CHAIRMAN BOYD: A quick question.  
11 You mentioned that in California we import, the  
12 import is 45 percent foreign oil. If my memory  
13 serves me right that makes California, as compared  
14 to the United States, that has us importing less  
15 foreign oil than the national average. Am I  
16 correct?

17 MR. SPARANO: The national average for  
18 crude and products is around 60 percent.

19 VICE CHAIRMAN BOYD: That's what I  
20 thought.

21 MR. SPARANO: California is 45 percent.  
22 But the main point I was trying to make is that  
23 when you add in Alaskan deliveries the issue is  
24 how much comes by water, and that's over 60  
25 percent and climbing.

1                   VICE CHAIRMAN BOYD: Thank you.

2                   MR. SPARANO: And finally something that  
3           Commissioner Boyd and I at least have had fun with  
4           for a few years and Commissioner Geesman before he  
5           left the Commission. Permitting. Permitting is  
6           still in our view a significant issue for  
7           California. It is for petroleum-based facilities.

8                   You will hear from Dave Wright on the  
9           PIER 400 project I believe in the next day or so.  
10          That project is in its sixth year within the LA  
11          Port and City system awaiting approval, perhaps  
12          today or tomorrow from the City Council and I'm  
13          hopeful that that approval is granted. That's a  
14          long time to get permits.

15                  I don't know what the permit picture  
16          looks like for renewable fuels of other types but  
17          I suspect that systemically the system is the  
18          same, the permit process is the same. And so that  
19          outlook doesn't make me very comfortable and  
20          hopefully together we can look at trying to  
21          improve the efficacy and the efficiency of that  
22          permit system so that it can move more quickly to  
23          allow folks who are willing to invest in  
24          California to build the new infrastructure that is  
25          going to be necessary.

1           A quick chart here just shows that crude  
2   oil is still an issue. It's been, despite some  
3   drops in demand through 2008 crude oil into the  
4   ports of LA and San Francisco has increased.  
5   That's without ANS. A note at the bottom shows  
6   that probably another 300,000 barrels a day of ANS  
7   comes into California. All of it comes across the  
8   docks.

9           So if you recognize, and I think most of the  
10  folks in the room do, California's crude  
11  production is in decline and there are no signs  
12  that that decline has been arrested or will be  
13  soon. I wish it was different. I hope we can  
14  make it different.

15           I'll be standing in front of the  
16  Secretary of the Interior and his staff on  
17  Thursday testifying to that effect at an MMS  
18  hearing in San Francisco on the five year plan to  
19  open additional access to offshore sites and to  
20  lease those sites for drilling, and some of those  
21  are off California. And so my hope is that there  
22  will be some movement there but that hasn't been  
23  the case in the last many years. So we still are  
24  going to be challenged by crude oil imports.

25           This is a quick look, another

1 illustration at ethanol. The bottom orange part  
2 of the chart is ICF's view of in PADD 5 ethanol  
3 production, around 25,000 barrels a day. That's a  
4 2010 number. We simply put it in the '07 and 2020  
5 bars because we don't know any better for 2020.  
6 Hopefully that will increase. The point here is  
7 that there is a pretty wide gap between the amount  
8 of ethanol that ICF predicts will be needed in  
9 PADD 5 and the in-PADD production capacity.

10 If this is true, accurate, close to  
11 accurate, it just means we are going to have to  
12 import a lot of ethanol. And your last IEPR  
13 showed to meet the demand scenario in that IEPR it  
14 would take something like 13,000 more rail cars a  
15 year to meet that demand, or another 65 tankers a  
16 year and 33 million barrels of new storage. We  
17 are talking some very, very significant -- 33  
18 million gallons of new storage. Very significant  
19 numbers in terms of that infrastructure.

20 You all heard the terms last year in the  
21 election cycle of drill baby drill and the  
22 opposite of don't drill anywhere ever, anywhere  
23 near my property. I think those are the extremes.  
24 We are going to need a pretty wide variety of  
25 actions to ensure that California has an adequate

1 supply of energy, even as we meet the challenges  
2 of climate change, even as we meet the challenges  
3 of bringing more and more renewable fuels into the  
4 portfolio.

5 And so our industry's perspective is,  
6 despite the drop in demand we are going to need  
7 more domestic energy supplies. We understand how  
8 to bring those to market safely and with  
9 environmental sensitivity. We are using carbon  
10 capture and storage techniques already. And one  
11 of the features of capturing and storing carbon is  
12 you can use it to enhance oil recovery and  
13 increase the amount of oil that is produced from a  
14 reservoir.

15 We have got six -- five items before you  
16 on the chart. Things that we need, feel need to  
17 be done to ensure a better, more robust energy  
18 supply for California. And the last two have  
19 everything to do with eliminating infrastructure  
20 constraints, ensuring that the opportunity to  
21 build new infrastructure is there and that  
22 investments are able to be made now to prepare for  
23 a future that is expected to have more and more  
24 alternatives and renewables.

25 Finally, you have seen the chart before.

1 My mantra here, and this is probably my 60th  
2 appearance before the Commission, I stopped  
3 counting at 50. We have said, and I know we are  
4 not in full agreement but I will say it again.

5 We believe as an industry and as  
6 California businesses that the best way to deal  
7 with our future energy supply challenges is to  
8 continue using, making cleaner the existing  
9 petroleum supplies that we have. And to augment  
10 those supplies with any and all alternative and  
11 renewable fuels that are scientifically sound,  
12 technologically feasible, that are cost-effective,  
13 and in our view that don't require a mandate to  
14 get them done. And we think there are a lot of  
15 fuels out there that fit that bill.

16 This chart shows the areas that are  
17 members, in addition to many, many entrepreneurs.  
18 Our members are involved in all of the areas that  
19 are shown on this chart. So I am actually hopeful  
20 that this represents a good and robust energy  
21 supply future for California. And hopefully some  
22 of the things we will hear in the next day and a  
23 half will support that. Thank you.

24 PRESIDING MEMBER BYRON: Thank you.

25 MR. SCHREMP: Tom.



1           MR. O'CONNOR: Good morning, everyone.  
2       Appreciate the opportunity to be here and speak  
3       with the Commission. This is my first opportunity  
4       not 60th, as Joe.

5           WSPA asked ICF to take a look at supply  
6       and demand balance in PADD 5, the entire west  
7       coast region including Alaska, Hawaii, Nevada and  
8       so on based on the annual energy outlook. And you  
9       should get a full copy of our report I think as  
10      part of the proceedings. This is a brief  
11      presentation, a distillation of the presentation.

12           I would like to start first by taking a  
13      look at, and hopefully everybody can see this,  
14      looking at the PADD 5 demands from 1995 to  
15      current. The chart shows gasoline on the bottom  
16      followed by distillate fuel and jet fuel.

17           Demands rose at a pace over two percent  
18      per year from 1995 through 2007, then fell in 2008  
19      as the economy and high prices drove demand down.  
20      The demand growth period occurred with virtually  
21      no change in the infrastructure in California or  
22      the West Coast. Port capacity, pipelines to  
23      distribute imports to refiners and terminals,  
24      tankage and so on all basically were held fast  
25      over the period. Demand growth greatly outpaced

1 the modest increases in refinery and input over  
2 the period.

3 These trends contributed significantly  
4 to an increased dependance on imports on clean  
5 products and blend stocks. At the same time  
6 tighter product quality specifications over this  
7 period also contributed to higher and higher spot  
8 market premiums in California compared to the  
9 NYMEX gasoline and diesel process.

10 And I am not sure if you can read the  
11 numbers but basically California premiums ranged  
12 from about five cents a gallon over the 1993 to  
13 2003 period then they jumped up to 15 to 20 cents  
14 above on gasoline. And the distillates went from  
15 about five cents up to 15 to 20 cents again over  
16 the same 2004 to 2007 period. And these were  
17 direct burdens on the West Coast consumers  
18 occurring because of a tighter supply and demand  
19 market.

20 The higher premiums occur because  
21 suppliers have to increase bids to attract  
22 products from other markets. Those market could  
23 be the Gulf Coast. It costs almost 10 to 15 cents  
24 a gallon to move product around from Texas into,  
25 into California, assuming the refiners there can

1 make California specifications. Similar costs  
2 occur from Korea and the Far East markets, which  
3 are the sources of alternative supply.

4 Any delays that occur in the smooth flow  
5 of imported supply due to poor issues or  
6 distribution system problems can rapidly create  
7 price volatility when the delayed commodity is  
8 essential to getting specification product to  
9 terminals.

10 This becomes an even greater issue when  
11 you are looking at a blend that has to be put  
12 together of either gasoline blend stocks or  
13 ethanol that has to get to terminals to be  
14 blended. Any disruption in either supply chain  
15 can cause these problems.

16 In 2006 the Commission investigated  
17 price spikes that occurred in California in the  
18 spring of 2006. One of the fundamental causes  
19 there was delays in being able to get blend stocks  
20 and products into the distribution system in the  
21 port of Los Angeles.

22 The reversal of demand in 2008 had a  
23 dramatic effect on the price premiums. This  
24 demonstrates the volatility and fragility of the  
25 market in PADD 5 and in California. It also shows

1       that if alternative fuels can be developed or  
2       imported that the decreased import requirements  
3       for petroleum-based fuels will clearly weaken  
4       refiner margins and lower prices for consumers.

5               In looking at the AEO forecast.  
6       Basically if you look at the first three levels we  
7       looked at 2007 supply from Non-PADD 5 locations.  
8       About 1.7 million barrels per day were imported  
9       into the, into PADD 5. And of course a good  
10      portion of this was California. By marine,  
11      pipeline and rail.

12             And this does not include North Slope  
13      Crude. The total additional North Slope Crude was  
14      about 600,000 barrels per day into California and  
15      Washington State on top of this. But these are  
16      products that came, that were exogenous to PADD 5.

17             We forecast the 2020 volumes based on  
18      the AEO demand forecasts, which reflect new CAFE  
19      standards and the Renewable Fuel Standard that  
20      were identified in EISA 2007.

21             The AEO assumes basically flat growth  
22      for gasoline demands and jet fuel demands over the  
23      2007 to 2020 period. And about a one percent  
24      annual growth in demands for distillate. This is  
25      much lower than what they forecast last year so

1       they do change.  However, we basically -- I'm  
2       sorry.  The AEO also assumes constant refining  
3       capacity over the period and ICF utilized 90  
4       percent of that refining capacity in forecasting  
5       the volumes for 2020.

6               The impact of the Renewable Fuel  
7       Standard in increased ethanol demands in 2020 and  
8       declining California crude supply results in a  
9       large increase in import requirements by 2020 of  
10      almost about 250,000 barrels per day.  Primarily  
11      this is crude oil and ethanol offset by a  
12      significant reduction in the motor gasoline import  
13      requirements because of the ethanol penetration.

14             And I should also mention this assumes  
15      an E10 ethanol mix, an ethanol supply pattern of  
16      E10 for conventional gasolines and the increased  
17      volume of E85.  So the average gets up to about  
18      12.5 percent ethanol in total gasoline in 2020.

19             As I said, the high growth in ethanol  
20      drives a large reduction in required imports but  
21      the overall need for imports grows significantly.  
22      We assume about 90 percent utilization of ethanol  
23      capacity in PADD 5.  And obviously, if in-state  
24      California ethanol production could be developed  
25      as envisioned, it will reduce imports.  But it

1 still will require infrastructure to move ethanol  
2 from sources in California to the destination  
3 markets for blending.

4 The AEO demand assumptions for growth  
5 rate are well below the two percent average annual  
6 growth rate that I showed earlier from 1995 to  
7 2007. If in fact gasoline, jet fuel and diesel  
8 fuel do grow at a one percent higher rate than is  
9 in the AEO, which is still well under the two  
10 percent rate from 1995 to 2007, imports could jump  
11 to as much as 35 percent over 2007 levels with a  
12 significant increase across all products that  
13 would have to come in to PADD 5 locations. And  
14 again most of these are going to be into  
15 California.

16 The key messages that came from this  
17 study basically indicate that the outlook as it is  
18 painted without any future legislation taking  
19 place, such as low-carbon fuel standards or  
20 additional increases in ethanol requirements that  
21 EPA may be looking at to get past the blend wall.

22 All of these issues in PADD 5 and on a  
23 federal level probably are going to mean even  
24 weaker refining margins. Refiners are going to  
25 tend to only invest to maintain what they have

1 got. And the potential for refinery closures in  
2 the region are going to be significant.

3 In fact, if you believe the AEO the US  
4 overall refinery utilization will drop to 76  
5 percent as early as 2012. And that's a totally  
6 unsustainable situation for US refineries. There  
7 will definitely be refiners closing. So our  
8 assumption of 90 percent utilization in California  
9 is fairly, I think -- it's consistent with what  
10 the utilization has been in California and PADD 5  
11 but I think it's optimistic.

12 Should demand growth also return to more  
13 historical levels sooner than predicted in the AEO  
14 the gap between supply and demand may widen to  
15 level even higher than what we show in the study.

16 This makes it essential that PADD 5  
17 states develop alternative fuel options and  
18 required infrastructure on a priority basis.  
19 That's not new news to anybody here.

20 However, for each of these potential  
21 transportation fuel petroleum substitutes the  
22 supply chain must be resolved to get traction with  
23 consumers and achieve growth. It's not going to  
24 be easy. Consumers' decisions on vehicles are  
25 probably the second-most important financial

1 decision they make.

2 When you go into a showroom and you have  
3 to make a decision between multiple commodities,  
4 multiple types of vehicles, you are going to be  
5 asking yourself, am I going to be able to get fuel  
6 supply if I move, if I travel outside the state of  
7 California? What kind of service stations are  
8 going to be available? How reliable is the  
9 vehicle going to be?

10 It will be a very difficult decision for  
11 a consumer to decide to spend \$30,000 to \$50,000  
12 on a vehicle without knowing that everything is in  
13 place, the technology, the infrastructure, the  
14 service stations, the reliability of the supply.  
15 And for that reason I think we are concerned that  
16 getting traction on that supply chain is going to  
17 become, is going to be more challenging than just  
18 putting the infrastructure in place. In other  
19 words, if you build it they may not necessarily  
20 come.

21 If alternative technologies lag the  
22 fall-back is continued petroleum reliance. If  
23 this occurs it is going to mean more imports and  
24 also higher prices to attract them. I think that  
25 the refining sector may react to this by



1 relatively minor expansions. However, and they  
2 also may try to produce more diesel fuel and jet  
3 fuel at the expense of gasoline.

4 However, the refiners have no incentive  
5 for major expansion projects for commodities that  
6 are clearly being actively phased out by policy.  
7 It is essential that the state ensure that the  
8 petroleum infrastructure, especially for imports  
9 and distribution, be maintained and improved  
10 coincident with the development of the alternative  
11 technology infrastructure so that adequate  
12 importing of required fuel products for consumers  
13 can be met. And the implications to consumers I  
14 think on supply reliability and price are  
15 substantial.

16 That's my final slide that I'll go  
17 through. Okay, thank you.

18 MR. SCHREMP: Thanks, Tom.

19 The next speaker is Martin Eskijian from  
20 the State Lands Commission.

21 MR. ESKIJIAN: Thank you, Gordon and  
22 Commissioners, thank you for the opportunity to be  
23 here. This is also my first time here and I hope  
24 that something in what I say will be important and  
25 take home information that you will find useful.

1           This picture is not from California. It  
2       was taken at Port Blair, South Andaman Island  
3       about six weeks or five weeks after the tsunami of  
4       December 26, 2004 and I was part of a team to go  
5       there.

6           The reason why we are involved in this  
7       particular aspect of marine oil terminals is  
8       because of the Lempert-Keene-Seastrand Oil Spill  
9       Prevention and Response Act of 1990 which says  
10      that the State Lands Commission shall adopt rules.  
11      And part of those rules include performance  
12      standards and that's where the engineers come into  
13      this picture.

14           And down below in the second paragraph  
15      it says that we will provide the best achievable  
16      protection of the public health, safety and  
17      environment.

18           MOTEMS, Marine Oil Terminal Engineering  
19      and Maintenance Standards, is now Chapter 31F of  
20      the California Building Code. Why is it  
21      necessary? Where are we now? And what are we  
22      going to do in the future with MOTEMS?

23           The average of marine oil terminals in  
24      California exceed 50 years. If you read typical  
25      books on marine structures the average typical age

1 is about 50 years.

2 Historically there is no record of  
3 underwater inspection.

4 Facilities were designed for much  
5 smaller vessels. Which means that they have much  
6 reduced impact energies, velocities. The sail  
7 area was much lower and the current area was much  
8 lower. Now these vessels are much larger. The  
9 term we use is grandfathering, where historically  
10 the operator has been allowed to bring in larger  
11 and larger vessels and nobody seemed to mind until  
12 now. With MOTEMS there is standards.

13 Seismic criteria has increased  
14 dramatically since the 1930s and '40s.

15 And we have also found that many  
16 operators want to remain in service for another  
17 20, 30 or 40 years or longer. So it's like  
18 getting a new lease on life for these structures.

19 What do they look like today? These are  
20 some real pictures in California. Serious  
21 corrosion. This is a batter pile, which leans it  
22 is not vertical, supporting a dolphin.

23 Serious corrosion around a flange on a  
24 fire main.

25 A very significant structural crack in a

1       batter pile on a dolphin.

2               The beginning of spalling and then you  
3       will penetrate to the rebar the next step on this  
4       dolphin.

5               Corrosion of pipelines around a flange.  
6       This is offshore along the water.

7               And peeling of the protective cover over  
8       a steel pile, batter pile.

9               And this is the next step in what I  
10      showed you previously where the corrosion has gone  
11      through to the rebar. And then things begin to  
12      deteriorate after that.

13              So what is MOTEMS? I used to say a 50  
14      year old man, now I say a 60 year old man. It is  
15      the equivalent of a 60 year old man going in for a  
16      complete physical and finding out what's wrong  
17      with him and what he needs to fix.

18              It includes an underwater and abovewater  
19      inspection; structural loading criteria is in the  
20      document; seismic analysis and design criteria,  
21      how to do these particular tasks; mooring and  
22      berthing for the vessels that you are actually  
23      using; geotechnical hazards; structural analysis  
24      and design of components; piping and pipelines;  
25      and mechanical, fire and electrical criteria.

1           A couple of words about geotech. We  
2 found in a number of cases that the screening of  
3 MOTEMS has discovered some very significant  
4 geotechnical issues of liquefaction in facilities  
5 that had absolutely no clue that there were real  
6 problems.

7           We have two ways to rate structures.  
8 One that we call a CAR, Condition Assessment  
9 Rating. And the yellow indicates that things need  
10 to be repaired and fixed or you reduce your  
11 operating limits such as reduced wind or you  
12 impact at a lower velocity to reduce your kinetic  
13 energy at impact.

14           At a component level we have what is  
15 called a RAP. And that could be an electrical  
16 deficiency, a mechanical problem or something  
17 else. And again the yellow indicates that it is a  
18 severe problem that needs immediate attention.

19           MOTEMS was approved by the California  
20 State Land Commission in 2004.

21           It was adopted by the Building Standards  
22 Commission in 2005.

23           It was published in August of 2005.

24           And the way the Building Standards Code  
25 works is that 180 days after it is published it

1 becomes enforceable. So it became enforceable in  
2 February of 2006 with the first audits or this  
3 complete physical of the structures due 30 months  
4 after that date.

5 Where are we today? Just a quick  
6 addition of what we have right now is about 32  
7 fixed wharf structure, I am not counting the  
8 offshore such as El Segundo, from Eureka to San  
9 Diego.

10 The build dates go all the way back to  
11 the early 1900s.

12 We have grouped these structures by what  
13 we call risk based on the oil at risk. We have 10  
14 high risk, 17 medium and 5 low.

15 Also we have a new one that is being  
16 proposed in the Port Of Los Angeles and I'm sure  
17 you are familiar with Berth 408, Pier 400. And  
18 that is considered a high risk.

19 What does MOTEMS do in terms of the  
20 seismic criteria? It provides a uniform criteria  
21 from the refinery to the oil terminal. The  
22 refineries have been asked, especially in Contra  
23 Costa County, to satisfy a 475 year return period  
24 earthquake. And so that became our fundamental  
25 criteria for no oil getting in the water. And

1       that was our performance criteria for MOTEMS. And  
2       we believe that having the marine oil terminal at  
3       that level, then the terminal should be just as  
4       hard as the, as the refinery itself.

5               And we believe that without that oil  
6       terminal being operational after an earthquake  
7       then you have lost your capacity to refine and  
8       produce and deliver product.

9               The other advantage of having a robust  
10      oil terminal is that even if a refinery is down  
11      because of a fire or some other problem the oil  
12      terminal can still provide direct delivery of  
13      product, whether it's gasoline, diesel or  
14      whatever, and bring it in by vessel and put it  
15      into tanks.

16              And we also believe that with MOTEMS you  
17      have a much better chance of surviving a high wind  
18      or a breakaway due to a passing vessel or some  
19      other severe environmental event such as a  
20      tsunami.

21              I know this is hard to read, you have  
22      seen this slide before. This is I think circa  
23      2002, the throughput of all the terminals in  
24      California. And the biggest three, Chevron El  
25      Segundo, which is offshore, which is primarily not

1 under the auspices of the MOTEMS except for what  
2 is onshore, provides about 20 percent of the  
3 state's throughput. Chevron Long Wharf is about  
4 almost 20 percent and BP 121 about 16 percent.

5 What is important to note is Chevron  
6 Long Wharf has already come up to MOTEMS standards  
7 for their work and BP 121 we have reviewed and it  
8 is in very good shape.

9 This is an old slide and some of these  
10 numbers are a little different. But the point is  
11 that only a few of the terminals provide most of  
12 the throughput for either north or south and the  
13 other ones are a very small percentage. And  
14 that's hard to read from this slide here but the  
15 percentages, the cumulative percentages go way  
16 down.

17 The high risk terminals, their audits  
18 were due in August. In 2008 we looked at them,  
19 there's ten of them. Each one is four to six or  
20 seven volumes long. We are more than halfway  
21 through now and we are evaluating what they have  
22 done, what they say they are going to do and we  
23 are proceeding with our analysis of what they have  
24 provided.

25 The medium risk are due February of



1       2010. We are expecting 17 sets of three to five  
2       volumes each. And that will keep us busy for the  
3       next three to five years.

4               The low risk are due in February of  
5       2011.

6               What do we do? We review everything  
7       they give us. We prepare a letter of response.  
8       We meet with the operator and his consultants or  
9       the port engineers for LA and Long Beach and we  
10      talk about, what are you going to do, how are you  
11      going to rehabilitate and what's the schedule.

12              And we have taken a philosophy that's in  
13      MOTEMS that I think is applicable. And that is,  
14      for the non-seismic deficiencies, for instance  
15      your vessel is too large for the defender system,  
16      then you need to reduce your impact philosophy so  
17      that you can continue to operate.

18              And the idea is that for the non-seismic  
19      deficiencies you will remain operational. For the  
20      seismic we found that there's a lot of these that  
21      have problems and so we allow the operator to  
22      continue operating and just tell us, you know, is  
23      it two years from now, three years, four years  
24      from now when you'll have it completed. And we  
25      understand that that's going to take time and

1 money and possibly a special set of permits such  
2 as environmental.

3 And the other thing about MOTEMS is that  
4 new terminals such as the one proposed in the Port  
5 of Los Angeles, there's a uniform design criteria  
6 out there that can be applied to all new  
7 terminals, whether it's there or -- they are  
8 talking now about Stockton.

9 It is being used, the seismic portions  
10 of MOTEMS are in a couple of documents. One is an  
11 international document, Seismic Design Guidelines  
12 for Port Structures.

13 I was the chairman of a NEHRP. That's  
14 not your knee. It's a National Earthquake Hazard  
15 Reduction Production and it's referenced there.  
16 And it is referenced now in the military UFC for  
17 high seismic areas to use MOTEMS' criteria.

18 It's on our website. It's about 100  
19 pages long. It's great reading, I recommend it.  
20 And our proposed Revision 1 is on our website and  
21 that is now available too.

22 And that concludes my talk unless you  
23 have some questions right now.

24 ADVISOR BROWN: I have a question of  
25 questions. How are we doing? It sounds like from

1 the standards that you outlined that the  
2 operational risk of these terminals have been  
3 pretty much addressed. Am I getting that right?

4 MR. ESKIJIAN: Yes. What we have done  
5 is for these ten that have submitted their audits,  
6 they look at what is the condition of the  
7 structure today. And then, well how does that  
8 factor into what is the highest wind I can  
9 accommodate with that structure, what is the  
10 highest impact velocity I can accommodate. And  
11 then that operator will live with those  
12 restrictions until they improve or they can remain  
13 operational like that forever.

14 Let's suppose you want a wind, it will  
15 work with a wind of 30 knots and your wind 95  
16 percent of the time never goes above 30 knots.  
17 Well you are okay 90 percent of the time, you're  
18 happy. That's kind of what we are getting at.

19 ADVISOR BROWN: So there are no obvious  
20 policy implications in what you described. We are  
21 good shape, the risk is ameliorated by the  
22 standards. We should rest easy, they are working  
23 well, et cetera.

24 MR. ESKIJIAN: Well, yes. They are  
25 working well assuming there is not an earthquake

1 between now and when they rehabilitate for  
2 seismic. And that is a risk that the operator is  
3 aware, the regulator is aware of and we know  
4 that's, that's life. We can't, we can't tell them  
5 all to stop. We can't do that. So yes, it's a  
6 managed risk. I'll put it that way.

7 Any other questions?

8 VICE CHAIRMAN BOYD: Yes. The seismic  
9 criteria. Do you have a single threshold for  
10 seismic for the state or do you have, does it vary  
11 by region?

12 MR. ESKIJIAN: That's a good question.  
13 Well there's two, we call it a Level 1 and Level  
14 2. One is a lesser earthquake. And the higher  
15 one is the 475, the lower one is 50 percent  
16 probability in 50 years.

17 It's the same criteria statewide but it  
18 requires a site-specific seismic investigation to  
19 figure out what is that, what is that time history  
20 or that response spectrum for that particular site  
21 depending on the soil condition and the  
22 stratigraphy of what is there and where the faults  
23 are. And that is independently determined for  
24 each facility.

25 In LA and Long Beach those ports have

1 done their own independent study on top of the  
2 study we did for MOTEMS so they have pretty much,  
3 they know what they have got for LA and Long  
4 Beach.

5 VICE CHAIRMAN BOYD: Thank you.

6 MR. SCHREMP: Martin, I have a quick  
7 question. Are you aware of any companies that  
8 have made a business decision not to move forward  
9 and ultimately comply with MOTEMS at this time?

10 MR. ESKIJIAN: Good question, Gordon. I  
11 believe there may be one that is low risk that  
12 will remain operational in the Port of LA until  
13 their audit is due as a low terminal. I think the  
14 bigger threat may be ports that kind of move oil  
15 terminals aside and say, you know, please move.  
16 We don't see that as a, as a function of MOTEMS.  
17 We believe that MOTEMS is not causing anybody to  
18 close, close shop.

19 MR. SCHREMP: Thank you, Martin.

20 Our next presenter is Robert Jagunich.  
21 Thank you, Robert

22 MR. JAGUNICH: Hi, I'm Bob Jagunich.  
23 I'm with a company called Biofuels, Logistics &  
24 Terminals.

25 I am going to talk about biofuels, which

1 I think is one of the most complex issues probably  
2 addressing this Commission and probably the state  
3 of California in so many ways. Because it  
4 combines the issues of energy substitution, areas  
5 of commodities in products that most of the people  
6 in the energy field are not familiar with,  
7 vegetable oils, animal fats, et cetera.

8 It combines the issues of environmental,  
9 both in terms of greenhouse gas issues but in  
10 terms of sustainability and a variety of other  
11 things.

12 So I am going to try to keep my  
13 presentation fairly specific to one small segment  
14 to just outline some of the issues that are  
15 important in trying to bring biofuels to  
16 California and why biofuels are important. But  
17 there are many other aspects to be considered.

18 So why biofuels? The basic reason why  
19 biofuels are good is it's going to have an impact  
20 on reducing greenhouse gases and other  
21 environmental impacts in the state.

22 The second issue is there's a large  
23 worldwide supply. We are not talking about  
24 something here where we have to invent technology.  
25 The technology, the supply, the trading, the

1       availability exists on a worldwide basis. It has,  
2       it will continue to. Much of the technology has  
3       been proven. Not in California but in the  
4       Midwest, in Europe and those type of places.

5               So you have something that is a  
6       practical solution to the greenhouse gas issue.

7               It also has the ability to integrate  
8       with the petroleum infrastructure. Not easily but  
9       it can. And those issues have also been worked  
10      out in other states and other countries.

11              The statistics that I am going to give  
12      were provided to me by Gary Yowell and they are  
13      very -- I just started getting these last week as  
14      I was getting ready for this presentation. But  
15      last year we already had an impact from biofuels,  
16      even with ethanol and the small amount of  
17      biodiesel brought in the state. We have reduced,  
18      we have provided greenhouse gas reductions as we  
19      speak.

20              One terminal, 30 million gallon  
21      biodiesel terminal, could provide greenhouse gases  
22      of up to 2.3 metric tons of greenhouse gas  
23      reductions. I think that's supposed to be million  
24      tons, for 1.1 million electric vehicles. Those  
25      numbers are not necessarily how it's going to be

1 applied but it gives you an idea of the impact  
2 that biofuels can have and expanding the  
3 infrastructure of biofuels in the state.

4 A great example is what is the cost-  
5 effectiveness of alternative energy. This slide  
6 here represents proposals for investment and  
7 stimulation of different alternative energy  
8 projects. Putting a 25 cent per gallon incentive  
9 for biodiesel or ethanol can reduce -- are the  
10 cheapest, most cost-effective ways of reducing the  
11 amount of greenhouse gas in the state. So you get  
12 a big bang for your buck in biofuels. And it's  
13 immediate and I want to stress that. Well, semi-  
14 immediate. You have to still put in the  
15 infrastructure.

16 What's the current status? Last year  
17 there was 1.2 billion gallons of ethanol. That  
18 will grow to over four billion according to the  
19 federal renewable fuel standard.

20 Biodiesel is lacking for a lot of  
21 reasons in the state; only 50 million gallons last  
22 year. But if you take the LCFS goals it could  
23 reach 800 million gallons. That's a lot of  
24 gallons for a state that doesn't have very much  
25 infrastructure.



1           Even our RFS calculations, by 2017 you  
2   are talking about 200 million gallons of  
3   biodiesel.

4           Basically, California doesn't have the  
5   infrastructure to support that. I think people  
6   are talking about that at this meeting, it's  
7   encouraging to see. There needs to be done.

8           Right now the whole issue of the  
9   infrastructure, which includes importation,  
10   storing, blending, and something I'll talk about  
11   more in this presentation, the testing and data  
12   management of that, is piecemeal. Frankly I don't  
13   even know how to categorize it because, you know,  
14   I am trying to do research, there's not a lot of  
15   information kept on this. But I think it's a bit  
16   more sophisticated certainly for ethanol because  
17   of the major companies that are involved with it  
18   but it still is piecemeal in a variety of ways.

19           Biofuel infrastructure requirements.  
20   And I don't think these two things totally exist  
21   in the state right now. I don't think you have  
22   the ability to bring in unit trains, which is very  
23   important. The model on the East Coast for unit  
24   trains, which I will talk about, you know, allows  
25   ethanol, certainly, to be brought in from the

1 Midwest.

2 But also the need to bring in ocean-  
3 going ships, which is being talked about in many  
4 ways here. And it is important because of  
5 California's position along the Pacific Coast.

6 You need bulk liquid storage. Bulk  
7 liquid storage is disappearing in the state, not  
8 just for petroleum products but for other things.  
9 I have experienced that directly.

10 And you need to have testing and data  
11 management. There is, there is a lot, there is  
12 testing necessary so that people will have  
13 confidence in biofuels. And there is data  
14 management necessary not only to have that data  
15 passed on to the various parties but to comply  
16 with certain regulatory requirements.

17 And then you need to have blending.  
18 I'll talk about that because that's, that's a very  
19 important issue that assures quality.

20 Distribution into retail I'm not going  
21 to get into much here because I'm really dealing  
22 with midstream infrastructure.

23 California must import biofuels. In  
24 case all of you aren't aware of it we just don't  
25 have the feedstocks in the state. We don't grow

1 corn, we don't have oil crops. We do have animal  
2 fats but that animal fat is also being used to  
3 feed cattle so there's a limitation to how much we  
4 use, although I applaud people that are trying to  
5 take advantage of it where they can.

6 In general the production is best done  
7 where the feedstocks are. For making biofuels it  
8 is better, it's usually cheaper but not always and  
9 I'm sure other people have models, to be close to  
10 the feedstock. And most of the production  
11 terminals of biofuels are near feedstock.

12 Sources of feedstock that may apply to  
13 this state. Algae-based biodiesel, a variety of  
14 other things, I think are still in the research  
15 phase. They haven't really proven themselves in  
16 any kind of mass quantity. It will take awhile  
17 for those to get here.

18 So we are looking at, in the case of  
19 let's say biodiesel, of bringing in biodiesel into  
20 the state. There's a glut of that, there's a glut  
21 of production facilities in the world right now.  
22 And these are from very professional companies.

23 The technology behind biodiesel is  
24 something called oleo-chemistry. It's been around  
25 for awhile, it's been used in a number of

1 different things. You are talking about methyl  
2 esters. So it would be a shame to try to build a  
3 capacity in the state when so much is available  
4 domestically and internationally.

5 By having access to the water, by having  
6 marine terminals, the international sources of  
7 biofuel will give California a broader base and  
8 raise competition for better pricing.

9 Modes of bulk fuel importation. This  
10 shouldn't be new to many people in the audience.  
11 Just to point out that we don't have really a unit  
12 train structure. That's very important for  
13 ethanol bringing it in from the Midwest, corn-  
14 based ethanol.

15 You can't just have the ability to sort  
16 of string out railroad cars in a railroad yard.  
17 It also includes fast loading and unloading and  
18 that would be important.

19 The problem with even rail is that  
20 California is an island logistically. It's  
21 surrounded by mountains or deserts and stuff has  
22 to travel through that. It adds cost. It adds  
23 cost for railroad cars turning around. It's  
24 effective in the East Coast coming from the  
25 Midwest but it's probably less effective for

1 California.

2 Ocean-going ships are probably the best  
3 way. There is no ability to bring in bulk  
4 biofuels but on ocean-going ships.

5 It should be an obvious component of  
6 California's infrastructure. Also things like  
7 less carbon is generated.

8 Ocean-going ships are kinder. Sending  
9 biodiesel over the deserts of the West in the  
10 summer will degrade it.

11 And it is required for international  
12 importation.

13 People worry about bringing in biodiesel  
14 from, from -- I'm hitting a lot of issues here but  
15 -- and so not everybody in this room may, may be  
16 fully appreciative. But there is a concern about  
17 bringing in imported biodiesel.

18 I want to show you a picture of a palm  
19 plantation because palm oil is one of the biggest  
20 sources for vegetable oil that can be made into  
21 biodiesel. This is a standard palm plantation  
22 that produces roughly ten times as much oil that  
23 can be converted into biodiesel per acre than  
24 soybean oil or other domestic sources of  
25 production.

1           There is a concern that as California  
2       would place demand on this it would increase the  
3       deforestation, particularly in Southeast Asia.  
4       This is a palm plantation actually in Costa Rica  
5       that I took a picture of about four years ago.

6           There is technology, however, it's  
7       hybrid technology. This is why corn plants are so  
8       much more productive. They can increase the yield  
9       on these same palm plantations by 2X, and with  
10      some genetic engineering possibly as high as 5X to  
11      what it is today.

12          So there are plenty of reasons to  
13      believe that we can meet the supply of biodiesel,  
14      both now and in the future, without having to  
15      worry about sustainability issues within the  
16      system. Everybody worries about palm biodiesel  
17      causing deforestation. It doesn't have to be and  
18      that's my point in these slides.

19          Terminal requirements for biodiesel.  
20      You just can't go directly into petroleum  
21      infrastructure. The tanks, the pipelines and  
22      fittings have to be adapted.

23          Ethanol, it's well known some of the  
24      issues. Ethanol has the same concerns.

25          Biodiesel itself is not fungible, which

1 is the bane of its existence with the petroleum  
2 industry. That means that you have to sort of  
3 test each lot to know its properties, to make sure  
4 it meets ASTM guidelines. It may need treatment.

5 It may, depending on the kind of  
6 biodiesel brought in, if it's palm brought in from  
7 the crudest type of palm in winter it may require  
8 heating.

9 Biodiesel requires treatment. It may  
10 decompose either from heat or due to bacteria.

11 And now due because of certain criteria  
12 under ASTM it may also require post-processing  
13 filtering of the biodiesel, other types of things.

14 Biodiesel terminals, just as everybody  
15 else says, are difficult to permit. I just  
16 attended a Richmond city planning meeting. I  
17 think there's a general aversion to heavy industry  
18 along the coast of California that is affecting  
19 all of us. We need to find a way to work with  
20 that. It impacts everybody in this room but it  
21 certainly affects those of us that are trying to  
22 get new terminals built to be able to address the  
23 infrastructure requirements.

24 Biofuels blending. This is a big  
25 quality issue that has to be part of the equation

1 in the infrastructure. I was talking to a person  
2 that is very much involved in this area. And when  
3 you think of biofuels think of your Italian  
4 restaurant. You go in there and you put some  
5 olive oil down and you put a little bit of  
6 balsamic vinegar and they don't mix properly.

7 Well that happens with biofuels. No  
8 matter what the components you are going to have  
9 problems. So you have to have blending. The  
10 blending should be in-line blending that assures  
11 proper the homogenous nature of the blend.

12 If it's not done one of the things that  
13 people tried to do, especially in the early days  
14 of biofuels but I'm sure it is still occurring  
15 today in certain situations, was splash blending.  
16 You don't have mixing. If you get a big glob of  
17 biodiesel going through some trucker's tank then  
18 that gets out to the news and all of a sudden or  
19 biodiesel or any type of fuel gets a bad  
20 reputation and it affects all the people that are  
21 trying to provide services in this room. So you  
22 need to have in-line blending.

23 You also need to have the same type of  
24 quality control for dyes that may need to be added  
25 or additives that may need to be added to reduce



1 NOx and other things that are important.

2 This require at the same time testing to  
3 assure quality, to meet ASTM qualifications.

4 Those fortunately are being rapidly expanded to  
5 accommodate biofuels that there in turn will help  
6 the petroleum industry assure a quality product.

7 This may seem daunting when I talk about  
8 it but these things are worked out. That is the  
9 message of biofuels. You can reduce greenhouse  
10 gases. The problems that the petroleum industry  
11 facies, they are more but they have been worked  
12 out outside the state and they have been tested.  
13 We are not talking about experimental technology,  
14 we are talking about something that is available  
15 today from all phases of biofuels.

16 Testing and data management. There's  
17 huge issues in this issue. You have to test, as  
18 required. But now because of things like the  
19 Renewable Fuel Standard every lot of biofuels has  
20 to carry a RIN number, you have track it by  
21 volume.

22 If the state, and I think it should,  
23 requires sustainability for biofuels you are going  
24 to have to track it as well. You are going to  
25 need a large management structure to make sure

1       that the objectives of the biofuels are being, are  
2       being achieved and that everybody in the whole  
3       value chain in this has the ability to get at that  
4       information so that they can have confidence in  
5       what they are doing.

6               California needs to show leadership.  
7       The one issue about biodiesel, biofuels in general  
8       and at least biodiesel, it is a worldwide market  
9       that exists right now. As California enters into  
10      this we will not just be competing with other  
11      states, we will be competing on a worldwide basis  
12      for this commodity. It needs incentives to get in  
13      place.

14             I know the petroleum industry hates the  
15      word mandates but somehow that may be necessary  
16      because the reason that biodiesel is doing so well  
17      in Europe is because of the mandate that it has.

18             It needs to require proper blending so  
19      that -- all of us that are in biofuels worry a lot  
20      about the quality of not ourselves but the other  
21      guy. And there's been a lot of mom and pop that  
22      exist in biofuels and that's caused a lot of  
23      problems from producers to people that are  
24      providing it. We need to have a set of  
25      regulations that assure that, that minimal quality

1 standards are met such as blending.

2 We need grants. Everybody knows about  
3 what's happened in the last nine months. We are  
4 not going to find money for building these  
5 terminals from the public sector if that exists at  
6 all. You know, when I started out looking at my  
7 terminal I looked at hedge funds. That money just  
8 doesn't exist anymore.

9 The sustainability issue has to be  
10 worked out and it has to be worked out in a way  
11 that I think is fair and is fair to everybody  
12 involved all the way out to the international  
13 sector. And then California I believe by taking a  
14 practical attack for sustainability I think can  
15 have its objectives translated to a worldwide  
16 basis so that we don't have people knocking down  
17 rain forest in Indonesia and countries like that.

18 You also need to spend money and think  
19 about putting money into an integrated data  
20 system. There is a data management system that is  
21 being developed by the federal for tracking the  
22 RFS data. There is just a lot going on there.

23 And if California wants sustainability  
24 and other issues and other issues that are helpful  
25 to people in this room, there has to be an

1 investment in that, or at least a realization of  
2 that in support of the development of that, which  
3 is more than I can talk about at this meeting.

4 But that's pretty much the presentation.  
5 Any questions?

6 ADVISOR BROWN: Bob, I have a couple.  
7 When you say mandates behind the LCFS. Were you  
8 talking about a B-5 or a B-20 mandate of some  
9 sort? I don't understand that statement.

10 MR. JAGUNICH: Well basically yes.

11 ADVISOR BROWN: The LCFS is a mandate.

12 MR. JAGUNICH: Well it just has to, it  
13 has to have some teeth behind it to, to -- or it  
14 has to have some incentives behind it. Either  
15 incentives or, or mandates for people to achieve  
16 the mandates through biofuels.

17 ADVISOR BROWN: And on the subject of  
18 incentives. Do you think that the existing  
19 blender's tax credit for ethanol is insufficient  
20 and the tax credit now available for biodiesel is  
21 also insufficient?

22 MR. JAGUNICH: I think it's -- I'm  
23 mainly a biodiesel guy although my terminal will  
24 include ethanol. From biodiesel it probably isn't  
25 sufficient right now. Europe is getting --

1           ADVISOR BROWN: At a dollar a gallon is  
2 still insufficient?

3           MR. JAGUNICH: Even at a dollar a  
4 gallon, yes. Most of the biodiesel that's being  
5 produced in the United States is going to Europe  
6 right now just because it is just not profitable  
7 to produce it here.

8           You are competing to a certain extent  
9 with the overall oils commodity market and it does  
10 need incentives to move it forward.

11          Anybody else?

12          MR. SCHREMP: Thank you, Bob.

13          Our next speaker is Rahul Iyer.

14          MR. IYER: Commissioners, Advisors,  
15 thank you so much for the opportunity to address  
16 you this morning. My name is Rahul Iyer, I work  
17 for a company called Primafuel. We are a  
18 California based, low-carbon fuels technology and  
19 infrastructure company. And having both of those  
20 functions under one roof gives us a rather unique,  
21 total supply chain perspective of what's going on,  
22 not just in California but internationally with  
23 respect to low-carbon fuels.

24          I would like to address you folks today  
25 on some of our activities, and very importantly,

1 specifically in renewable fuels terminal  
2 infrastructure and a project that we are currently  
3 developing at the Port of Sacramento just a few  
4 miles that way.

5 Four issues that I would like to address  
6 today. First, that renewable fuels are a  
7 permanent and growing part of California's energy  
8 mix.

9 Two, that the existing terminal  
10 infrastructure is not sufficient to handle the  
11 mandated growth of these fuels in the state.

12 Three, how we are part of that solution  
13 and how others may be part of that solution.

14 And four, the Energy Commission's role  
15 in ensuring that indeed these solutions come to  
16 fruition.

17 First off, I think, you know, all of the  
18 previous speakers made a good go at this argument  
19 and so I won't spend too much time on it. But  
20 essentially I think it has become abundantly clear  
21 that through the Low-Carbon Fuel Standard, through  
22 the Renewable Fuel Standard first phase and second  
23 phase at the federal level, and most recently  
24 statements by the EIA and moves by major oil and  
25 major refiners make it abundantly clear that

1 renewable fuels are here to stay.

2 The Federal Renewable Fuel Standard at  
3 the national level effectively sets a floor for  
4 biofuels consumption nationally. The data that  
5 you see on the slide in front of you, on the left  
6 is essentially the national Renewable Fuel  
7 Standard as relevant to the California fuels  
8 market. So adjusted for California's essentially  
9 11 percent gasoline share, roughly 7 percent  
10 diesel share of the marketplace.

11 And you will see as a floor we are  
12 talking about roughly four billion gallons per  
13 year by the year 2022 of alternative low-carbon  
14 fuels used in the state.

15 It is also to note that the Renewable  
16 Fuel Standard is the first piece of federal  
17 regulation on the books that actually regulates  
18 greenhouse gas emissions on a life cycle basis.  
19 This is relevant because California is  
20 instituting, as we all know, a Low-Carbon Fuel  
21 Standard. What is important to note is that  
22 California's Low-Carbon Fuel Standard is  
23 considerably more aggressive from a greenhouse gas  
24 reductions perspective.

25 One way to look at this is that the

1 federal mandate requires effectively a four  
2 percent roughly greenhouse gas reduction in the  
3 average gallon of biofuel sold in the country.  
4 The California mandate requires a ten percent  
5 reduction as we all know by 2020 of the average  
6 gallon of fuel sold in the state. This means that  
7 the California mandate is at a minimum two and a  
8 half times more stringent than the federal  
9 mandate.

10 Another way to think about this is that  
11 if California sought to meet the Low-Carbon Fuel  
12 Standard. Merely by the mix of fuels mandated by  
13 the Renewable Fuel Standard Phase 2, those fuels  
14 would only meet one-third of California's Low-  
15 Carbon Fuel Standard mandate. What it means is  
16 that California will be consuming very different  
17 renewable fuels than the rest of the country.

18 Now if we look at the Air Resources  
19 Board's recent numbers on their projections of  
20 low-carbon fuels or biofuel volumes in California  
21 we see on the left that corn ethanol essentially  
22 goes away. What is left by the year 2020 is in-  
23 state corn ethanol production. Although it should  
24 probably be noted that as of last week every corn  
25 ethanol producer in California has been idled.



1           Having said all that, what we see again  
2           is at a minimum about four billion gallons of low-  
3           carbon fuels replacing gasoline and diesel in the  
4           state by 2020.

5           Now understanding that the Renewable  
6           Fuel Standard and the Low-Carbon Fuel Standard  
7           will at a minimum triple the volume of renewable  
8           fuels used in the state over the next decade, we  
9           recognize that indeed today's terminals are  
10          running at maximum capacity. That's been iterated  
11          I think enough times this morning. And that the  
12          existing terminal infrastructure just can't do  
13          this. We believe as a company therefore that new  
14          multi-modal hubs, Low-Carbon Fuel Standard hubs,  
15          are required in the state. And it is precisely  
16          why Primafuel's infrastructure team has been  
17          developing such projects.

18          Again, using the Air Resources Board's  
19          own scenario to fuel mix assumptions for meeting  
20          the Low-Carbon Fuel Standard, which includes by  
21          the way a very aggressive penetration rate of  
22          hydrogen fuel cell vehicles, of plug-in hybrids,  
23          and a very aggressive improvement of efficiency  
24          standards in the state. With all of that we see a  
25          very, very strong demand for new renewable fuels

1 liquid storage at the state level.

2 So if we look at the data here. And we  
3 evaluate the scenario in a base case and a high  
4 case, which effectively -- the distinction is, in  
5 the base case ten percent of the renewable fuels  
6 that California will be using are produced in-  
7 state, in the high case 20 percent is produced in-  
8 state.

9 What it shows here is that the  
10 incremental addition of storage capacity required  
11 is at a minimum 35 million gallons of storage in  
12 just the year 2012. Which as we know in the  
13 terminal business is a fairly significant  
14 terminal, brand new terminal required to be  
15 focused on these renewable fuels. And that is a  
16 fairly conservative scenario, we believe.

17 Looking forward, ten such terminals will  
18 be required over the ten years. If you think  
19 about that practically, that's one brand new,  
20 large, renewable fuels terminal built every single  
21 year in the state of California for the next two  
22 (sic) years. Which at the rate of the last 25  
23 years would never be achieved. So something has  
24 got to give here, something needs to change.

25 It's precisely for that reason, and I

1 apologize for the small fonts, that Primafuel has  
2 embarked on developing California's largest  
3 dedicated renewable fuels terminal here at the  
4 Port of Sacramento just on the other side of the  
5 river.

6 Realistically speaking from an impact on  
7 the state, low-carbon fuels are imported into  
8 three main terminals in the state, NuStar  
9 Stockton, NuStar Selby and NuStar Carson.

10 Primafuel Sacramento would be certainly comparable  
11 in scale to all of these terminals and in terms of  
12 impact would be quite meaningful at one million  
13 barrels or 42 million gallons of storage of  
14 renewable fuels.

15 This terminal at the Port of West  
16 Sacramento that we are currently building, as I  
17 mentioned is a one million barrel terminal, a 42  
18 million gallon terminal here at the Port,  
19 centrally located with a number of blending  
20 terminals nearby.

21 I think one of the most interesting  
22 things about it is that it is indeed the first  
23 fully permitted multi-modal terminal in 25 years  
24 in the state of California. So aside from the  
25 MOTEMS issues, aside from all of these other

1 concerns that the terminal industry has in  
2 California, we have indeed been successful in  
3 navigating the waters of California's permitting  
4 system and are now fully entitled and shovel-  
5 ready.

6 To put this in further context with the  
7 operations of the organization, my company.  
8 Storage is one very, very critical part, no doubt,  
9 of making low-carbon fuels a reality in  
10 California. But I think it is important to note  
11 that our business functions sandwich this  
12 important infrastructure with upstream activities  
13 in terms of sourcing, identifying and  
14 collaborating with suppliers of low-carbon fuels.

15 Verifying their life cycle analyses and  
16 so forth and contracting those supplies. Moving  
17 them into the state. Whether they come from the  
18 Midwest or come from offshore or come from other  
19 parts of the state.

20 And then finally on the compliance side.  
21 So this data that we provided to you comes from  
22 on-the-ground business development working with a  
23 number of fuel companies, the obligated parties so  
24 to speak, to develop their compliance plans under  
25 the Low-Carbon Fuel Standard.

1           So finally if I could be so bold as to  
2     make a request. It is abundantly clear, I think  
3     obviously to the Commissioners here, that CEC's  
4     mission includes ensuring that adequate and  
5     reliable transportation energy meets the  
6     California transportation sector's needs.

7           We also know that terminal capacity is  
8     scarce and threatens that supply in indeed -- in a  
9     very realistic way threatens the viability of RFS2  
10    and the Low-Carbon Fuel Standard.

11          And finally, we know that shovel-ready  
12    projects, if we believe that -- CARB's numbers  
13    that we need essentially one new terminal every  
14    single year for the next ten years, that these  
15    shovel-ready projects require commitments from  
16    regulated parties to be built.

17          The reality is that even in this down  
18    capital market and down economy the money does  
19    exist to go into infrastructure like this. It is  
20    standing by. It requires strong commitments from  
21    customers without a doubt. But having said that,  
22    the money is ready to flow and projects are ready  
23    to be built.

24          We believe strongly that a signal from  
25    the state of California. A strong signal from the

1 California Energy Commission requesting from  
2 regulated parties to be firm and clear about what  
3 their infrastructure-specific compliance plans are  
4 under the Renewable Fuel Standard and Low-Carbon  
5 Fuel Standard, would provide precisely the kick in  
6 the pants required to get the market to move. And  
7 once the market starts moving we believe the  
8 investment will flow, the shovels will hit the  
9 ground and projects will be built. And we can  
10 indeed meet this aggressive requirement that we  
11 are all bound to by law under AB 32 and the Low-  
12 Carbon Fuel Standard.

13 So with that I would like to open it up  
14 to questions, thank you.

15 PRESIDING MEMBER BYRON: Mr. Iyer, thank  
16 you very much. Can you give us a sense of how  
17 long it did take you to get permitting for your  
18 terminal.

19 MR. IYER: About two years.

20 PRESIDING MEMBER BYRON: From  
21 announcement to -- and you have started  
22 construction?

23 MR. IYER: We have not started  
24 construction.

25 PRESIDING MEMBER BYRON: I thought you

1 had indicated you were under construction.

2 MR. IYER: No, no sir, we are not under  
3 construction. The project is fully entitled.

4 PRESIDING MEMBER BYRON: Oh, shovel-  
5 ready. And can you give me an idea of what the  
6 cost of the terminal will be.

7 MR. IYER: In the \$140 million range.

8 PRESIDING MEMBER BYRON: Good  
9 presentation, thank you.

10 MR. IYER: Thank you.

11 MR. SCHREMP: Thank you, Mr. Iyer.

12 At this point we would like to open it  
13 up. We concluded the last speaker in this marine  
14 infrastructure session. So any questions in the  
15 audience, if you would please step forward to the  
16 podium and state your name and affiliation.

17 All right, it looks like everyone is  
18 still waking up, okay.

19 VICE CHAIRMAN BOYD: I think they're  
20 stunned.

21 MR. SCHREMP: Nick is checking if  
22 there's any questions online. You can raise your  
23 hand with the Raise Hand feature.

24 And Nick has unmuted everybody so we can  
25 hear what's going on in the background.

1                   No questions online at this time?

2                   All right, well I guess -- just to  
3       reiterate that this is an information collection  
4       proceeding and a whole process. We will be  
5       accepting comments for a certain period of time  
6       after the conclusion of the day and a half events.  
7       And we look forward to information being provided  
8       to us either electronically or written comments  
9       provided to the docket at the Commission. So  
10      there are plenty of opportunities not only today  
11      and tomorrow but in the subsequent weeks and  
12      months as we develop this portion of the IEPR  
13      work.

14                  Well at this point I'll continue on if  
15      there are no other questions and we'll get into  
16      what Rahul was already beginning to discuss, is  
17      the RFS requirements, the Renewable Fuel Standard.  
18      What staff sees as a large increase in renewable  
19      fuel use in California due to federal and state  
20      mandates, primarily, at this point.

21                  On a domestic level the ethanol use in  
22      the United States is at record levels. And as you  
23      can see from this graphic, has increased  
24      tremendously over the last five years. So we are  
25      now over 700,000 barrels a day. Imports vary by



1 economic circumstances, meaning, is it affordable  
2 to bring in imports from Brazil, and what the  
3 balance is. Currently in both supply and demand.  
4 Right now we are in an oversupply situation and  
5 I'll talk about that in just a minute.

6 But the ethanol use as a measure of  
7 concentration in all of the gasoline in the United  
8 States, it is nearly eight percent, which shows a  
9 steady climb in this chart. Moving forward  
10 there's a slight dip down. But we anticipate that  
11 the average concentration of ethanol and gasoline  
12 will exceed eight percent this year and approach  
13 ten percent in 2010/2011.

14 There have been lots of discussion about  
15 difficult economic times for many companies and  
16 industries. The renewable fuel industry is no  
17 stranger to this. This is a measure of -- I think  
18 with this little messed up graphic. The left is a  
19 measure of profit per bushel of corn processed by  
20 a refinery. As you can see from this chart it has  
21 been declining significantly and this, in part, is  
22 a reason why some facilities or companies have  
23 filed Chapter 11 and others are temporarily  
24 shuttering operations and construction plans are  
25 put on hold.

1           So obviously this is a concern. It's  
2       likely temporary in nature. This is part of a  
3       cycle that does go on in the business community.  
4       But the concern is, will this affect investment in  
5       California for in-state biorefineries, either from  
6       traditional sources, sugar cane or even advanced  
7       sources, cellulosically speaking.

8           So staff has to determine what type of  
9       base level of renewable fuel use is going to occur  
10      in California. This is extremely important for  
11      determining adequacy of renewable infrastructure  
12      for importation purposes, either by rail or  
13      marine. As well as tracking what projects may be  
14      under construction or announced for renewable  
15      projects in California.

16           This is driven by the Renewable Fuel  
17      Standard. We have speakers who will talk about  
18      that and what that means, both the first and the  
19      second version. And the Low-Carbon Fuel Standard,  
20      which we expect, as a previous speaker mentioned,  
21      will overlay a renewable fuel obligation for  
22      California.

23           So there's a laundry list of questions  
24      here we are trying to get answers to as part of  
25      this process. As was mentioned earlier we do have

1 a companion piece, an addendum that goes with this  
2 proceeding. If copies are not outside now we  
3 will, we will strive to have copies after lunch  
4 but it is online and has been available.

5 So we have an awful lot of questions  
6 about biorefineries and we think we have some  
7 people to hopefully help us better understand  
8 where things are headed because that's what is  
9 critically important.

10 A couple of speakers will talk about the  
11 Renewable Fuel Standard then we'll talk about sort  
12 of the lay of the land domestically speaking for  
13 ethanol and biodiesel producers in the United  
14 States and in California. And finally the US EPA  
15 will provide us with an update of where the  
16 regulations stand for the Renewable Fuel Standard  
17 Part 2.

18 Without further adieu I'll introduce  
19 John Braeutigam from Valero.

20 MR. BRAEUTIGAM: Good morning. My name  
21 is John Braeutigam, I'm with Valero Energy  
22 Corporation. I am the director of strategic and  
23 regulatory development. Valero is the largest US  
24 independent refiner and we also are the third-  
25 largest US ethanol producer now.

1           I want to talk -- I want to thank Gordon  
2           for inviting me here to talk to you today. I want  
3           to talk about the RFS and the RFS2 regulations and  
4           how they are driving us to the ethanol blend wall.  
5           And then talk about the ethanol blend wall itself  
6           and if there is any ways to get around it.

7           The ten percent ethanol blend wall is  
8           the real infrastructure issue. The RFS2 and RFS  
9           regulations are what's driving us there. I do  
10          want to talk about them because we are still  
11          operating the RFS regulations and it is important  
12          to understand just what's going on.

13          If you look at the Energy Security  
14          Policy Act of 2005 that's what started the RFS  
15          program. It's still in effect. The only thing  
16          that is happening is the EPA is applying the  
17          higher volumes of the RFS2 program under the RFS  
18          rules. But we are still operating under the RFS  
19          rules.

20          There's some important concepts to  
21          understand about the program. Refiners and  
22          importers are the obligated parties. The small  
23          refiners are exempt until 2011.

24          Some of this gets into the details of  
25          trying to look at it and say, are we really at the

1       blend wall yet or not. The Renewable  
2       Identification Numbers or the RINs are the credit  
3       currency of the program. And the RINs move with  
4       title transfer of the ethanol. In most cases, or  
5       really almost 100 percent of the time, only the  
6       blenders of the renewable fuel and the obligated  
7       party and remove the RINs, separate them from the  
8       ethanol.

9               And the obligated parties use the RINs  
10       to turn in to the EPA to show compliance. You  
11       don't have to actually blend renewable fuel. You  
12       have to either blend it and get the RINs or buy  
13       the RINs from somebody else to show compliance.

14              These are the RFS volumes. The only  
15       point here is that it is going to max out at about  
16       five percent of the US gasoline pool. So the  
17       blend wall is not an issue.

18              Okay, this part gets a little tricky.  
19       And it's also a lot of source of confusion and  
20       sometimes some misinformation. The Renewable Fuel  
21       Standard, or the RFS percentage, is the number  
22       that the EPA issues each year. It's the number  
23       that the obligated parties, say a refiner,  
24       multiplies by his non-renewable gasoline  
25       production to determine how much renewable fuel he

1 has to blend or buy RINs for, okay. And the form  
2 of the standard allows for the RFS not applying to  
3 small refiner production, so you end up that it's  
4 -- and it's based on the EIA projections. And  
5 it's in this form to make it easy for an obligated  
6 party to figure out how much renewable fuel they  
7 have to blend.

8 Okay. The renewable fuel or the RFS  
9 percentage is not the percent of renewable fuel in  
10 the final blend, okay. I'm going to repeat that.  
11 The RFS percentage is not the percent of renewable  
12 fuel in the final blend.

13 For instance, if you had an RFS  
14 percentage of 11.1 percent that would correspond  
15 to 10 percent ethanol in the final blend. Think  
16 of it this way. If I had 90 barrels of gasoline,  
17 petroleum-based, and ten barrels of ethanol, I've  
18 got 10 percent ethanol in the final blend.

19 Well what number times 90 equals 10?  
20 It's 10 divided by 90. Or if you can remember --  
21 some of you I can tell were taught longhand  
22 division. You know, nine goes into ten, move the  
23 decimal point. One left over, carry. You know,  
24 you're going to get .11111. So that's how it's  
25 11.1 percent. So until the RFS percentage is up

1 to 11.1 percent we haven't hit the ethanol blend  
2 wall.

3 The other thing is until 2011 the  
4 percentage can be over that but you have 13.5  
5 percent of the gasoline pool that is not in this  
6 calculation. And you can put ethanol in the small  
7 refiner production, it's just they are not  
8 obligated to it, okay. So bottom line, to figure  
9 out really if you are at the blend wall or not  
10 takes a little bit of algebra.

11 For instance, in 2009 this year we have  
12 a 10.21 percent RFS. But if you look at the total  
13 gasoline pool it really only requires 8.71.

14 An estimate of 2010 is that the RFS  
15 percentage would be 11.9 but that would only be  
16 10.2 percent spread out over the whole pool, okay.

17 This is jut to give you information on  
18 RINs. Did I skip a slide? No, okay. Sorry about  
19 that. The only take-away from this is that the  
20 RINs are the credit currency of the program.

21 Okay, compliance. There are some  
22 compliance issues with the RFS. But just a quick  
23 review. Remember the obligated parties are the  
24 refiners and importers.

25 The RIN moves with title transfer.

1                   And when I talk about at or above the  
2                   truck rack what I am talking about is before the  
3                   fuel is put in a final tank to distribute to the  
4                   retail station or to a fleet fueling location,  
5                   okay. The producers, refiners, importers and big  
6                   distributors own title to the product before it's  
7                   put into the trucks. Own title to the fuel at or  
8                   above the truck rack.

9                   Okay. So RFS regs are not like ultra-  
10                  low-sulphur diesel or gas in regulations. We are  
11                  not talking about changing what leaves the  
12                  refinery. We are talking about changing what's  
13                  put into the fuel at the truck rack. Or in the  
14                  case of the LCFS we are talking about making  
15                  potentially other fuels, electricity through plug-  
16                  in electric hybrids or hydrogen compressed natural  
17                  gas, available, okay.

18                 The issue, one of the issues in the  
19                 problems in the workability of the RFS2, and the  
20                 same thing will apply to the Low-Carbon Fuel  
21                 Standard, is the point of compliance for the RFS  
22                 program and the RFS2 right now, assuming they  
23                 issue it in the same form, is when the fuel leaves  
24                 the refinery.

25                 But the refiner may not have title to



1       that fuel at the truck rack. They will have no  
2       control whether the person that does have title  
3       blends in a renewable fuel or if they choose to  
4       blend in an advanced biofuel that may be required  
5       to meet the LCFS or the RFS2 standard.

6               So there is an uneven playing field  
7       among the refiners and importers. Because some  
8       are naturally long, some are naturally short just  
9       to the market structure. And between the  
10      renewable fuel blender and those parties, the  
11      refiners and importers.

12             Because the blender can opt to sell the  
13      RINs, they don't have to. But the refiner and  
14      importer has a legal obligation or a regulatory  
15      obligation to buy them.

16             Okay. The EPA when they designed the  
17      RFS chose to have the point of compliance  
18      displayed because we were expecting they, the  
19      industry, Valero, we were looking at the RFS  
20      requiring ethanol in only half of the gasoline  
21      pool. So you would have half the number of  
22      regulated parties, half the number of people  
23      reporting.

24             Okay. As far as waivers there aren't  
25      many provisions in the RFS regs but it hasn't been

1 an issue because we haven't had problems.

2 Okay, RFS2. The Energy Independence and  
3 Security Act of 2007, EISA, created the program.

4 The proposed regulations have not been  
5 issued yet. They still are at OMB.

6 The final rule needs to be published in  
7 the Federal Register by October 31 this year in  
8 order to allow the required comment period for the  
9 rule to take effect January 2010. The EPA will  
10 most likely not meet the schedule. Maybe Paul  
11 will have a different comment later when he does  
12 his presentation.

13 Right now we are operating under the RFS  
14 regs but we are using the higher volumes, the EPA  
15 is. We expect that to continue through 2010 and  
16 the final RFS2 regs not to take effect until 2011.

17 The main difference is there are  
18 significantly higher volumes, almost five times as  
19 much.

20 Four types of renewable fuels and  
21 standards.

22 They are going to take into account Life  
23 Cycle Analysis, including Indirect Land Use  
24 Change, to see which fuels quality for what  
25 renewable fuel categories.

1                   And the standard percent RFS calculation  
2                   will be extended to gasoline and diesel. So it  
3                   gets a little more convoluted.

4                   I can't even read this at the podium  
5                   here. It's just the numbers. They go up to 36  
6                   billion gallons a year. Okay.

7                   Life Cycle Analysis. Here's the details  
8                   just so you have them. I don't want to dwell on  
9                   that.

10                  And back to the RFS2 percentage, okay.  
11                  It will be the same format in general except it  
12                  will include gasoline and diesel. There will be  
13                  four of them. There will be four obligations.

14                  What is interesting in this though is  
15                  the RFS2 requirements only go up to one billion  
16                  gallons a year of biomass based diesel. So an  
17                  interesting thing to do is to take the total RFS2  
18                  volume requirements, subtract the biomass based  
19                  diesel requirements. That's all -- at least  
20                  that's the volume that potentially is going to be  
21                  ethanol. At least in the near term. And see what  
22                  that volume is as a percent of the gasoline pool.  
23                  And when you do that you can come up with  
24                  different numbers.

25                  And when I did that for 2010, using the

1 same assumptions the EPA did and when they  
2 developed the 2009 percentage, came up with 11.3.  
3 Now remember that 11.1 was the ten percent of  
4 final blend so you are slightly above that.

5 But 2010 still has the small refiner  
6 obligations really only projected to be 9.7 when  
7 you take, when you assume that ethanol does go  
8 into that small refiner volume. Plus what is  
9 going to help in 2010 as far as meeting the RFS2  
10 regs is California ethanol usage will go, the best  
11 we can tell or think is from 5.7 to 10 percent.

12 Okay, RINs are still going to be the  
13 current stated program.

14 And we are still going to have the same  
15 compliance issues as far as people having an  
16 obligation for volume that they don't have control  
17 over what is added to the volume. And you are  
18 going to need a, I'll say an indirect mechanism to  
19 get the title holders of that fuel to blend the  
20 types of fuel in needed to meet the regs.  
21 Indirect because they won't have an obligation  
22 themselves, okay.

23 The higher volumes of RFS2 means that  
24 renewable fuels are going to be in 100 percent of  
25 the gasoline pool.

1           And we are thinking that there's to be  
2 more compliance problems just because, from what  
3 we can tell, we are going to have a higher cost  
4 for advanced renewables. And like I said, you are  
5 going to need then to have an indirect mechanism  
6 of, will somebody blend a higher cost fuel in,  
7 hopefully to turn around and sell the RIN to the  
8 obligated party that they can make up the  
9 difference and do what is in their economic best  
10 interest. Okay.

11           The other thing is E85 infrastructure is  
12 going to be needed to meet the RFS2 standards and  
13 the Low-Carbon Fuel Standards. The near-term --  
14 and when I say near-term, five, I don't know how  
15 many years out. What is out there is cellulosic  
16 ethanol and maybe some advanced biofuels. But we  
17 have not -- we don't know of any fuel yet in big  
18 quantities that isn't going to hit the ethanol  
19 blend wall or maybe the B-5 blend wall, okay.

20           The EPA has been asked to take care of  
21 the uneven playing field issue by moving  
22 compliance to titleholders at or above the rack.  
23 We'll see what they do. They may not do that in  
24 the proposed rule but there's time for public  
25 comment and they may change their mind in the

1 final rule.

2 The Air Resources Board has gone halfway  
3 or the majority of the way here. What they have  
4 done is said that if a refiner/importer sells to  
5 another refiner/importer above the rack that the  
6 person they sell to automatically take on the Low-  
7 Carbon Fuel Standard obligation. Valero thinks  
8 that should apply to all parties above the rack.  
9 We are not talking a huge amount of parties. Like  
10 I said, it's above the rack before we put it into  
11 trucks to service stations, we are not about  
12 service stations.

13 There's a lot of waivers in case the  
14 volumes can't be met. I'll let the EPA talk more  
15 about them. It's a good thing, they may be  
16 needed. Cost-conscious consumers may want to go  
17 back and read this slide in more detail,  
18 especially the price that the EPA is going to sell  
19 the cellulosic ethanol RINs for because it could  
20 be just another cost that somehow somebody is  
21 going to have to pay.

22 I can take some questions now or if you  
23 want to wait until the blend wall presentation.  
24 Because that's really the main infrastructure  
25 issue where all this is taking us.

1           Okay, now we know why we are coming to  
2     the blend wall. And what I want to try to do is  
3     show you when exactly we might hit it. Though  
4     it's because of various issues it's sort of a  
5     multi-year time span. And what the implications  
6     are of hitting it and what the costs are to get  
7     around it.

8           Okay. First just to review. What is  
9     the blend wall? Well, existing EPA fuels  
10    regulations cover the amount and type of  
11    oxygenates that can be added to gasoline. They  
12    are called the Substantially Similar regulations,  
13    or Sub-Sim.

14           The reason they were put into effect was  
15    to make sure that what was added to gasoline  
16    resulted in the final fuel being substantially  
17    similar to gasoline that didn't have any  
18    oxygenates. Substantially similar to E0. The  
19    reason for this was they didn't want to have  
20    performance problems and they didn't want to have  
21    failure of the emissions control systems, which  
22    the OEMs, original equipment manufacturers, are  
23    responsible for ensuring work for different  
24    periods of miles in the car.

25           The -- I forget exactly what party but

1       somebody applied for an E10 waiver. At the time  
2       the regulations allowed the waiver applications to  
3       be automatically approved if the EPA did not act.  
4       The EPA never acted on the E10 waiver and it  
5       became an approved blend under Sub-Sim, okay.

6               Growth Energy and 52 ethanol producers  
7       not including Valero petitioned the EPA to allow  
8       E-15 as a means to get more ethanol into the pool.  
9       The waiver also supports the EPA immediately going  
10      to E12 or E13.

11             The regs or the waiver approval process  
12      changed with EISA in 2007. For a waiver to be  
13      approved now it can't be by default. EPA has 270  
14      days to act affirmatively or negatively. Which  
15      takes us I think sometime in December.

16             At the NPRA annual meeting General  
17      Motors made a presentation. They were worried  
18      about the lack of long-term durability testing of  
19      the emission systems and the cars' components for  
20      E15 and E20. The majority of the tests cited in  
21      the waiver are all short term tests.

22             The small equipment manufacturers do not  
23      support blends over E10. They are worried about  
24      actually engine failures and safety issues. The  
25      engines run hotter. Sometimes in some instances



1        throttles will automatically engage. There have  
2        been cases where a chain saw, the chain will start  
3        moving without pulling the trigger when the engine  
4        is just idling.

5                The RFA admits that E12 and E13, E15 or  
6        E20 are short-term solutions. They won't get us  
7        to 36 billion gallons, the end game in the RFS2.  
8        you are still going to need to go to some E85.

9                Other questions. There is a one pound  
10       summer RVP waiver for conventional gasoline if you  
11       are using ten percent ethanol. Would this apply  
12       to mid-level blends? And is this in some way  
13       violating the boutique fuel regulations?

14               Okay, what would an E15 or E20 waiver do  
15       or 12 or 13? CARB IIIA is going to be limited by  
16       the predictive model blending constraints. It is  
17       going to stay at ten percent max.

18               RFG can't go over ten percent due to the  
19       regs and the complex model you have to use. So it  
20       is only going to affect 59 percent of the gasoline  
21       pool, just the conventional gasoline.

22               When you blend ethanol in the gasoline  
23       changes. Octane goes up, which is good. RVP  
24       increases. If we just look at going from E10 to  
25       E20 or to E15, to say what would the waiver do?

1 Octane goes up. RVP actually at that point, once  
2 you get past E10 would start to decrease a little  
3 bit. T-50 decreases from some blends and stays  
4 about the same for the other. And the vapor to  
5 liquid ratio increases. Which could back out C-5s  
6 out of the gasoline pool. But it changes the  
7 properties of the finished gasoline.

8 The problem is the blue states here and  
9 the green states require -- state laws require  
10 gasoline to meet the ASTM standards of 4814 after  
11 ethanol is added. So an E12, E13 could require a  
12 different base gasoline than an E10. Or would --  
13 an E15 would require a different base gasoline  
14 than an E10.

15 Okay, when do we hit the blend wall? If  
16 I just look at the RFS2 requirements we are going  
17 to hit it sometime in 2013. Could we hit it  
18 earlier? Yes, if you look at how fast a rate the  
19 US has been blending gasoline into the  
20 conventional gasoline pool.

21 Now it did drop from December of last  
22 year. You can see actually a peak in September  
23 then coming down and then drop to January. But if  
24 you reestablish that historical rate of increase,  
25 maybe this is optimistic, but you could be

1 blending ethanol at essentially near 100 percent  
2 of the conventional pool by the end of this year.  
3 That would mean you would be blending more ethanol  
4 than the RFS regulations require you to.

5 Okay. Then comes the RIN balance issue.  
6 Remember, or you probably don't because it's too  
7 much information. Obligated parties can run a  
8 deficit for one year. The RINs are the credits  
9 that can be carried over for one year.

10 We had about a billion extra RINs  
11 generated in '07. Assuming they were used in '08  
12 and we generated extra RINs in '08 we have RINs to  
13 use in '09 that are from the prior year. So we  
14 don't have to blend at the RFS level this year to  
15 meet the regulations, the industry as a whole,  
16 because we have credits from the prior year.

17 Depending on how fast, how much ethanol  
18 is blended this year, compliance with the RFS  
19 regulations may not occur until 2014. This would  
20 be assuming you ran out excess RINs in 2013, as a  
21 whole the industry ran a deficit. And then come  
22 along 2014 when your given refiner or importer  
23 can't run a deficit two years in a row, then we  
24 would be in, you would have to blend more ethanol  
25 to meet the regs. So the blend wall, you know, is

1       somewhere out there 2011 to 2014.

2               The bigger issue I think in the near  
3       term is going to be assuming the RFS regs are out  
4       and applying in 2011, is there going to be enough  
5       advanced biofuel, cellulosic ethanol and biomass-  
6       based diesel for 2011 compliance.

7               Okay, here is the real problem and it's  
8       the car warranties. The bottom line is if you put  
9       in E12 or E13, if the EPA grants waiver, does a  
10      gas station turn over just sell 100 percent E12 or  
11      E13? If E15 is allowed does the station just quit  
12      selling E10 and sell E15, okay?

13              Well, the original equipment  
14      manufacturers, their warranties don't apply to  
15      blends over E10. And as GM said in the NPRA  
16      annual meeting, 90 percent of the cars are out of  
17      the original equipment manufacturer's warranty.  
18      Good luck. What about the extended warranty  
19      companies? They have been totally silent on this  
20      issue. I haven't heard from any of them.

21              I think that unless all manufacturers,  
22      OEMs and all extended warranty companies say that  
23      the warranties are valid for the current end-use  
24      fleet, any ethanol, mid-level level ethanol blend,  
25      12, 13, 15, 20, is going to have to be a separate

1 grade at the retail outlet. Which means you have  
2 the same infrastructure needs as E85, it's a  
3 totally new grade.

4 What do you need? Well most retail  
5 outlets do not have an extra gasoline tank in the  
6 ground. They are going to need a new tank, lines  
7 and pumps that are hopefully UL certified. Right  
8 now none of the dispensing pumps are UL certified.  
9 You have to go to the local fire marshal and get  
10 approval for putting in a E85 pump.

11 And like I said, if there are two  
12 different grades out there you have to do the same  
13 thing, whether it be 12 or 13, 15 or E20.

14 The economics. My speaker notes on this  
15 say that -- point this out because it really is  
16 important. You have a high cost. And this  
17 assumes you have to add another tank. But even  
18 without another tank the lowest figure I have seen  
19 is somewhere around 20,000 per retail outlet.

20 SIGMA in 2006 quoted \$50,000 to \$200,000  
21 per retail outlet.

22 Eighty percent of the gasoline out there  
23 is sold at convenience stores. Sixty-two percent  
24 are a one store operation; 70 percent are ten  
25 store operations or less. Less than three percent

1 are owned and operated by one of the five major  
2 oil companies. So basically 80 percent of the  
3 retail outlets out there the oil companies don't  
4 own, they're small businesses. They are going to  
5 have to bear the costs to put the tanks in. A  
6 major oil company can't force somebody to put in a  
7 tank and a new pump on their property.

8 And what do they earn? Well, The  
9 National Association of Convenience Stores said  
10 the average was \$36,000 profit per store in '04,  
11 SIGMA had a \$34,000 figure. A recent number for  
12 2008 from NACS was 45 but that was applied against  
13 all the stores, not just the ones that sell  
14 gasoline. So it probably could be on a different  
15 price or a different, a slightly different basis  
16 there.

17 The store may lease its land and  
18 equipment. It would have to get the owner's  
19 approval.

20 If I switch a pump out because I don't  
21 have room for another pump and put in a E85 pump,  
22 then during the busiest times of day I may lose  
23 total sales volume because I am not going to have  
24 a large percent of the cars coming in using the  
25 E85 pump. I'm just trying to think as a small,

1 retail gasoline or convenience store operator.

2 And like I said, refiners and importers  
3 can't force these little guys to make the  
4 expenditures.

5 Solutions. I don't have the silver  
6 bullet. I mean, you could mandate E85 pumps, it's  
7 not recommended. A mandate just generates  
8 unintended consequences. You may drive these guys  
9 out of the market, out of business.

10 You could provide incentives, which  
11 could help and work if structured properly. But  
12 they would need to be applied to all retail  
13 outlets regardless of ownership.

14 And you would need to provide some cash  
15 flow relief. If I'm making \$36,000 or \$30,000 a  
16 year after tax and now I've got to spend \$100,000,  
17 giving me \$20,000 in tax relief, I still need a  
18 loan for \$80,000, you know. You put me in a cash  
19 flow bind. You know, I've got two girls in  
20 college. I think about cash flow because I'm  
21 negative right now.

22 The other thing is market solution. You  
23 could do nothing and wait for the market to work.  
24 Maybe this will work out.

25 The EPA could issue waivers. It may

1 have to if we can't get the volumes in in time  
2 because the infrastructure isn't there.

3 Can CARB do this for the LCFS? Is CARB  
4 considering having provisions in their regs in  
5 case they run into problems?

6 And maybe Congress can change the law if  
7 it is not workable.

8 You could still have the same issues for  
9 going above B-5. I don't know the original  
10 equipment manufacturers' warranties for going  
11 above B-5 blends, if they hold.

12 So I think a combined solution of  
13 incentives and regulatory review for feasibility  
14 is really going to be required that we have enough  
15 transportation fuel out there.

16 This one is really a hard nut to crack.  
17 It is not going to cars that burn unleaded  
18 gasoline and you know you are going to have a  
19 market. You are going to cars that have E85 and  
20 the owner of the E85 may not fill up.

21 And then you have the fueling issues.  
22 The nozzle that goes into the flex-fuel vehicle  
23 fits in a regular car. And if I price \$2 gasoline  
24 at a \$1.60 because the energy content is lower so  
25 they get the same dollar per mile, are people



1 going to start putting E85 into regular cars  
2 because they think they are going to save a bunch  
3 of money? You know, how big can I put the letters  
4 on the pump that says, do not put in a normal car,  
5 you'll damage it.

6 Thank you very much. Do you have any  
7 questions?

8 VICE CHAIRMAN BOYD: Yes, retirement is  
9 looking real good to me about now. I thought I  
10 understood all this stuff through all these years.

11 A quick question again to see if I am  
12 totally confused. Will Californians ever see  
13 anything other, at present, than E10 or E85?

14 MR. BRAEUTIGAM: Well, for the basic  
15 CARB Phase IIIA amendments that pretty much is  
16 going to be limited to E10. It just gets very  
17 hard to go above E10 and meet the emission  
18 standards. E85, we have the flex-fuel vehicles  
19 out there. I haven't done a, I don't know how  
20 much natural gas or plug-in electric hybrid  
21 penetration is going to be.

22 VICE CHAIRMAN BOYD: I guess I was  
23 really limiting it just to petroleum. It's kind  
24 of becoming the island nation state of California  
25 versus everyone else facing all these other

1       sliding scale percentages on petroleum, gasoline.

2               MR. BRAEUTIGAM: I think, I think  
3       petroleum gasoline you are just going to see E10  
4       and E85. You may see some isolated outside of  
5       California in the conventional gasoline areas.  
6       You may see some people, if the EPA grants a  
7       waiver, going to higher percentages. I don't  
8       think you are going to see a major branded station  
9       offering those higher percentages unless they are  
10      a separate pump, because of the warranty issue.

11              Common sense, if I am going to put in  
12      money or if I'm trying to just get ethanol into  
13      the market, why would you turn down, why would you  
14      not go E85? It's got 85, actually 74 percent on  
15      average ethanol, versus E15 is only 15.

16              VICE CHAIRMAN BOYD: Good question.

17              PRESIDING MEMBER BYRON: Mr. Braeutigam,  
18      I agree with Commissioner Boyd, I hope there's no  
19      test after this presentation.

20              (Laughter.)

21              PRESIDING MEMBER BYRON: You talk about  
22      the warranty issue. And really isn't that a  
23      liability issue? I mean, who is going to assume  
24      the costs for all the lawsuits that would result  
25      from these problems.

1           MR. BRAEUTIGAM: Yeah. I can't speak  
2       for the OEMs and the extended warranty companies  
3       as to what they would or should do. I'm just  
4       looking at it from a fuel provider. If --  
5       decisions haven't been made but I would think that  
6       most fuel providers, if they offered anything over  
7       E-10, would want to make it a separate pump.

8           So therefore what I'm saying is these  
9       near-term, quote, band-aids or temporary  
10      solutions, have the same infrastructure problems  
11      as E85, it's a separate pump, a separate tank.  
12      And at huge costs for, you know. It's not coming  
13      after the deep pockets of the oil companies.  
14      Eighty percent of these stations out there are  
15      little guys.

16           PRESIDING MEMBER BYRON: Well thank you,  
17      very good presentations.

18           MR. BRAEUTIGAM: That wasn't admitting  
19      we have deep pockets. You have a public record.

20           MR. SCHREMP: I have a couple of  
21      questions, John, if you have a few minutes here.  
22      So just to clarify, the Renewable Fuel Standard  
23      appears to have obligated parties on the supplier  
24      and the creation side, that would be the  
25      refineries and the importers of record. There is

1 no retail obligation in the Renewable Fuel  
2 Standard that you are aware of?

3 MR. BRAEUTIGAM: No retail obligation in  
4 it. The only thing that applies at retail is to  
5 get the one pound RVP waiver in conventional  
6 areas, the gasoline must be between nine and then  
7 percent ethanol. Nothing to do with the RFS or  
8 the RFS2 regs.

9 MR. SCHREMP: And I guess a sort of  
10 follow-up question. If there is no obligation at  
11 retail to install E85, which from what you have  
12 described here sounds fairly expensive for the  
13 typical independently owned and operated station.  
14 Valero does own and operate some stations in the  
15 United States and in California. Would you guys  
16 consider that kind of money to install E85  
17 infrastructure?

18 Because from what you have described so  
19 far, John, it seems as though we have E10 as an  
20 option here. Then beyond that it would  
21 essentially have to be E85. So any consideration?  
22 I know maybe it's a bit too premature but any  
23 comment you can make at this point?

24 MR. BRAEUTIGAM: We haven't made any  
25 final decisions. We do want to do our best to

1       comply with the RFS2 regulations. The problem is  
2       we look at the same economics as the little guy  
3       when he's looking at putting in an E85 pump. How  
4       do we justify that cost.

5               PRESIDING MEMBER BYRON: In fact, if I  
6       were using your number, I think you had \$50,000 to  
7       \$200,000. So pick an average number, pick a low  
8       number, \$100,000.

9               MR. BRAEUTIGAM: That's a good one.

10              PRESIDING MEMBER BYRON: How many  
11       stations? Was it 9,000 I read earlier? More?

12              MR. BRAEUTIGAM: There's 115,000  
13       convenience stores that sell gasoline under those  
14       two combined organizations across the country. I  
15       don't know the California stations. Ten percent  
16       of that maybe if you guys have 10 percent or 11  
17       percent of the gasoline supply.

18              MR. SPARANO: Ninety-five hundred.

19              MR. BRAEUTIGAM: Ninety-five hundred,  
20       Joe Sparano says.

21              PRESIDING MEMBER BYRON: So that's about  
22       \$1 billion in replacement costs.

23              MR. BRAEUTIGAM: Ouch.

24              PRESIDING MEMBER BYRON: For the  
25       additional tank.

1           MR. BRAEUTIGAM: That would be tank,  
2 lines and pumps.

3           PRESIDING MEMBER BYRON: Thank you.

4           MR. SCHREMP: I guess a final question  
5 from me, John, you may not be able to address it.  
6 But in your laundry list you talk about solutions.  
7 And since there is no retail obligation for the  
8 RFS2 it looks like we are going to have to go to  
9 E85 if there is, I guess, no rescinding of these  
10 mandated levels in California.

11           Don't you also need -- let's say you get  
12 past the E85 dispensers issue, the chicken and  
13 egg. Don't you also have to have a sufficient  
14 number of flexible fuel vehicles? I know you guys  
15 don't make those and Jim Frusti is going to be  
16 talking from Chrysler here. But don't you need to  
17 have that also into the system? And then if you  
18 are going to have that don't you have to start  
19 selling an appreciatively higher percentage to get  
20 enough in the existing vehicle fuel mix because we  
21 hang on to our vehicles so long?

22           So even if you have the dispensers, you  
23 have an adequate supply of ethanol. How do you  
24 get it into the vehicles or the end use? I mean,  
25 isn't that also another very important issue that

1 still needs to be addressed.

2 MR. BRAEUTIGAM: Yes. And while Valero  
3 does not plan on buying any automobile  
4 manufacturers at this point we have branched into  
5 ethanol.

6 I have seen -- you will need substantial  
7 production of flex fuel vehicles. I have seen a  
8 projection of -- I'm sorry, I haven't seen  
9 Chrysler's presentation. I keep on saying GM.  
10 It's only because that was the most recent project  
11 at the NPRA annual meeting. They had a projection  
12 which they felt was possible of flex fuel vehicle  
13 sales. And then if you can get the majority of  
14 those to buy the fuel.

15 The NACS has made comments that the E85  
16 needs to be about 20 to 30 cents below regular  
17 gasoline for consumers that have flex fuel  
18 vehicles to want to use it.

19 If you look at an energy content basis  
20 it gets -- it will vary some during the year  
21 because the percent ethanol varies during the  
22 year. You really to need to be about 77.5 percent  
23 of E10, okay, for to get the same energy content.  
24 And since you can't undo or repeal the laws of  
25 thermodynamics that will be the difference in the

1 miles per gallon on average.

2 VICE CHAIRMAN BOYD: So I can't go to a  
3 Valero someday and buy transportation fuel,  
4 groceries and a Hummer?

5 (Laughter.)

6 MR. BRAEUTIGAM: No. Well maybe. Maybe  
7 we would have a Smart car or one of the high  
8 efficiency, or high MPG cars from the US auto  
9 manufacturers.

10 MR. SCHREMP: Thank you very much, John,  
11 that's a wealth of information. Certainly  
12 speaking for staff, we will be probably coming  
13 back to you for some additional input as we work  
14 through this issue and develop it in our, in our,  
15 in our staff report development process.

16 Our next speaker is Jim Frusti, which is  
17 a great opportunity. My segue question to  
18 flexible fuel vehicles. And if Jim could maybe  
19 address some of that as part of his process or any  
20 questions afterwards we'd greatly appreciate it.

21 MR. FRUSTI: Members of the Commission  
22 and members of the audience, good morning. Just  
23 speaking on behalf of the automakers, auto  
24 manufacturers, I just want to say that no matter  
25 the fuel or energy, we do care that there is



1 infrastructure out there and it's ready to use and  
2 ready for fuel to be input into our vehicles. So  
3 no matter whether it's hydrogen, alternative fuel  
4 or whatever, we do care that the infrastructure is  
5 there. Because it is almost pointless to make  
6 technology out there available, and if we have no  
7 way to fuel our vehicles we ain't going no place.  
8 So we do care very much about this workshop today  
9 and that advances are made with the  
10 infrastructure.

11 Just to also state that this topic about  
12 mid-level blend ethanol. Many people talking  
13 about mid-level blend ethanol are wondering, well  
14 what's the levels? Typically people are talking  
15 about E15 to E20. The blends go anywhere from  
16 E15, 20 all the way up to E85 and even E100 of  
17 course in some cases overseas. But for the  
18 purposes of this presentation I'll be focusing on  
19 E15, E20.

20 From an automotive manufacturer  
21 perspective we see a number of different drivers.  
22 And some of these things I am going to go through  
23 rather quickly because John did such a nice  
24 presentation he answered a lot of the questions  
25 and spoke to some of the things that I am going to

1 be covering as well.

2 Of course the primary driver was the  
3 EISA 2007 mandate for clean, renewable,  
4 alternative energy. Although there were other  
5 things in the EISA there is a focus on liquid  
6 fuels and the Renewable Fuel Standard. And what  
7 we saw as the underlying objectives, of course,  
8 are America's energy security and greenhouse gas  
9 reduction. And then accomplished through  
10 homegrown fuels and greater efficiency.

11 In the RFS it was a focus on ethanol to  
12 start with.

13 And going from alternative fuels that  
14 evolve from food feedstock to advanced biofuels.

15 And it was said also in a prior  
16 presentation that the various studies by EPA and  
17 others have shown that the mid-level ethanol is  
18 only a temporary conduit and won't achieve EISA  
19 RFS mandates.

20 And as Gordon just said, there is a call  
21 to auto manufacturers, make more vehicles capable  
22 to use the over-supply of ethanol.

23 A number of different people have  
24 concerns about the capability or compatibility of  
25 the vehicle legacy fleet to use mid-level blends.

1           And of course this requires follow-  
2 through on comprehensive, independent testing.

3           And also it was mentioned, was the E15  
4 waiver application by Growth Energy.

5           I'm going to focus on just three of the  
6 bullets from the prior page. And these really  
7 focus on the -- first the underlying drivers that  
8 are really about reducing greenhouse gas and  
9 energy usage.

10          And then speaking about FFVs and E85  
11 utilization and challenges and how that plays into  
12 this mid-level topic as well.

13          And then the effects analysis for mid-  
14 level blends, not only from an automotive but  
15 other equipment standpoint.

16          First off from a vehicle and fuel levels  
17 to reduce greenhouse gas emissions. From the  
18 vehicle standpoint and the challenge to the  
19 automakers I think we all know that Congress and  
20 the administration in California understand the  
21 significance of the transportation in the nation's  
22 greenhouse gas inventory.

23          The vehicle component was handled well  
24 in EISA for maximum feasible technology going  
25 forward with its 35 mile per gallon requirement by

1 2020.

2 And also here again it's mentioned the  
3 requirement by 2022 of 36 gallons (sic) of  
4 alternative fuels. However, there is a  
5 shortcoming with the RFS in that a commercial  
6 viability determination in the future can allow  
7 for an adjustment of the goal.

8 Switching over to the fuel side. There  
9 is an opportunity. And this opportunity is well  
10 understood here in California and in Washington  
11 right now by the actions that have been taken in  
12 both of those places. Of course the opportunity  
13 is to challenge the fuel providers in a similar  
14 way, so much of that which has been put on the  
15 autos.

16 What is needed is a better mechanism for  
17 the production and distribution of alternative  
18 fuels so that they can be sold at a price less  
19 than gasoline or diesel when compared on an energy  
20 basis. Getting back to John's comments about the  
21 reduced energy from E85.

22 Application of max-feas technology on  
23 the vehicle will assure minimum use of energy.  
24 However, it is very basic. Any carbon into the  
25 tank is going to go out the tailpipe.

1           So we do need to phase down the carbon  
2       emissions at the maximum rate and target must be  
3       to take the carbon out of the liquid fuel pool. I  
4       think, again, many people in this room understand  
5       that.

6           Congress should direct EPA to create a  
7       rule to limit the carbon content in fuel in the  
8       form of a Low-Carbon Fuel Standard. And it could  
9       be modeled after EISA 2007. And there's a word  
10      missing here, vehicle fuel economy provisions, if  
11      you want to just note that.

12          Fundamentally a carbon cap on the liquid  
13      fuel pool attacks the key element, chemical  
14      element being carbon, for greenhouse gas reduction  
15      and climate improvement.

16          It complements EISA 2007 RFS and  
17      associated vehicle actions, the 2011 fuel economy  
18      standard, President Obama's goals for CO2 and  
19      greenhouse gas reduction, addresses energy  
20      security concerns.

21          And encourages or enables the fuel  
22      industry to develop fuels, processes and market  
23      strategies to achieve required carbon limits.

24          And fortifies a growing alternative  
25      industry and American jobs for the development,

1 production and sale of homegrown fuels or energy  
2 crops.

3 And that serves as a step towards a  
4 long-term vision.

5 Actions to date. Some federal and state  
6 actions have been taken or are underway for  
7 achieving a low-carbon fuel or are contributing to  
8 the greenhouse gas reductions.

9 However, a national program is needed to  
10 maximize the ability of using the scale of the  
11 transportation fuel distribution system to  
12 minimize the cost to consumers.

13 Some federal and state actions that have  
14 been taken have been diluted, we believe, by  
15 including the vehicle or other factors and thus  
16 diminish the maximum feasible technology towards a  
17 low-carbon fuel.

18 We think you need to focus on the fuel  
19 and the liquid fuel pool by itself and not put in  
20 the vehicle. The vehicle has been well-handled in  
21 what has been asked on it for maximum capability.  
22 Likewise you need to do the same thing on the fuel  
23 side.

24 So in summary, to secure its energy  
25 American needs to attack the carbon in fuel,

1       actively promote the development and technology  
2       for homegrown energy, and stay focused on a long-  
3       term vision for carbon-free energy and  
4       transportation.

5               These next several slides I am going to  
6       go through rather quickly and just focus probably  
7       more on the technical and policy challenges  
8       further on down.

9               But from an FFV/E85 challenge I am going  
10      to talk about availability of FFVs, portfolio  
11      expansion, E85 availability, utilization  
12      potential. And as I said, technical policy  
13      challenges and growth initiatives.

14              This chart just simply shows how the  
15      FFVs have grown over seven million and how  
16      Chrysler is a major producer of those vehicles.

17              Here's the various vehicles that  
18      Chrysler offers with flex fuel capability.

19              Just one bullet I want to emphasize  
20      here. Domestic auto makers have committed by 2012  
21      that 50 percent of their new light-duty vehicles  
22      will be capable of using alternative fuels. And  
23      that is contingent upon continued infrastructure  
24      development. Infrastructure is a key concern.

25              Availability of E85 fuel. E10 is at or

1       nearing 80 percent utilization for regular  
2       gasoline or non-FFVs.

3               And E85, approximately two percent  
4       utilization in FFVs. Of those seven million units  
5       out there only two percent of the fleet is being  
6       really utilized in terms of what could be put into  
7       those vehicles.

8               Of the 120,000 gasoline stations only  
9       1800 are capable with E85 stations.

10              And 90 percent of the FFVs do not have  
11      an E85 station in the same zip code.

12              In the backup, by the way, there are  
13      some nice charts that show you the concentration  
14      of E85 stations throughout the country and you can  
15      look at that at your leisure.

16              This chart just shows again the two  
17      percent utilization and how much could really be  
18      utilized in the fleet that's out there.

19              Of course EISA's set goals take us far  
20      beyond E10.

21              A high concentration of ethanol blends,  
22      E85, play a significant role in enabling EISA-  
23      based levels for ethanol supply growth.

24              In a recent GM and Sandia National Lab  
25      study they showed that cellulosic feedstocks could



1 allow biofuel production to reach 90 billion  
2 gallons of ethanol by 2030.

3 And again, mid-level blends can only at  
4 this point provide a temporary conduit. They  
5 cannot satisfy the required ethanol utilization  
6 mandates.

7 Now from a technical standpoint. A key  
8 take-away from this chart, this is Reid Vapor  
9 Pressure, is that the volatility of ethanol as it  
10 increases in percentage decreases and is a key  
11 slide that sort of sets up the next three slides I  
12 want to show you.

13 A couple of key take-aways on this chart  
14 here on the yellow boxes. Basically it shows in  
15 the first yellow box over here on the left that  
16 more excess cold start fuel is needed to offset  
17 the lower E85 volatility. You've got to pump a  
18 lot of E85 fuel into the tank for the colder the  
19 start.

20 Then what happens, the E85 excess fuel  
21 is vaporized and emitted earlier and more abruptly  
22 than gasoline, and that's why you see the red line  
23 jump up rather rapidly. Whereas the gasoline is  
24 much more of a smooth increase.

25 This just reemphasizes the mass of fuel

1       that is necessary to effectively start an E85 flex  
2       fuel vehicle. And you'll note even at 20 degrees  
3       F it's substantially higher than at 77 degrees.  
4       So those places where it is quite cold throughout  
5       the winter months will have a challenge with the  
6       E85 starting. And that plays right into this next  
7       chart as well.

8               I've got quite a bit of information on  
9       this chart but some key take-aways are this is not  
10      with flex fuel or E-85 at this stage but this is  
11      just the regular reformulated gas that is used  
12      here in California.

13             In order for us to meet the PZEV 50  
14      degree cycle test the catalytic converter must be  
15      functional within the first few seconds of the  
16      start of the test.

17             You will probably note at the very  
18      bottom of this chart down here that with our  
19      control strategies and the use of things like  
20      heated oxygen sensors or heated catalysts, that  
21      the blue line levels off pretty rapidly and we  
22      stay under the standard. But with the more  
23      advanced Lambda or O2 sensors to be able to make  
24      that an accomplishment.

25             Now when I am going to overlay on this

1 next chart is what happens when you put E85 on  
2 that same chart. E85 is a great challenge for us.  
3 The red line shows how much more rapidly the  
4 engine-out hydrocarbons rise when you have to pump  
5 so much E85 fuel into the vehicle at the start of  
6 the test.

7 Because you have to put so much more  
8 fuel in there, and the way that ethanol behaves,  
9 it is very, very difficult for us to be able to  
10 meet the standard. Even with things like  
11 supplementary air or secondary air we are not able  
12 at any of the auto manufacturers yet to come out  
13 with a PZEV package in the state of California  
14 with an FFV. None of our FFVs have been able to  
15 come up with a means to satisfy this requirement.  
16 So there's a limiting factor right there.  
17 Attainment of emission standards can be very  
18 difficult for us.

19 What this also shows by the way, if you  
20 look up on the upper end of the chart there, is  
21 the Lambda sensor and its challenge in dealing  
22 with E85 fuel. You see wild swings, especially  
23 with the red versus the blue line.

24 And what's happening because of the gas,  
25 and you have to put so much ethanol into the tank

1 to get it started, you get an overly rich  
2 condition. The Lambda sensor switches back and  
3 says, well I've got to go lean. And it goes back  
4 and forth between lean and rich operation and you  
5 get these wild swings. And then we end up not  
6 only not meeting the hydrocarbon standard but we  
7 also have a challenge with NOx then too. So it's  
8 both of those elements that we are having a  
9 challenge in the state of California with the PZEV  
10 requirement.

11 Just some growth initiatives for the  
12 industry. Of course we say that there needs to be  
13 target E85 growth activities for FFV  
14 concentration. More pumps, pumps in the right  
15 places.

16 The increased rate of FFV population has  
17 some regulatory and technical challenges.

18 We have said before that ethanol prices  
19 must be less than the price of gasoline or diesel  
20 when compared on an energy basis.

21 And we think that there should be a low-  
22 carbon fuel cap, and again, focused just on the  
23 liquid fuel form.

24 Now I'll switch over to the mid-level  
25 blend ethanol testing. The effort really started

1 in 2007 with the push for mid-level blends about  
2 that time.

3 Domestic automakers and subsequently  
4 other autos from around the world joined to draw  
5 on their global experience and identify potential  
6 failure modes.

7 They focused on areas of known concerns  
8 based on their experience and literature.

9 And they designed a plan to look at  
10 durability effects. And that's getting to John's  
11 comments about how GM has been concerned about  
12 durability, so has Chrysler, so has Ford, so are  
13 the other autos concerned about the durability of  
14 how mid-level is going to behave on our legacy  
15 fleet.

16 The other thing they did is they engaged  
17 the Coordinating Research Council. And under the  
18 CRC's leadership the test program really has grown  
19 into a much larger effort, now referred to as the  
20 Mid-Level Ethanol Blends Research Coordination  
21 Group, and it includes members from auto, oil,  
22 marine, outdoor power equipment, engine  
23 manufacturers, motorcycle and the government, DOE  
24 and EPA, and RFA, the Renewable Fuels Association.

25 And test plans have been developed or

1 initiated or are under development for the  
2 vehicle, boats, outdoor power equipment, small  
3 engines. And CRC has just now received some  
4 proposals from these other industries that they  
5 are now considering in their committees in terms  
6 of the test plans they have for those kind of  
7 products.

8 This just summarizes again who are some  
9 of the companies from the auto and oil who are  
10 engaged in this vehicle plan.

11 Here are the major elements of the test  
12 plan for the mid-level ethanol program. Fuel  
13 storage and handling. Pump, tank, level sender,  
14 fuel line damper, fuel injector and rail.

15 Base engine durability.

16 On-board diagnostics evaluation.

17 SULEV and cold ambient operation.

18 Catalyst durability and degradation.

19 Evaporative emissions.

20 Emissions inventory and air quality  
21 modeling. I'll just say that as we gather data  
22 for exhaust emissions or evaporative emissions or  
23 evaporative emissions, those information, that  
24 data will be then plugged into inventory, emission  
25 inventory and air quality modeling to see what the

1 effects are on regional air quality throughout the  
2 states.

3 And then exhaust emissions on aged  
4 vehicles. I'll just again say this is an  
5 important aspect to the whole test program. It  
6 needs to be independent, it needs to be  
7 comprehensive and it needs to have that  
8 independence so people say, it's not just the  
9 autos saying, this is what we think needs to be  
10 tested or here are the results, but others such as  
11 the Coordinating Research Council has to really  
12 take that lead.

13 In the backup there's a lot of details  
14 on all the test programs but I will take you  
15 through real quickly just one of the programs that  
16 GM and Chrysler are leading and that is the Base  
17 engine Durability Program.

18 Of course this program looks at the  
19 effects of mid-level blends on the engine  
20 durability, whether it is from the engine control  
21 or whether it's on the engine itself.

22 Engine deterioration or failure due to  
23 ethanol usage will have a significant effect on  
24 the public support for ethanol. We don't want,  
25 and I'll state that very strongly. We don't want

1 ethanol to get a bad eye. We are a strong  
2 advocate in the auto industry of alternative  
3 fuels. We think ethanol and the various biofuels  
4 and the various things that are being considered,  
5 we want to be a success.

6 There have been other cases in the past  
7 history where certain technologies may have gotten  
8 black eyes. And our public has a long memory  
9 about what doesn't work and why they wouldn't want  
10 to ever consider that.

11 I'll give an example like diesels.  
12 Diesels didn't come out too smart in the beginning  
13 but boy oh boy, people still think they are not so  
14 good. But diesels have come a long way and it's a  
15 pretty good package now. If you have driven any  
16 European diesel package, or even here in the  
17 States, they are a much effective power train  
18 package these days.

19 Likewise we don't want ethanol to get a  
20 bad rap. And we want it to be successful so we  
21 want to make sure we complete the testing.

22 The goal is to document the composition  
23 threshold and the extent of engine damage due to  
24 mid-level ethanol blends. I will say that much of  
25 the programs that I have mentioned, all eight of



1       those different ones on the prior slide, we really  
2       wanted to look at a range of ethanol. E0, E10,  
3       E15, E20, so you could see what's happening from a  
4       trend standpoint. And say, where is the threshold  
5       where you have a challenge in terms of being able  
6       to either satisfy emission requirements or have  
7       some kind of performance issue or have something  
8       that is going to put us awry with our vehicle from  
9       either a compliance or from an operational  
10      standpoint.

11               The Statement of Work is out for bid  
12      right now. In fact I just saw that go out in the  
13      past week. And we are moving forward on that.

14               This last slide here. A little bit  
15      complex but it does show the overall status of the  
16      research on the mid-level blends. Just in the  
17      colors real quickly. The green and the blue on  
18      this chart are the comprehensive programs. The  
19      blue are -- the green, comprehensive programs that  
20      have been completed and the blue that are under  
21      development. The yellow are those preliminary  
22      partial or screening programs where we have  
23      started things but have not determined how we will  
24      complete those programs.

25               And the biggest issue with completing

1 some of those programs, that some of these  
2 durability programs are very costly and CRC does  
3 not have sufficient funding. And we are looking  
4 to DOE, who has been given some funding in recent  
5 times, to maybe help out like they have done so  
6 nicely on some other programs to help us complete  
7 some of these important test programs.

8 And with that I'll turn it over for any  
9 questions or maybe the next speaker.

10 VICE CHAIRMAN BOYD: Well thank you,  
11 Mr. Frusti. You broached several things that are  
12 to me quite interesting, one of which has been  
13 with us for a long, long time and I know we always  
14 keep sweeping it under the rug. And that is, we  
15 have had flex fuel cars for years and we have had  
16 no fueling infrastructure therefore for years.  
17 And we seem incapable of solving that problem and  
18 it is still -- it's rampant in your presentation  
19 and it is still an issue we have all known about.

20 So that's just a statement. I don't  
21 have a question in that unless you have an answer.

22 MR. FRUSTI: No, we have a frustration.  
23 By the way, it's not just in -- and I won't go  
24 into detail but there are other new energies  
25 coming on the market but the infrastructure isn't

1       there.  If we don't get the infrastructure why  
2       build the vehicles?  Why put all the money in if  
3       we aren't going to have the infrastructure behind  
4       it?

5               This conference or this workshop is so,  
6       so important.  We want the infrastructure because  
7       we want to put out products that are clean, smart,  
8       do the right thing for our environment and  
9       conserve energy.  And the only way we are going to  
10      do that is with the right infrastructure.  We  
11      support you.

12             VICE CHAIRMAN BOYD:  This is not a good  
13      time to ask if Chrysler wants to start a network  
14      of fueling stations, or General Motors or Ford or  
15      anybody else.

16             MR. FRUSTI:  No, absolutely not.

17             VICE CHAIRMAN BOYD:  The other thing  
18      that surprises me a little bit, since alcohol has  
19      been a fuel used not by the general public but  
20      used for a long, long time in engines to move  
21      things fast, et cetera, et cetera.

22             MR. FRUSTI:  Right.

23             VICE CHAIRMAN BOYD:  I am a bit  
24      surprised that it has taken until now to start,  
25      you know, the durability studies on various

1 blends. But that is not a criticism, it's just  
2 kind of --

3 MR. FRUSTI: Right.

4 VICE CHAIRMAN BOYD: Gee, we don't know  
5 all this by now after we have been talking about  
6 alcohol fuels and various blends thereof for more  
7 than a decade.

8 MR. FRUSTI: What might be done in the  
9 racing environment, or what might have been done  
10 in people's backyards is one thing. But really --  
11 and you know this about anything that we develop  
12 in the auto industry. We go through a  
13 comprehensive design development and making sure  
14 that a product that we put out on the market can  
15 sustain. You know, the whole thing with E85 and  
16 with alternative fuels has grown quite rapidly in  
17 the last couple of years. And so now maybe we're  
18 playing a little catchup too.

19 VICE CHAIRMAN BOYD: But it goes to my  
20 first point. Flex fuels have been out there for a  
21 long, long time so the industry knew it was  
22 putting vehicles out there that could burn, you  
23 know, flexible fuel. And it could be E-whatever  
24 all the way up to E85.

25 We're getting a real slow start on

1 looking at the consequences of various blends of  
2 ethanol into gasoline, even though we have had  
3 flex fuels for years and years and years.  
4 Garnering all those CAFE credits I guess. Okay.

5 MR. FRUSTI: Good point.

6 VICE CHAIRMAN BOYD: Thank you.

7 MR. FRUSTI: Any other questions? Thank  
8 you.

9 MR. JANUSCH: Next up is Brooke Coleman.  
10 Is she here today?

11 MR. SCHREMP: Thanks a lot, Jim. Once  
12 again a lot of information, a lot of challenges.  
13 From what we are gathering so far we are going to  
14 have to go to an E85 world in California but there  
15 are a lot of infrastructure issues certainly that  
16 are still out there.

17 And I think staff will probably be  
18 coming back to you. We are very interested in  
19 your flexible fuel vehicle plans as a company.  
20 You mentioned that 50 percent is sort of what you  
21 are targeting but not necessarily 100 percent  
22 because you see some infrastructure lacking in  
23 that vein.

24 So we are interested in sort of what it  
25 would take to get up to a higher level. If that

1 is just solely a commitment or sort of a mandate  
2 if you will on the retail side for E85  
3 availability. You know, if that's something you  
4 think, you know, is necessary we're interested in  
5 getting some additional information from you guys.

6 And on a final note. We understand the  
7 E85 pricing at retail, we understand the discounts  
8 offered. And we in California know, or staff,  
9 we're looking at what type of pricing mechanism  
10 should be necessary to convey as much information  
11 to an FFV owner as feasible. And right now on a  
12 per gallon basis that's probably not as much  
13 information as you can provide. So I don't know  
14 if gasoline gallon equivalent pricing is something  
15 -- maybe Chrysler would think it would be more  
16 information to provide to an FFV owner. I don't  
17 know if you can comment on that or not.

18 MR. FRUSTI: I just have one quick  
19 comment. I don't know if you know what goes on in  
20 Sweden or in Brazil in terms of how they provide  
21 information to people as to what's the cheaper  
22 fuel for them on an energy basis.

23 They actually do provide that  
24 information at the pump so people can know whether  
25 I go E100, I go E22. It might be worthwhile to

1 look at what is being done in those two countries  
2 specifically and the type of information that is  
3 being done. Because I think it is probably not a  
4 bad idea in the United States. Let the consumer  
5 know what's the cheaper fuel on an energy basis  
6 and then they will buy it.

7 VICE CHAIRMAN BOYD: Now that raises  
8 another question for me because the Brazilians  
9 have been running, what, E25 roughly or something  
10 like that, for a long, long time.

11 MR. FRUSTI: Right.

12 VICE CHAIRMAN BOYD: What has it done to  
13 the durability of the vehicles that you all build  
14 in Brazil?

15 MR. FRUSTI: You know, it's interesting  
16 about Brazil. You talk about island nations or  
17 places where things are done in different ways.

18 Let me say this first off. The majority  
19 of people operating in Brazil have recognized that  
20 they need to put flex fuel there and they have  
21 made that a primary vehicle that they want to put  
22 on that market.

23 What we have not gotten a lot of  
24 feedback is the challenges with those vehicles in  
25 terms of the warranty standpoint. It has to do

1 with communication I think to a large degree. The  
2 -- I was going to mention something about the --  
3 hmm.

4 VICE CHAIRMAN BOYD: Well I don't know  
5 if Chrysler builds cars in Brazil but I know  
6 others do.

7 MR. FRUSTI: Right.

8 VICE CHAIRMAN BOYD: Certainly they must  
9 have a --

10 MR. FRUSTI: Right.

11 VICE CHAIRMAN BOYD: -- a vault full of  
12 data on what's happened to their vehicles.

13 MR. FRUSTI: Well what's interesting,  
14 again, how things are done in a foreign country  
15 can be very different, even in terms of warranty  
16 collection. I'll just say that. I wouldn't say,  
17 I wouldn't say we are very proud of that but  
18 that's not necessarily saying that there hasn't  
19 been problems.

20 You know, even in Brazil, you know,  
21 because they have E100 down there. They have even  
22 a separate little fuel tank that they will put  
23 regular gas in. So they will put E0 gas to be  
24 able to start the vehicle because you can't start  
25 E100 in a cold start condition down there. So



1       they have like an extra -- and you won't find that  
2       on a vehicle that comes out of the States and goes  
3       there.  It's something that's outfitted in Brazil  
4       so that they can, in fact, operate under cold  
5       start conditions in the market their E100 fuel.

6               So the bottom line is Brazil will do  
7       what it needs to do to satisfy its customer base,  
8       which is a very different customer base than we  
9       have in the states in terms of demands and  
10      expectations.

11             VICE CHAIRMAN BOYD:  And all Brazilian  
12      drivers carry a calculator.

13             MR. FRUSTI:  I don't know about carrying  
14      a calculator but they get some help, is my  
15      understanding, at the pump.

16             VICE CHAIRMAN BOYD:  They know what to  
17      do at the pump.

18             MR. FRUSTI:  Right, right.

19             MR. SCHREMP:  And just a final question,  
20      Jim.  It is our understanding that US EPA will be  
21      issuing a proposed rulemaking sometime soon  
22      associated with the Renewable Fuel Standard 2.  
23      And part of that information package is going to  
24      be containing, I guess, information on mid-level  
25      blends and I guess the feasibility of mid-level

1 blends.

2           Since you point out that there was some  
3 testing that's continuing and there's durability  
4 testing issues, information that still hasn't been  
5 completely gathered, is that going to be difficult  
6 to come out with sort of a final answer on mid-  
7 level blends at this juncture?

8           MR. FRUSTI: You mean from EPA?

9           MR. SCHREMP: Yes.

10          MR. FRUSTI: I think it is because even  
11 EPA said for the data that's out there they have  
12 not seen -- this is now going back before the  
13 waiver request came in.

14          MR. SCHREMP: Right.

15          MR. FRUSTI: That they hadn't seen  
16 sufficient data out there to really say that  
17 there's been enough comprehensive testing done  
18 yet. So I am real interested to see what RFS  
19 might say about mid-level blends.

20          And I think Paul is going to be coming  
21 up and speaking pretty soon. And if he has  
22 anything to say about that I'd be eager to see if  
23 he has any information to share on that. Because  
24 frankly we would love to hear if they have  
25 something to say about that.

1           MR. SCHREMP: Thank you, Jim. Apologize  
2           for keeping you a little bit longer with the  
3           questions.

4           John Braeutigam, you have a question?

5           MR. BRAEUTIGAM: Just a quick comment.  
6           GM at the NPRA annual meeting made a statement in  
7           their presentation that they were making cars  
8           different for the Brazil market. This wasn't ones  
9           that could to 100 E85 but for the mid-level  
10          ethanol blends. I forget the percentage that they  
11          decided to do that for but if you contact GM I  
12          think they'll give you the information.

13          VICE CHAIRMAN BOYD: Thank you. They  
14          must have known something, therefore.

15          MR. SCHREMP: Well thanks again, Jim.

16          Now I'll turn the microphone over to  
17          Brooke Coleman.

18          MR. COLEMAN: Thank you, Commissioners,  
19          Gordon, Jim. Appreciate the opportunity to  
20          provide the update on the state of the renewable  
21          fuels industry.

22          (Off the record discussion about  
23          presentation.)

24          MR. COLEMAN: Again, thanks for allowing  
25          me to come in and give an update on the state of

1 the renewable fuels industry. I was asked to  
2 stick to the script and the time. I have a lot of  
3 opinions on a variety of different things but one  
4 of them is the state of the renewable fuels  
5 industry.

6 Very quickly about the New Fuels  
7 Alliance. We are a national advocacy group with  
8 regional affiliates; one of them is the California  
9 Renewable Fuels Partnership. Some of these  
10 companies you see here are supporting companies in  
11 our coalition, whether it be in the Northeast or  
12 the West Coast.

13 We also have something called the  
14 Northeast Power Project. We built something  
15 called the Integrated Fuel Assessment Model, which  
16 allows power companies in real time to consider  
17 the decision metric with regard to blending  
18 biofuels. So as the economics and the credits and  
19 the carbon pricing changes this allows companies  
20 to keep up with that and figure out whether it  
21 makes sense to do that.

22 So the basics. This is the ethanol  
23 market today. The biggest thing here is you'll  
24 notice that there's a whole bunch of different  
25 numbers. And that's because there is a difference

1       between capacity to produce ethanol, the actual  
2       ethanol produced, how many gallons are on hold,  
3       and imports.

4               And so basically we have gotten to a  
5       point where obviously we have had significant  
6       growth in recent years and the economy is struck  
7       and there will be not as robust growth in coming  
8       years. There are some economic issues that we  
9       will talk about. But we are basically at the  
10      point of ten or so, ten and a half billion gallons  
11      of ethanol.

12             The biodiesel market snapshot is a  
13      little bit more difficult. I chose this slide not  
14      because it provides the most up-to-date  
15      information but because it actually reflects what  
16      goes on in the biodiesel industry oftentimes.  
17      This is a card slide.

18             You can see that the capacity  
19      historically is always greater than the actual  
20      production. And that's because people that  
21      process oils oftentimes will let the economics  
22      decide whether or not they are producing biodiesel  
23      or not. And so obviously as reflected by Joe  
24      Jobe's quote at the bottom, many of them are not  
25      at this point.

1           That does not mean that the vegetable  
2   oil processors stop working. So juxtapose that  
3   with the ethanol industry. If a plant goes  
4   offline you basically can say, well that plant is  
5   going to go offline and those gallons are going to  
6   come off and that plant is not going to be  
7   employing people.

8           In the biodiesel industry it's a little  
9   bit of a different metric where it's a little bit  
10  harder to figure out. A biodiesel plant may come  
11  offline but the actual business may keep going  
12  from a vegetable oil processing perspective.

13          And just to add a little recent flavor  
14  to this. The biodiesel industry probably get up  
15  around four or five, probably close to six  
16  million, 600 million gallons a year. And it has  
17  fallen off appreciably since then based on the  
18  economics.

19          Here are the US cellulosic ethanol  
20  projects. These are also a little tough to track  
21  because many of our members are on this list and  
22  these projects fly along at certain points and  
23  idle at other points. It depends whether they are  
24  between their series A, B or C or what have you.  
25  But there's somewhere in the vicinity of two dozen

1 projects. There are many more that are close to  
2 announcement. And there are several in  
3 California.

4 There is a new tool. It's not a US tool  
5 there at the bottom but apparently it keeps pretty  
6 good track of advanced biofuel projects on a  
7 worldwide basis. I've been watching it for all of  
8 about four days and they seem to, they seem to be  
9 fairly up to date.

10 But as you can see a lot of these  
11 companies have a diversified feedstock scenario.  
12 That is one thing that people seem to forget when  
13 they are talking about advanced biofuels. In the  
14 advanced biofuel space you have a situation where  
15 to raise money you often have to convince your  
16 investors that you have a variety of different  
17 feedstock options. And that's because the fuel  
18 space is extremely risky.

19 As we all know the prices fluctuate.  
20 And you have to be able to convince an investor  
21 that if this doesn't work then that will work and  
22 if this doesn't work then that will work. So a  
23 lot of the folks that say yeah, we're all about  
24 advanced biofuels and we want to be able to  
25 produce, as long as they use feedstock from

1 highway medians and waste vegetable oil and that's  
2 it, aren't really grasping the need to scale these  
3 projects and the need to have diversified  
4 feedstock scenarios and the need to compete in the  
5 fuel markets.

6 So I was asked to touch on the problems  
7 for the biofuels industry. They are many. They  
8 are somewhat, some of them are not unique to the  
9 biofuels industry. And I'm going to talk a little  
10 bit about them.

11 The supply and demand equation is out of  
12 whack. It is common for people to say, well,  
13 biofuels are paying for supply and demand right  
14 now. What is uncommon is for people to actually  
15 get past the veneer of that and say, well what  
16 exactly is wrong with the supply and demand  
17 equation. And I'll talk a little bit about that  
18 in the following slide.

19 You also have a situation where you have  
20 plunging fuel prices and easing commodity prices.  
21 Wholesale gasoline is down 70 percent but corn and  
22 soybeans and such are only down about 30 percent.

23 And so I often joke with some of our  
24 members that biofuels exist in that space between  
25 the water and the ceiling in those movies and they



1 are sort of sucking air between there. That's  
2 always been the case, it's a tough place to be.  
3 But when you have a situation where fuel prices  
4 plunge and your commodity feedstock prices only  
5 ease down you basically have less room for error.

6 The third option here, the third problem  
7 here is frozen credit and debt financing. That is  
8 not unique to the biofuels industry. But  
9 renewable fuel facilities are project-financed so  
10 debt is a reality of doing industry. And if you  
11 can't finance your plants you can't build them.

12 The fourth one is the constant stream of  
13 misinformation slowing the evolution of the  
14 industry. This is probably where there are  
15 several people in this room that don't want me to  
16 go. But there is no question that some of the  
17 public relations efforts with regard to food  
18 versus fuel, indirect land use change, ag corn is  
19 bad, that routine, has had a significant impact on  
20 biofuel investments.

21 And if you talk to the investors they  
22 will tell you that before the economic downturn  
23 occurred that things like food versus fuel scared  
24 investments away from advanced biofuels. So  
25 investors aren't just paying attention to numbers

1 on a chart, they are paying attention to politics  
2 and things like that. So that actually has  
3 chilled investment in advanced biofuels and so we  
4 need to get to an honest debate there.

5 And then the final one is fundamentally  
6 non-competitive US fuels markets. It's hard to  
7 say there's supply and demand problems when you  
8 have a situation where the market is largely  
9 mandate driven, there are blend walls due to  
10 vehicle warranties and regulations, and you have  
11 high consolidation in the markets.

12 Now I want to --

13 VICE CHAIRMAN BOYD: I'm going to  
14 interrupt you with a comment --

15 MR. COLEMAN: Sure.

16 VICE CHAIRMAN BOYD: That's been hanging  
17 in the back of my mind for the better part of the  
18 morning as people venture in and out of this area  
19 about feedstock availability or even comments that  
20 there isn't much of a feedstock availability in  
21 California for biofuels. And this is not directed  
22 at you. This is -- You're right, every time  
23 anybody brings up biofuels the next thing you hear  
24 is, food versus fuel, et cetera, et cetera.

25 And yet California has documented that

1       there's such an incredible amount of, admittedly  
2       cellulosic waste but waste material in this state.  
3       We have an incredible reservoir of material people  
4       can use to make biofuels. Forest waste for one,  
5       although we had a little trouble getting to some  
6       of it. We're knocking down those barriers. Ag  
7       waste is unlimited, both field waste and food  
8       processing waste. And we're doing a little bit  
9       better with cow manure than most of the others.  
10      And just urban waste. Urban wood waste, landfill  
11      material and what have you.

12               PRESIDING MEMBER BYRON: Don't forget  
13      median waste now.

14               VICE CHAIRMAN BOYD: I've never heard of  
15      median waste before this gentleman mentioned it.

16               MR. COLEMAN: Highway median waste, it's  
17      the new thing.

18               VICE CHAIRMAN BOYD: In any event, maybe  
19      we need to start a different campaign on what the  
20      source of some of these stocks of materials to  
21      make fuels out of might be. Because we can solve  
22      some other problems at the same time we are making  
23      energy out of this material. So maybe come to  
24      California, we can start a different kind of  
25      campaign.

1           MR. COLEMAN: I don't know if that's  
2     inviting a response but I agree with that. I  
3     think too often the debate about biofuels hinges  
4     around all the concerns, it doesn't talk about the  
5     positives that it could bring to the agricultural  
6     sector. And I think it's also a lot of the  
7     concerns are unhinged from understanding the  
8     history of this industry.

9           So for example on the biodiesel side,  
10    the biodiesel industry exists largely because  
11    people were crushing soybeans and didn't know what  
12    to do with the oil. And now yes, there is  
13    competition for the oil and it ends up in food.  
14    But it is largely an industry that if there is not  
15    enough of the residual oil around that price, that  
16    oil goes up and the industry goes offline. So you  
17    have hardly a scenario where this industry is  
18    going to take off and control too many parts of  
19    the world.

20           The same is true for ethanol. So there  
21    is an opportunity to grow different things in  
22    different places and be productive about this and  
23    that's something we need to talk about.

24           Back to the presentation. I just want  
25    to talk about a couple of the things I bullet-

1 pointed with regard to problems.

2 Here is the blend wall. We have talked  
3 about the blend wall and getting through it. This  
4 is with the investor perspective. People say,  
5 well you've got this guaranteed market for  
6 renewable fuels and therefore you should have this  
7 ripe investment market.

8 Well if you are an investor and you are  
9 looking out four or five years and saying, okay, I  
10 am going to make a several million dollar  
11 investment and then I am going to try to make  
12 money in 2013 or 2014, what you have here is a  
13 situation where the RFS, the Renewable Fuel  
14 Standard runs right up against the marketplace.

15 And so the E10 blend wall here is the  
16 blue line. Assuming that you are not going to get  
17 all the way to 100 penetration for whatever  
18 reason, because there's regional preferences for  
19 fuels. Perhaps a 90 or 80 percent penetration  
20 blend falls more realistic. You can see fairly  
21 quickly that without E85 that you have a problem  
22 with regard to growth.

23 And so if you are an investor and you  
24 are asking the open markets equation, are the  
25 markets open, if you look at this graph you say

1 no, they are not open, and you perhaps make an  
2 investment somewhere else. So this is part of the  
3 industry is tacking towards a more active advocacy  
4 for removing that blend wall.

5 Here is the supply and demand situation.  
6 As I said, it's easy to say there's supply and  
7 demand problems, it's a little harder to get to  
8 the problem. There's a key point here, it's both  
9 a supply and demand problem. People often say,  
10 well we're over supplied and that's the problem  
11 with the biofuels industry historically. Well  
12 there's a demand problem too and I want to talk  
13 about it.

14 But quickly back to the future here.  
15 Ethanol is, and this is largely an ethanol slide,  
16 is an affordable blend stock that extends supply  
17 in California, is California produced. People  
18 seem to forget when you take all the subsidies  
19 into account this graph, that is a CEC graph,  
20 shows that historically, and this has been true  
21 since when I personally started advocating for  
22 ethanol in the state in the late '90s, it's always  
23 been cheap, it's always been cheaper if you take  
24 into account the blend credit, with the exception  
25 of a couple of places.

1           So we have a situation where California  
2       can, and this country can produce a fuel that is  
3       competitive. And we are often using less of it  
4       than we otherwise could. And in a situation where  
5       we have a petroleum dependance problem, that is an  
6       interesting predicament to be in. Where we are  
7       desperately trying to reduce our dependance on  
8       petroleum and we have this fuel that we can't seem  
9       to get into the fuel stream that is affordable,  
10      American-made and is not petroleum. So that's one  
11      issue.

12           But it is true that there is an  
13      oversupply situation. The renewable fuel industry  
14      is oversupplied. It is up against the mandate at  
15      the federal level. But demand is also  
16      artificially depressed so there's a couple of  
17      things going on here.

18           One is that oil companies are legally  
19      holding RINs and squeezing ethanol suppliers. So  
20      the way the federal program works is an oil  
21      company can accumulate or acquire a renewable  
22      credit under the RFS and they can hold on to it  
23      for somewhere in the vicinity of 18 months. And  
24      what happens then is if you accumulate those RINs  
25      you can basically squeeze your ethanol producers

1 and squeeze down their ability to sell their  
2 products. That hurts.

3 The vehicle blend walls we have talked  
4 about but it keeps biofuels in a box. And so you  
5 are basically -- I think there are some folks in  
6 this state that would like to see biofuels in a  
7 box. If that's a position that can be articulated  
8 and makes sense then so be it. I don't think it  
9 makes sense to keep biofuels in a box. I don't  
10 think it makes sense to say, we would rather  
11 replace corn ethanol with cellulosic ethanol than  
12 replace petroleum with cellulosic ethanol and grow  
13 a sustainable corn ethanol industry.

14 And the third is the regulations are not  
15 designed to facilitate change. And so we have  
16 gone through this process of infinite amounts of  
17 testing and saying, E10 works but does E11 cause  
18 the car to come to a complete stop? Does E12  
19 cause the car to come to a complete stop or create  
20 problems over time? That's not to diminish those  
21 issues but these issues are ongoing and take  
22 forever.

23 The same is true in the E85 space. It  
24 is not easy to build an E85 pump. It's a long  
25 process. And so I think we really have to think



1 about cutting the knot. And that doesn't mean  
2 expediting or alleviating the regulations but it  
3 means probably looking at these regulations and  
4 wondering aloud if they are ever going to allow  
5 this industry to grow.

6 And I've touched on the petroleum  
7 dependence issue. We have roughly two billions  
8 gallons of ethanol production nationally that we  
9 are not using. We have tens of millions at least  
10 of ethanol gallons in this state that we are not  
11 using and yet we are importing oil. And everybody  
12 in DC and otherwise says that petroleum dependence  
13 is a problem. There are two things that are not  
14 lining up here and we have to figure out how to  
15 make them line up.

16 So what does the renewable fuels  
17 industry need? Well, one is we need to get the  
18 renewable fuels industry out of this box.

19 And in the short term that means  
20 increasing the blending allowance in conventional  
21 cars. You increase it to E12, E13. The same is  
22 true on the biodiesel space and allow these  
23 industries to compete competitively. That's a  
24 better short-term solution.

25 Long-term, all vehicles should be flex

1 fuel vehicle, should be flex fuel.

2 Now I want to touch on something that  
3 was touched on earlier. I don't think it makes  
4 any sense to say that we should do it  
5 infrastructure first, vehicles second. Because  
6 the state could spend tens of millions, billions,  
7 building stations without any knowledge of where  
8 the tipping point is with regard to actually  
9 getting the auto industry to say, okay, that's  
10 enough stations, we'll build the cars now, okay.  
11 We have no idea when they are going to say that.  
12 Their metric might change.

13 The way you deal with it is you just  
14 take the issue off the table. Flex fuel vehicles  
15 are more similar to seat belts than they are to  
16 plug-in electric hybrids or any other advanced  
17 technology like hydrogen. It's too easy, it's  
18 been too long. The federal government, the  
19 states, they all need to start thinking about  
20 whether they have the legal authority to just say,  
21 flex fuel vehicles are seat belts, everybody has  
22 got to do it.

23 It sounds like a mandate but you are not  
24 mandating anything, you are mandating flexibility.  
25 Take it off the table. And then we'll see people

1 out in the gas world say, you know what, I am  
2 going to, I am going to use that incentive program  
3 and build a pump because I know in 2015 80 percent  
4 of the cars sold in this state or whatever it is  
5 are going to be flex fuel.

6 On the biofuels side with regard to  
7 regulations we need to let -- I'm sorry, on the  
8 carbon side we need to let biofuels compete on a  
9 level carbon playing field. Now this is, this is  
10 my second point where I could wander off the text  
11 a little bit.

12 The Low-Carbon Fuel Standard is not good  
13 for any type of biofuels as currently written. It  
14 is very clearly biased against biofuels. And if  
15 the state passes it the chilling effect will make  
16 its way well past corn ethanol and well into the  
17 advanced biofuel marketplace. The record reflects  
18 that, advanced biofuel CEOs have said as much, and  
19 intuition reflects that.

20 Because the advanced biofuel industry in  
21 the same way that the first generation solar  
22 companies and the same way the first generation  
23 wind companies, the second generation technologies  
24 very much rely on first generation. And that is  
25 from an infrastructural perspective, that is from

1 a political perspective, that is from a direct  
2 investment perspective, that is from a  
3 technological perspective.

4 And so the current LCFS is biased. It  
5 enforces indirect effects against only one type of  
6 fuel. It is not something that I think California  
7 wants to promote. And we only have nine days to  
8 figure it out so no problem.

9 Now with regard to the other issues,  
10 food versus fuel, indirect land use change, ag as  
11 a villain. The key there is to have a fact-driven  
12 analysis and discussion. That just means having  
13 more forums and talking about this issue and  
14 empowering the people that are involved with the  
15 facts to speak on these issues.

16 And the final is, give the industry a  
17 chance to innovate. We are talking about an  
18 industry with good current trends on energy use  
19 and other inputs. Fertilizer is down, energy use  
20 is down. The point about first generation solar  
21 and wind being critical to second generation is  
22 also true for conventional biofuels.

23 And the other thing is feedstock  
24 diversification is already happening because of  
25 one simple reason, dollars. I go around to

1 various states and I say, why are you tilting your  
2 regulations toward corn ethanol or soybean  
3 biodiesel or what have you. And it's always, well  
4 we need to drive these conventional guys to  
5 change.

6 They're ahead of us. They went through  
7 what we witnessed six months ago, two years ago,  
8 when they attached their whole business plan to  
9 corn. The minute they do that the price of corn  
10 goes up and they can't produce ethanol affordably.  
11 The companies understand this better than the  
12 advocates and they are ahead of us.

13 That's why the ADMs and the IGENs and  
14 the POETs and all the big companies that you think  
15 would just be fighting for their corn kernel  
16 ethanol, they are all out leading the charge on  
17 feedstock diversification. Why? Because it's the  
18 only way they are going to make money in the  
19 future.

20 So we spend way too much time focusing  
21 on punishing the bad instead of promoting the  
22 good. And so we have to get to that point. And I  
23 don't think, quite frankly, we are at that point  
24 in California.

25 I appreciate the opportunity and I'd be

1 happy to answer any questions.

2 PRESIDING MEMBER BYRON: Thank you.

3 VICE CHAIRMAN BOYD: No questions.

4 MR. COLEMAN: Thank you.

5 MR. SCHREMP: Well we are at a stage now  
6 where we are going to be contacting US EPA and  
7 attempt to get them on the phone.

8 MR. ARGYROPOULOS: Actually I'm on.

9 MR. SCHREMP: See how fast I am, Paul.

10 MR. ARGYROPOULOS: You are excellent.

11 MR. SCHREMP: Hey, thank you very much.  
12 Are you on via the laptop where you can see your  
13 slides or just the phone?

14 MR. ARGYROPOULOS: I'm just on the phone  
15 right now.

16 MR. SCHREMP: Okay. So what I'll do is  
17 I'll just page through your slides. And I don't  
18 know if I can see which page number I'm on but.

19 MR. ARGYROPOULOS: They should be listed  
20 on there.

21 MR. SCHREMP: Yes I can. So I'm on the  
22 title slide now, okay. So you just tell me when  
23 to move forward. Why don't you go ahead and  
24 introduce yourself and sort of let people know  
25 sort of how you are involved in all this.

1                   MR. ARGYROPOULOS: Okay. Well thanks  
2 first for inviting us. Lots of interesting things  
3 going on. I'm sorry I hadn't been able to  
4 participate earlier. I understand that I think  
5 John from Valero gave an overview earlier so I am  
6 going to probably get to the chase.

7                   My name is Paul Argyropoulos. I work in  
8 the Office of Transportation and Air Quality. And  
9 our office is the lucky recipient of dealing with  
10 the Renewable Fuel Standard, both from the RFS  
11 under EPCRA and also the EISA 2007 requirement.  
12 Which I'm sure John clued you in on all the  
13 significant changes that occurred and what we are  
14 required to do in preparation for issuing our  
15 Notice of Proposed Rulemaking.

16                   My particular involvement here is I'm  
17 the interagency work group chair in the agency for  
18 coordinating this rule, both in the agency and  
19 then also I am fairly involved in the interagency  
20 process as well as with meetings with  
21 stakeholders, both in the private and the public  
22 sector in developing this rulemaking. So it's  
23 been an interesting ride.

24                   I think all of us are very much in tune  
25 with a lot of the major issues and then

1 particularly in California with what's going on  
2 there. And there are obviously some issues that  
3 to some extent overlap and maybe in some other  
4 aspects maybe even compete.

5 But what I wanted to do today, since you  
6 guys have probably beaten over many of these  
7 issues already, is just give you a general  
8 perspective about what the process is and how it's  
9 transpired and generally where we are in the  
10 process. And it's kind of what the next steps are  
11 anticipated to be and then somewhat of the time  
12 line as well.

13 And to the extent that you want me to I  
14 can also talk about somewhat of a related issue  
15 and that is the E15 blend well and the petition  
16 that we have before us. So I'll leave that up at  
17 this time. And also if that is in tune with what  
18 you would like to do, Gordon.

19 MR. SCHREMP: That sounds good, Paul.  
20 There is some interest in the E15 issue or the  
21 mid-level blending. And so yes, we would  
22 certainly love to hear some perspective from you.

23 MR. ARGYROPOULOS: Okay, great. So with  
24 that let's just move on to Slide 2 and it's titled  
25 Timeline of Proposed Rule Processing and the Next



1 Steps.

2 Many of you know we have been working  
3 through this process for a period of time. We are  
4 getting close to a year and a half now since  
5 passage of the Act. And we actually had a draft  
6 proposed rulemaking that was sent last October and  
7 early November, kind of in two pieces, a  
8 Regulatory Impact Analysis with some more detailed  
9 supporting documentation to the rule, and then  
10 also the Preamble, which really lays out what the  
11 proposal and/or other areas of the rulemaking  
12 which we would be seeking comment on.

13 We sent that to the Office of Management  
14 and Budget last October in the first round of the  
15 previous administration. And that was in  
16 interagency review for a period of time and of  
17 course we had a change in administration.

18 So back in January, immediately  
19 following the change of administration -- I guess  
20 I should back up. We never completed the  
21 interagency process in the previous administration  
22 so when the change did occur we received some  
23 guidance in a January 20th memo from Emanuel that  
24 basically was not just pertaining to this rule but  
25 to all federal rules and policies. They wanted to

1 have the incoming leadership take a look at those  
2 things.

3 So this was one of the rules that was  
4 sent back from the Office of Management and  
5 Budget. We briefed our new leadership at that  
6 time and then she quickly turned around and sent  
7 it back into the official interagency process with  
8 OMB so I'm calling that Round 2.

9 We did request an expedited review,  
10 which is a 14 day period. Obviously this is a  
11 complex rule. There's many, many issues, which  
12 many of you have probably already discussed. So I  
13 won't call it a pipe dream but we certainly had  
14 high expectations and hoped that we would get  
15 through the process in a very compressed time  
16 period.

17 We did not do that. We are still right  
18 now in the interagency process. We have made some  
19 progress. The discussions and the issues are very  
20 expansive and amongst all of our federal partners  
21 so we have been working through a lot of those  
22 topics with them in this interagency process.

23 The next step would obviously be to  
24 complete that process and then for our  
25 administrator to sign it. And then published in

1 the Federal Register and open up the official  
2 comment process. And of course that is what we  
3 are all anxiously awaiting and I know many people  
4 are as well.

5 There has been a lot of speculation  
6 about what's included in there. And obviously  
7 there is a heightened sensitivity about the life  
8 cycle, the methodology, the approach that we will  
9 be taking. And then ultimately how that is going  
10 to pan out for implementation of this program.

11 So that's really where we are. As far  
12 as timing of the release of the proposal. I mean,  
13 you know, we can almost say it's any day but the  
14 reality is we still need to complete the process  
15 to get approval. We're hopeful that we are going  
16 to be able to do that soon so we can have a full  
17 disclosure and a public transparency on all of  
18 these issues. That's our hope.

19 As far as how is it going to affect the  
20 actual timing and implementation of the rule. We  
21 obviously didn't meet the January 1, 2009 deadline  
22 so that's off the table but we are still hopefully  
23 targeting 2010 in some capacity and to the extent  
24 that we issue this, get through the process and  
25 then finalize it. That will be a final

1 determination of whether we make a 2010  
2 implementation at some point into the future.

3 So that's really where we are right now  
4 and I thought it best to give you that context of  
5 where we are, first. Moving on to Page 2 -- 3,  
6 I'm sorry, the next slide.

7 I always try and present this just so  
8 that people really understand the complexity of  
9 this. I mean, we are not just dealing with  
10 conventional crude oil anymore and then refining  
11 processes and meeting a specification.

12 We are dealing with so many different  
13 things. Various blends that can be used, various  
14 feedstocks that can be used. Restrictions on  
15 lands and feedstocks. Understanding the  
16 capabilities of process technologies and the  
17 availability of biomass in these volume standards.  
18 And ultimately the timing of when these  
19 technologies will be available.

20 Looking at meeting the life cycle  
21 assessment issues they are all -- these categories  
22 all have standards based on a life cycle  
23 assessment. And depending upon the feedstock and  
24 the ultimate evaluation that we come up with would  
25 ultimately affect the ability and the viability of

1       this program. We have lots of flexibilities and  
2       some of those things I'll make mention of.

3               But I always present this because it is  
4       such a complex issue. We are not just meeting  
5       with refiners and automakers anymore, the  
6       technology vendors in those sectors. We are  
7       meeting with the pork renderers and the chicken  
8       farmers and the people within the food industries.  
9       Obviously the renewable fuels industry. And all  
10      the conventional types of fuel providers as well  
11      as the marketers. So it's a very, very complex  
12      issue and it has implications and ripple effects  
13      all throughout many, many of the market areas  
14      which we haven't had to deal with in the past. So  
15      it's just kind of a reflection of not only the  
16      interest in this particular rule but also the  
17      heightened sensitivity.

18             Moving on to Slide 4. And again  
19      apologies if some of these things were covered but  
20      I just thought I'd mention them for context  
21      anyway. The RFS 1 program which we are operating  
22      under right now, again, that was a much lower  
23      volume, 7.5 billion gallons by 2012. It goes  
24      under EISA to 36 billion gallons by 2022. And  
25      actually the volumes increased last year to 9

1 billion gallons. So we are already -- and they  
2 went to 11.1 this year. We are well beyond what  
3 standards were under RFS 1.

4 So that in and of itself changes  
5 positions of people. And particularly the  
6 obligated parties. What once was an easy thing,  
7 and maybe there was less consternation over having  
8 to buy and how you would go about doing that, now  
9 the game has changed significantly.

10 It also established these new fuel  
11 categories, which again John probably covered.  
12 But the critical components of those are not only  
13 the volumes but also the life cycle assessment.  
14 And to the extent that fuels will ultimately  
15 comply are ultimately determined under a number of  
16 things. You have to meet the definition of  
17 renewable biomass, you have to come from land that  
18 had been previously cultivated and there's a host  
19 of other things that are in there that are nuanced  
20 in order to even begin to determine whether those  
21 things ultimately will be allowed for use for  
22 production of renewable fuel. And then meeting  
23 the standards in and of itself.

24 The addition of and the inclusion of  
25 diesel in this particular rule. The last rule was

1       only based on gasoline. In highway now we are  
2       looking at gasoline and diesel and on-road and  
3       non-road fuel as well. So the game has changed  
4       significantly and expanded the number of obligated  
5       parties to some aspects.

6               And there are some additional  
7       flexibilities for the allowance of blending  
8       renewable products into the jet and heating oil  
9       market. That those RINs or those credits can be  
10      used for compliance purposes. That's something  
11      that was not included in the last, in the last  
12      Energy Act as well.

13             Recognizing that this is a challenging  
14      rule, that there are some levels of uncertainty,  
15      Congress also put some additional waiver  
16      authorities in and additional flexibilities. And  
17      these are not the only ones that are obviously in  
18      there but these are a few that are listed.

19             We have general waiver authority, as we  
20      had before, but it has been revised to make  
21      determination if there's inadequate supply or a  
22      significant impact on the environment or the  
23      economy we can make a determination to waive all  
24      or part upon a petition by somebody affected by  
25      the program.

1           There are also specific waivers for  
2       certain standards such as the biomass based diesel  
3       standard and the cellulosic standard as well. And  
4       those in and of themselves are not necessarily  
5       easy and there will be discussion on how we might  
6       intend to approach waivers in the particular  
7       categories in the Preamble as well.

8           Moving on to the next slide. And this  
9       is really where the rubber meets the road here.  
10      Slide 5 is the new standards. The conventional  
11      biofuels, we actually really -- we use that term.  
12      It's not really four categories but it's biofuels  
13      or total biofuels in general. And one of the  
14      standards there is it allows up to 15 billion  
15      gallons of renewable fuels to be made from corn  
16      starch based ethanol.

17           There is also a general renewable fuel  
18      category. The standards must be that they meet a  
19      20 percent life cycle greenhouse gas reduction  
20      over the fuel they are replacing. And it's off of  
21      a 2005 baseline.

22           I think it is also important to note  
23      though that four facilities that were constructed  
24      prior to enactment, those facilities do not have  
25      to meet this or any other standard. They are



1       grandfathered. Their volume is grandfathered.  
2       And again, pre-decisional. But there are some  
3       specific approaches that we are looking at and  
4       what does grandfathering mean. As a facility, is  
5       it volume capacity, is it historic volume average.  
6       There's a number of proposals that will be  
7       discussed in there.

8               Ultimately what we finalize would be  
9       based on the comment process. But we expect that  
10      of the facilities out there, at least the corn,  
11      traditional biorefineries that are out there,  
12      there's about 15 billion gallons. Almost all of  
13      it is grandfathered.

14             Renewable diesel or biomass-based diesel  
15      standards. Notwithstanding meeting the compliance  
16      requirements of the threshold, those facilities  
17      are also grandfathered into the normal renewable  
18      fuel category but they must meet a greenhouse gas  
19      standard in order to comply with the biomass-based  
20      diesel standard. And that is a 50 percent life  
21      cycle greenhouse gas threshold.

22             And then of course there is another  
23      category for advanced biofuels and also a 50  
24      percent reduction requirement.

25             And then the cellulosic biofuel, which

1 is a 60 percent life cycle greenhouse gas  
2 reduction. And that is a standard of 16 billion  
3 gallons by 2022.

4 And you have probably seen the charts.  
5 They all ran over a period of time.

6 So one other flexibility not mentioned  
7 on the previous page is that it allows EPA to  
8 adjust the life cycle threshold downward by as  
9 much as 10 percent. So in other words a 60  
10 percent threshold could be adjusted to 50, 50 to  
11 40, 20 to 10.

12 That is something that we are not  
13 necessarily intending to propose in the rulemaking  
14 but it is something we would be seeking comment on  
15 depending upon where some of these products fall  
16 out ultimately in meeting the standards.

17 Moving on to Slide 6. This is just a  
18 slide to show you that really most of the increase  
19 is going to be in the cellulosic and advanced  
20 categories. There is obviously the biomass-based  
21 diesel standard in there as well. But off the RFS  
22 baseline, of course, the standard above that is  
23 expected to be based on corn starch based ethanol.  
24 But again, the remainder of the volume is really  
25 going to come from advanced and cellulosic matter.

1           And with that, as far again as a status  
2   overview. We really hope that that once we get  
3   this rulemaking out we will be able to reduce the  
4   level of uncertainty by having the transparency of  
5   all the work that's been done. Instead of having  
6   people be speculative about what we haven't done  
7   they will be able to speak more definitively on  
8   what's been done. And obviously we are expecting  
9   a significant amount of comment on just about  
10  everything that is being proposed in this  
11  rulemaking.

12           That's pretty much it on the RFS2. I  
13  don't know if, Gordon, maybe you want to stop and  
14  we can take some questions on that before we go to  
15  the mid-level blends.

16           MR. SCHREMP: I don't see any questions  
17  from the dais but I have a quick one, Paul.

18           MR. ARGYROPOULOS: Okay.

19           MR. SCHREMP: I know you laid out the  
20  steps. I know we haven't seen a proposed rule  
21  published in the Federal Register yet. So the  
22  timing issue. I think John mentioned that  
23  essentially you'd have to -- to get this I guess  
24  on the books by the end of this calendar year it  
25  has to, a final rule has to be published near the

1 end of October. Is that correct?

2 MR. ARGYROPOULOS: That is correct due  
3 to the congressional review period requirement of  
4 60 days. You really need to, to have this rule  
5 finalized and published by the end of October in  
6 order to allow for that to occur.

7 MR. SCHREMP: And understanding that  
8 this is a rather complex package, when there is a  
9 proposed rulemaking that goes out and you guys  
10 have to address all of the comments that do come  
11 in as part of that proceeding, how long are you  
12 guys anticipating from the, from the point of the  
13 proposed rulemaking coming out, to be able to get  
14 a final rulemaking package published? Is that  
15 like at least 60 days or is that an even longer  
16 process?

17 MR. ARGYROPOULOS: Well it will be  
18 longer than that. How much longer than that is  
19 uncertain. Once the comments come in, once we  
20 publish the rulemaking that's when the official  
21 clock starts. So let's say we propose a 60 day  
22 comment period for this rulemaking. So let's just  
23 say it's published May 1st for the sake of a time  
24 line.

25 Sixty days puts us to the beginning of

1 July at that point. We can be taking the  
2 comments, addressing the comments all throughout  
3 the comment period. So work begins immediately  
4 once those comments come in. And to the extent  
5 that we can manage all those within that 60 day  
6 period, that would be amazing.

7 But also expecting that comments may  
8 come in on the 60th day. That they may be  
9 significant and there may be need to address those  
10 and it may take some time to do that. So we will  
11 need some level of time beyond the 60 day period  
12 to make sure that we have addressed everything.  
13 And to the extent that they are significant that  
14 would push the time line out well beyond the 60  
15 days.

16 But if you do that that's still -- let's  
17 say we could do that within 30 days after the  
18 comment period closes so we are in the beginning  
19 of August to issue a final rulemaking. You know,  
20 this is all very, you know, theoretical and  
21 speculative and optimal. Then that could be  
22 something that we could need that 60 day time  
23 period to publish by the end of October.

24 MR. SCHREMP: Okay, thanks Paul, that  
25 was good clarification. And if you want I can

1 move on to Slide 7.

2 MR. ARGYROPOULOS: Sure. Just go ahead  
3 to Slide 8.

4 MR. SCHREMP: All right.

5 MR. ARGYROPOULOS: I think people know  
6 about this issue and it's fairly ingrained in many  
7 of the people there in the room.

8 But as people know, as we ramp up the  
9 Renewable Fuel Standard and as we expect that  
10 ethanol is going to be the primary renewable fuel  
11 that is going to be meeting the standard, at least  
12 in the near term and probably in the much longer  
13 term as well, at some point the gasoline pool has  
14 a limited ability to absorb ethanol into the pool,  
15 at least with the current constraints.

16 There is an allowance right now for up  
17 to ten percent by volume of ethanol in gasoline.  
18 That's for conventional gasoline vehicles. Of  
19 course there's the flex fuel vehicles that are out  
20 there that can use up to 85 percent ethanol or  
21 anything from, you know, straight gasoline and  
22 something in-between.

23 With that, we do have some authority to  
24 consider the registration of new fuels and fuel  
25 additives. We recently received a petition to do

1       so, I'll get into that later. But really what we  
2       need to do when we are looking at a new fuel or a  
3       fuel additive, we have to make a determination  
4       that it is not going to increase the emissions or  
5       damage the vehicle emission control components  
6       over the useful life requirement. Those are  
7       established in our regulation.

8               And then we need appropriate  
9       determination of those fuel and fuel additives.  
10      And there's a process by which we would go through  
11      to make those determinations. But to some extent  
12      if they are really new it may not only be testing  
13      on vehicles' engines but there's also other tiers  
14      of testing that needs to go on to determine if  
15      there are also adverse health impacts. But kind  
16      of moving beyond that.

17             There has been a big push because of  
18      this pending limitation. And at some point in  
19      time in the next few years, within the next two,  
20      three, four years, depending upon the gasoline  
21      consumption in the US, that we are going to reach  
22      the saturation point.

23             There are positions all over the place  
24      on support of moving to higher blends to allow for  
25      the use of renewable products in the conventional

1 gasoline pool for conventional vehicles. And then  
2 also for ramping up the number of flexible fuel  
3 vehicles out there to be able to use the E85 or  
4 mid-level blends or any blends in-between them.  
5 But at a minimum it's safe to say there's  
6 positions on all sides of this particular point.

7 Moving on to Slide 9. This just shows  
8 kind of where the blend wall is. And from the  
9 initial calculations, and I think most people were  
10 somewhere within this range depending upon  
11 gasoline consumption in the US, the blend wall can  
12 be hit, and is expected by our estimate to be hit  
13 in 2012 based on these volumes.

14 So if you look at that and then you look  
15 at the ramp-up as the RFS2 program continues over  
16 the course of the following years, we are going to  
17 be well beyond the ability for the gasoline pool  
18 to absorb this. So there's only a number of ways  
19 to be able to manage, to use corn ethanol.

20 To be able to approve that for higher  
21 blends in conventional vehicles, to increase the  
22 number of flexible fuel vehicles and our ability  
23 to use higher blends and/or move to E85. To put  
24 more into other, more renewables and other product  
25 areas such as the distillate area, which blends a



1 lot more renewable or biomass-based diesel or  
2 biodiesel.

3 And then potentially also to introduce  
4 products that are very similar in chemical nature,  
5 or almost exactly in chemical nature, to gasoline  
6 or diesel. So there's the transparency of that.  
7 And you don't really have a blend wall effect.  
8 Pretty much you can pipeline it, you put it into  
9 vehicles without any modifications or  
10 requirements, et cetera. And again, this is all  
11 not even including the other infrastructure issues  
12 such as the pumps and the tanks and the pipelines  
13 and so forth.

14 So there's a number of pathways. But  
15 obviously I think most people believe that the  
16 most expeditious pathway would be to allow for the  
17 fleet that's out there and the forthcoming fleet  
18 to be able to use more higher blends and volumes  
19 of ethanol.

20 Moving on to Slide 10. Indeed mid-level  
21 ethanol blends can help address the RFS2 blend  
22 wall. Again, there's a time period, 2011 to 2013  
23 depending on how you slice the data. We need to  
24 address this. It's not just a near-term issue, it  
25 is a much longer term issue so it doesn't go away.

1 And here are some for instances:

2 E12. If we were to allow E12 as a  
3 conventional gasoline blending. That really only  
4 delays the blend wall by our calculations by less  
5 than a year. So you really don't buy much time if  
6 you, if you allow this blend.

7 By going to E15, somewhere between two  
8 to three years.

9 And then if you move to E20, by up to  
10 six years. There really hasn't been or continues  
11 to be a lot of discussion of E20. And I think  
12 part of that is really people realize that the  
13 reality that E15 is where a lot of the testing has  
14 been done and a lot of the data may fall. It may  
15 be an easier evaluation and determination of E15  
16 than it would be at E20.

17 So we are not going to need just short-  
18 term solutions, we are going to need longer term  
19 solutions. And again, some of those things that I  
20 just described before are options for getting  
21 beyond the blend wall.

22 Moving on to Slide 11, which is the last  
23 slide. The petition that we have. Basically back  
24 on March 6 we received a request from a group  
25 called Growth Energy. And it's on behalf of 52,

1 actually it's 54 fuel manufacturers, to allow for  
2 the use of E15 in conventional vehicles.

3 We are obviously in the process of  
4 reviewing that application and we are very near  
5 issuing a Federal Register notice to open up the  
6 comment, public comment process. I believe that  
7 that is --

8 But what it does, they request us under  
9 211-4 to consider a waiver for a gasoline-ethanol  
10 blend beyond the ten percent level which are  
11 currently allowed for in non-flex fuel vehicles.

12 In order for the application --  
13 obviously we can receive an application but the  
14 application needs to include data on the  
15 compatibility of the materials with the new  
16 blends, the durability of the vehicles in the use  
17 of that blend, the emissions impacts, driveability  
18 effects of moving to a higher blend.

19 The data also must adequately  
20 demonstrate that the fuel is not going to cause or  
21 contribute to the emission controls failure -- and  
22 it's over the course of the useful life. Not just  
23 the vehicle but also the engine. So there's non-  
24 road issues here.

25 Obviously some vehicles, particularly

1 newer technology vehicles, may be less sensitive  
2 to higher blends because of the computer controls  
3 and optimization. Whereas the less sophisticated  
4 portion of the engines that use gasoline out  
5 there, such as weed whackers and lawn mowers,  
6 tractors, automobiles and marine vessels and  
7 things like that, they may be more sensitive to  
8 the use of higher blends. So consideration of  
9 those. Not necessarily to grant a waiver but in  
10 consideration of what the impacts may be we  
11 obviously need to look at some of those things.

12 So as required by the statute we are  
13 going to move forward with issuing a public --  
14 establishing a public docket. I think it is  
15 actually already established. And then when this  
16 notice comes out -- actually when it's published  
17 we will be looking at a 30 day comment period.

18 And we will also be looking at having  
19 this public comment to allow for the inclusion of  
20 additional data to come in. So the data that we  
21 have gotten through the waiver process is  
22 something we will be evaluating but we fully  
23 expect we will be getting opinions, we will be  
24 getting additional data submitted.

25 And there's also other testing programs

1       that are ongoing right now in the federal  
2       government. We knew this was coming. Not  
3       necessary the waiver petition or this specific  
4       one. But we knew the issue was there and that at  
5       some point in time we would have to address the  
6       issue. We are working with the Department of  
7       Energy and there is other work going on. And we  
8       actually have some work on our own lab as well to  
9       make a determination.

10               We have 270 days under the new law from  
11       receipt of this request for the administrator to  
12       act on this request. Obviously lots of legal  
13       interpretation of what act means. It does say  
14       grant or deny in there. But that date I think is  
15       December 1, my calculations that I recall, as to  
16       when the administrator will be acting. I don't  
17       think we are going to move through this process  
18       expeditiously. I don't know if we will be looking  
19       at the entire time period or if the administrator  
20       will be looking at making a determination in  
21       advance of that.

22               So that's kind of where we are on that.  
23       I know there's a lot of interest in this. And I  
24       guess the good news is we'll be having a public  
25       dialogue now.

1           MR. SCHREMP: Thank you, Paul. That was  
2           a great overview and I think you provided some  
3           additional information from what John started off  
4           with earlier today. But yes, many are interested  
5           in the package when it comes out. Certainly what  
6           that may mean. I mean, one of the big concerns is  
7           the cellulosic volume commitment requirements. We  
8           are not aware of any cellulosic facilities that  
9           are actually under construction at this time. Are  
10          you guys aware of any such facilities?

11          MR. ARGYROPOULOS: Yes, I mean, I know  
12          that there are some that are under, are at least  
13          in the works. I don't know as far as the level of  
14          construction at this point. I know that there's  
15          actually a facility that is operating in, I think  
16          it's in Alabama. To the extent that it satisfies  
17          the whole definitional requirement for cellulosic  
18          or not I don't know if that's the case right now,  
19          but I think it could be a facility that could be  
20          ultimately put in for commercial application and  
21          produce cellulosic biofuel.

22          There was also one I think that was in  
23          Atlanta. I think it was Range Fuels. I think  
24          they are in operation. I don't know again the  
25          status of that. They were going to be using waste

1 pulp and producing cellulosic biofuels.

2 And I know that there are some others  
3 that are in the works and/or planned right now.  
4 There's a lot of activity.

5 But again, given the economics and kind  
6 of the current status I think there's still a  
7 level of uncertainty out there as to being able to  
8 meet the volume standards. Not only in the near-  
9 term but also in the mid-term.

10 We do have the ability to address that.  
11 We will be setting the cellulosic standard each  
12 year as we do the total renewable volume  
13 percentage standard. And we have the flexibility,  
14 based on the language in the Act, that if there is  
15 less than what the Act calls for, we'll be making  
16 a determination for what that standard is based on  
17 information from EIA as well as other market  
18 information. And actually there could be  
19 companies that are going to be providing us with  
20 maybe even confidential business information. But  
21 that will help us make a more real determination  
22 of what the volumes will be.

23 And then again, we could set that volume  
24 based on those realistic projections. To the  
25 extent that it meets the standards, great. If

1       there is still a shortfall we have the ability to  
2       generate some paper credits or paper RINs based on  
3       the allowances in the Act as well.

4               But the intention is to push the  
5       cellulosic industry in an effective way, to send  
6       positive market signals. But at the same time  
7       allow the industry to achieve compliance based on  
8       the reality of the market, certainly.

9               MR. SCHREMP: Thanks, Paul.

10              VICE CHAIRMAN BOYD: Question. Hi Paul,  
11       this is Jim Boyd, thanks for your presentation.

12              MR. ARGYROPOULOS: Thank you.

13              VICE CHAIRMAN BOYD: Earlier today James  
14       Frusti of Chrysler gave us a detailed rundown on  
15       the auto-oil test plan of mid-level blends. And  
16       as I read their test plan it doesn't look to me  
17       like they are finished with their work until July  
18       of 2011. And this is almost more a question of  
19       them than you but it came up in my mind now.

20              You are dealing with this waiver and you  
21       have a much shorter time frame to have to deal  
22       with it, vis-a-vis this fairly elaborate test plan  
23       that's underway. Any thoughts, comments or  
24       reaction?

25              MR. ARGYROPOULOS: Yes, I mean -- well



1        thanks for the question, Jim.  It's a very, very  
2        good point.  And actually I was just meeting with  
3        some people from Conoco Phillips and they are part  
4        of the CRC program and they made mention of the  
5        same time line.

6                Also the Department of Energy work that  
7        is going on.  The time line for that is generally  
8        about spring of next year, I think, for them to be  
9        able to complete the work that they have going on.  
10       At least a significant portion of the work that  
11       would help provide some additional information to  
12       go into this particular process.  And that's  
13       obviously beyond the 270 day time line as well.

14               Given that I think really the reality is  
15       the burden of proof in order to make a decision  
16       will require that the data that is submitted in  
17       the decision process be sufficient in order for us  
18       to make a determination.  And then of course the  
19       public process can help inform that decision for  
20       the administrator as well.

21               The administrator is going to pretty  
22       sure going to be looking at, based on the weight  
23       of the evidence, looking at that.  And whether,  
24       number one, the data is sufficient, number two,  
25       whether that data merits a decision to approve or

1 a decision to deny. That time line -- again I  
2 think a critical part of this is we still have to  
3 base the decision on this. The weight of the  
4 science and the evidence in order to do that.

5 That's not to say that you may not, you  
6 could be in a position where maybe the data  
7 doesn't warrant an approval. And if that's the  
8 case there's a lot of other things that need to be  
9 evaluated. But alternatively, if the decision is  
10 denied that is a moment in time denial, I would  
11 say. And again, this is all just theoretical  
12 discussion. But that's not to say that evidence  
13 in the future forthcoming couldn't help supplement  
14 making -- rendering a decision, or at least a  
15 consideration in the future.

16 VICE CHAIRMAN BOYD: Thank you. And I  
17 should have said it's not just the auto-oil  
18 client, it's a multitude of tests that are going  
19 on. You mentioned the DOE as well.

20 MR. ARGYROPOULOS: Yes, there has been a  
21 lot of work going on and I expect that that will  
22 continue.

23 MR. SCHREMP: Well it looks as though  
24 that's all the questions from the dais.

25 We did indicate we'll open up for

1 questions at the end of the session so I don't  
2 know if there's anybody online who has a question  
3 or has raised their hand.

4 MR. JANUSCH: I unmuted everyone.

5 MR. SCHREMP: You are all unmuted if  
6 someone online has a question.

7 Okay. Well if not, anybody here in the  
8 audience have a question at this time?

9 VICE CHAIRMAN BOYD: Hunger is  
10 overwhelming everyone.

11 MR. SCHREMP: A bunch of hungry faces,  
12 okay.

13 Well I guess at this point we'll break  
14 for lunch. And we would like to have all of you  
15 folks back here by 1:40. We are going to try to  
16 get a prompt start because as indicated earlier we  
17 have a very full agenda in the afternoon as well.  
18 We are even, you know, looking at going to six  
19 o'clock. So please get back here as quickly as  
20 you can and we'll start at 1:40.

21 Thank you very much. Thanks, Paul.

22 (Whereupon, the lunch recess  
23 was taken.)

24 --oOo--

## 1 AFTERNOON SESSION

2 MR. SCHREMP: Well if you'd like we can  
3 resume our proceeding.

4 PRESIDING MEMBER BYRON: Absolutely.

5 MR. SCHREMP: Very good.

6 I just want to make a quick  
7 announcement. We will have a slight reordering of  
8 the schedule this afternoon. Mike Eaves was kind  
9 enough to agree to follow the electricity  
10 recharging infrastructure folks so Chelsea Sexton  
11 and Robert Graham -- Bob Graham will go before  
12 Mike Eaves. So thanks, Mike, appreciate that.

13 So without further adieu I'll get going.

14 I want to talk a little bit about  
15 distribution terminals infrastructure. That is  
16 one, that is sort of the second line of the  
17 system. The marine terminals, then it goes to the  
18 distribution terminal infrastructures.

19 There are 50-plus distribution terminals  
20 in California. Most of them connected by a  
21 petroleum product pipeline to refineries, marine  
22 terminals. That's how a lot of the product gets,  
23 the lion's share gets around. And that's the  
24 point where the tanker truck is filled up before  
25 it goes to the retail station. So that is

1       certainly a very critical part of our distribution  
2       infrastructure, something that we always look at  
3       when we go through the Integrated Energy Policy  
4       Report assessment.

5               So we are very cognizant of the  
6       anticipated rapid increase in renewable fuels and  
7       we know currently renewable fuels are primarily  
8       delivered to distribution terminals via tanker  
9       trucks. Not in the pipeline system, but Kinder  
10      Morgan will address that in just a little bit  
11      about, are there some opportunities to move some  
12      more renewables in petroleum pipelines in  
13      California.

14             So we are very interested because that  
15      takes a little bit of pressure off the  
16      infrastructure development for renewables at  
17      distribution terminals.

18             But no doubt renewables are going to go  
19      up. And to handle them you have to usually have  
20      some additional storage tanks. You have to cycle  
21      those tanks harder. And so we are very interested  
22      on whether or not there might be some issues  
23      developing. So how quickly can that system  
24      change? It's essentially going to have to change  
25      fairly quickly.

1           We are blending a little bit over 6  
2     percent now, probably closer to 6.5 percent on  
3     average in California with ethanol. Based on  
4     Kinder Morgan's announcement we expect California  
5     to be blending closer to 10 percent starting in  
6     January of 2010 but they'll talk about that.

7           So what issues may be present for the  
8     rest of the system. There are other proprietary  
9     distribution terminal operators in California and  
10    there are many distribution terminal operators  
11    just besides the pipelines and the terminals  
12    themselves. So everyone is going to have to  
13    really get ready for a higher ethanol blend so  
14    that they remain fungible. Their gasoline is  
15    tradable with other people in that system. So we  
16    are very interested in how it is going to work  
17    out.

18          We launched a confidential survey of the  
19    distribution terminal operators. We are still  
20    going through those surveys and we have not yet  
21    completed that work, unfortunately. But we will  
22    be providing information back to all of the  
23    stakeholders, especially those who respond to the  
24    survey, in May. Probably early May at this point.  
25    So we'll get back to them. But our thrust of the

1 survey is to see how quickly the industry could  
2 accelerate their receipt and distribution of more  
3 ethanol and more biodiesel. So that's our primary  
4 interest at this point in time.

5 here are the two folks we have from  
6 Kinder Morgan for this afternoon. They'll talk  
7 about their distribution system as well as  
8 renewable pipeline shipment experience to date.  
9 So Russ.

10 MR. KINZIG: Good afternoon. My name is  
11 Russ Kinzig, I am with Kinder Morgan Energy  
12 Partners.

13 You may notice that according to the  
14 agenda I have adjusted the title of this  
15 particular presentation. Originally we were  
16 titling the presentation, Ethanol Blending Common  
17 Carrier Plans. However, we have modified it to  
18 say, Ethanol Blending Kinder Morgan's Plans.

19 And the reason that we are doing that is  
20 we would like to memorialize the fact that Kinder  
21 Morgan is operating in two segments here. Our  
22 pipeline segment is actually a common carrier.  
23 Our terminal segment is totally separate, even  
24 though it is served by all those pipelines. We  
25 will, however, be covering things that are

1 relevant to both the, both the common carrier as  
2 well as our terminals.

3 This is a map of our Pacific operating  
4 system. Our Pacific Operating System  
5 headquartered in Orange. The inset as you see is  
6 Oregon. We do have, operate pipelines from El  
7 Paso through Tucson into Phoenix. The majority of  
8 the pipeline operations are in California.

9 The CARBOB that we ship today, and when  
10 I say CARBOB I mean a California refinery blend  
11 stock for oxygen blending. It is a subgrade  
12 product. The CARBOB that we ship today has a  
13 downstream blending requirement of 5.7 percent.

14 In 2010 beginning with the first  
15 shipments of 2010 our pipeline specification will  
16 change to require ten volume percent downstream.

17 Ours plans for the pipeline are as  
18 follows. As you can see this slide shows that  
19 there are two distinct, geographical regions  
20 served by various pipelines. The Northern  
21 California system serves to distribute product  
22 from the Bay Area refiners and importers through  
23 various pipeline segments. Input is at both  
24 Concord and at Richmond, California.

25 A separate system in the south serves to



1 distribute fuel that comes in from refiners and/or  
2 importers in the Southern California area.

3 When we convert from that 5.7 volume  
4 percent ethanol to the 10 percent we are planning  
5 on converting both systems simultaneously. And  
6 that would be both north and south systems will  
7 start at the same time.

8 The planned octane requirement for  
9 regular grade will be reduced from its current  
10 85.0 octane to 84.0. Today at the retail stations  
11 when you pull up to a retail station the octane or  
12 the anti-knock index,  $(R+M)/2$ , is 87. The  
13 additional octane comes from the ethanol blending.

14 Planned octane requirements for premium  
15 will be reduced from the current 89.5 down to  
16 88.5.

17 Ethanol supply is really the critical  
18 element for continued fuel distribution. What I  
19 mean by that is, if we were to have a distribution  
20 from a specification standpoint in any of the  
21 fuels that we handle, the regular or premium, we  
22 have a number of tanks out there that we could  
23 isolate a tank that we had a problem with, move to  
24 another tank and continue to distribute on spec  
25 fuel.

1           If we had an issue with an ethanol tank  
2       that really would be a problem that would have to  
3       be dealt with rather quickly. We probably would  
4       have to empty the ethanol tank and get resupplied  
5       immediately at a particular terminal.

6           Supply shortages of ethanol have been  
7       seen in other states. As you saw in the earlier  
8       slides, we do serve both Arizona and Nevada and we  
9       have seen shortages of ethanol due to the delivery  
10      of ethanol or non-delivery of ethanol by the  
11      railroad. Most recently was this weekend in  
12      Nevada, we had a shortage over there.

13          The Great Shakeout exercise, and I'm  
14      sure the Energy Commission participated in that in  
15      2008, anticipated significant rail disruption if  
16      the catastrophic earthquake comes. When the  
17      catastrophic earthquake comes obviously there will  
18      be many, many emergency actions taken. One which  
19      needs to be considered is the fact that all of the  
20      gasoline that is used in the state is being  
21      blended with ethanol. That supply of ethanol is  
22      being supplied by rail primarily.

23          At that time we would only have  
24      suboctane product in the terminals. If you needed  
25      to get out with some fuel immediately the premium

1 would be 88.5 and it probably would take care of  
2 an 87 at retail. Some fuel technical experts  
3 would probably have to concur that that fuel could  
4 be used without ethanol.

5 Preparations that we have underway. We  
6 have identified terminals in need of upgraded  
7 offload facilities.

8 And we initiated the permitting process  
9 for additional ethanol offloading facilities.

10 In addition to that we have dedicated  
11 \$15 million in upgrades scheduled for completion  
12 in the fourth quarter of 2009. I believe that  
13 some of that probably will bleed over into 2010  
14 I'm sure as well. But we have a commitment for  
15 \$15 million for ethanol upgrades at our terminals.

16 On the next slide, the terminals that we  
17 serve. We operate 11 terminals in the state. As  
18 you saw from Gordon's previous slide there are  
19 about 50 in the state. We operate 11. In  
20 Northern California, Bradshaw. And not too far  
21 from us here in Sacramento, Brisbane, across the  
22 Bay just south of San Francisco. Chico is our  
23 farthest north terminal, Fresno in the San Joaquin  
24 Valley and certainly San Jose at the, at the  
25 bottom of the Bay Area.

1           In Southern California, Barstow, in-  
2       between Los Angeles and Las Vegas. Carson, which  
3       is down in the LA area down by the harbor. Colton  
4       is a main terminal inland near San Bernardino/  
5       Riverside. Imperial in the southern desert, south  
6       central desert. Mission Valley is San Diego. And  
7       we have a terminal in Orange, California as well.

8           Terminal ethanol receipt. Ten of 11  
9       terminals receive exclusively by truck and  
10      trailer. The 11th terminal, Carson, receives  
11      ethanol by a small dedicated pipeline which is  
12      less than two miles long. And we really don't  
13      consider this much of a pipeline-type receipt  
14      because it is more of a long, wind fill into the  
15      particular tank where tankers of ethanol -- and  
16      that would be rail tankers of ethanol, keep the  
17      flow going into the terminal. The difference at  
18      Carson is it is not a truck offload facility.

19           It should be noted that most of our  
20      terminals are near if not over the age of 50  
21      years. When constructed they were situated in  
22      areas that were reasonably distanced from  
23      populated areas. As time moved forward tremendous  
24      population growth began to encroach upon  
25      surrounding areas. Provisions were not made for

1 rail spurs at the time these terminals were built  
2 because after all the pipelines are a competing, a  
3 companion business in the transportation industry.

4 The heritage of these pipelines, by the  
5 way, is readily traced to their beginnings with  
6 the Southern Pacific Transportation Company. So  
7 Southern Pacific transported a lot of goods by  
8 rail. They got into the pipeline and terminal  
9 business many years ago. And because they were  
10 moving product by pipeline they didn't need the  
11 rail spurs there.

12 At this time in many of our facilities  
13 we don't have the space for rail spurs to come in  
14 and offload. Therefore we are constantly  
15 offloading by truck.

16 Ethanol scheduling. In 2003 we created  
17 an ethanol scheduling position at our Orange  
18 Headquarters. I would like to clarify for you.  
19 In our products movement department at Orange part  
20 of the staff is dedicated to continually  
21 overseeing the progress of fuel deliveries in the  
22 pipeline and the inventory status of position  
23 holders at our terminals.

24 We continually monitor the levels of  
25 product at terminals to ensure a continuous supply

1 of fuel for our customers. Likewise we also  
2 consider space available for product storage at  
3 the scheduled time of pipeline delivery.

4 If you can imagine a pipeline let's say  
5 60 miles long from Southern California from our  
6 Watson input station to Colton, we have this  
7 broken up into a number of different batches that  
8 are arriving. We know what time they left the  
9 pump station. We can accurately schedule the time  
10 of delivery and we will accurately know the  
11 inventory on hand as each batch delivers based on  
12 daily listings. We don't want to put too much of  
13 one product in the pipeline at one time because it  
14 may arrive with no place to put the, to put the  
15 fuel, which would shut down the pipeline. So it's  
16 quite an art to schedule all these barrels in,  
17 making sure that there is space available, no one  
18 runs out and no one runs over.

19 VICE CHAIRMAN BOYD: What is your usual  
20 destination when you are delivering truckloads of  
21 ethanol? Is there one type of facility more than  
22 another that is the predominant receipt point for  
23 your deliveries?

24 MR. KINZIG: When I say receipt of  
25 ethanol I mean receipt at the terminals.

1 VICE CHAIRMAN BOYD: Right.

2 MR. KINZIG: This ethanol was received  
3 into our terminals for blending with the CARBOB.

4 VICE CHAIRMAN BOYD: Right.

5 MR. KINZIG: And the ethanol when it  
6 leaves our terminal is blended with the CARBOB to  
7 make California gasoline for ultimate retail.

8 VICE CHAIRMAN BOYD: Okay, you make it,  
9 all right. You make it at the terminal, it is not  
10 mixed somewhere else then.

11 MR. KINZIG: That is correct.

12 VICE CHAIRMAN BOYD: Okay.

13 MR. KINZIG: The blending takes place at  
14 the terminal.

15 Due to congestion and the number of  
16 customers we must exercise control on the  
17 deliveries. Random truck deliveries really can't  
18 be allowed. As I explained, we know the sequence  
19 and delivery order of all of the base fuel coming  
20 in. Because of so many trucks coming in we can't  
21 allow them to just come in themselves. We have  
22 also put together a schedule and we advise our  
23 customers of the schedule for their ethanol  
24 deliveries.

25 Now on truck offloading, 7 terminals

1 will require 12 or more truck offloads each day.

2 Of these, 4 will require 24 or more  
3 offloads each day.

4 One of our terminals will require over  
5 30 truckloads a day.

6 I'd like to say a truckload is about 180  
7 barrels or about 7500 gallons. And it takes  
8 probably about a half hour or so to unload each  
9 truck.

10 With our change there are some  
11 regulatory considerations. We have initiated  
12 discussions with the California Air Resources  
13 Board concerning some regulatory requirements for  
14 terminal conversion. There are some regulations  
15 in the RFG rules that say that you cannot  
16 commingle CARBOBs requiring a different oxygen  
17 specification for downstream blending.

18 In our discussions we are confident that  
19 we can move forward to overcome this particular  
20 hurdle as well as a maximum change in the  
21 oxygenate that is also written in the regulations.  
22 We can only change I believe it is 3.1 weight  
23 percent. And this particular change, as we go  
24 from 5.7 volume percent to 10 volume percent,  
25 would exceed that particular threshold that is



1 written in regulation. We have discussed this  
2 with CARB and we are confident that we can move  
3 forward with their assistance.

4 Additionally CARB -- beyond Kinder  
5 Morgan, typically we serve most of the refiners in  
6 distributing their product to the downstream  
7 terminals. But there are also some third party  
8 terminals who hand out barrels to the pipeline for  
9 transport downstream.

10 The Air Resources Board is also aware  
11 that some type of discretion will have to be  
12 enforced with the third party terminals that hand  
13 off the fuel to us as we transport it downstream  
14 as well.

15 In addition to the 11 terminals that we  
16 serve that I showed you there are 19 other  
17 terminals served by KM pipelines that also need to  
18 convert. So when it is time for conversion first  
19 cycle of 2010, after they receive their first  
20 deliveries of that particular product, that  
21 product will require ten percent ethanol blending.  
22 So it is not just the 11 Kinder Morgan terminals  
23 that are getting the fuel from our pipeline, it  
24 will also be 11 additional -- 19 additional  
25 terminals downstream.

1           At retail. We have been asked, is there  
2           a difference in the gasoline at retail? Can you  
3           mix these two gasolines at retail? The answer to  
4           that is yes. Today's gasoline with 5.7 volume  
5           percent ethanol is a compliant California  
6           reformulated gasoline. In the future when we get  
7           a CARBOB requiring ten percent, when that has been  
8           blended with ten percent ethanol, that will be a  
9           compliant California gasoline. You can mix the  
10          two at retail stations. People probably do it  
11          today from retail station to retail station as  
12          they fill up from different places in their own  
13          personal vehicles.

14                 The mechanics of terminal conversion.  
15          We need to employ some moderate controls to  
16          diminish the inventories on hand. And when I say  
17          moderate controls, we don't like to run low at  
18          terminals. Everybody gets very antsy when  
19          inventories are low, after all there are a number  
20          of ways that pipelines could be upset and to stop  
21          the flow. Let's say for example a train  
22          derailment could shut down a pipeline as we  
23          investigate any potential damage from the train  
24          derailment. So we don't like to run very, very  
25          low in our terminals.

1           We will employ some moderate controls as  
2 we do when we have a seasonal Reid Vapor Pressure  
3 change. We have just completed that here in  
4 Northern California. We have done it in Southern  
5 California about a month earlier. And you now  
6 have up here the summertime grade of fuel.

7           It's completely transparent to most  
8 consumers that they are changing from one type of  
9 gasoline to another from a vapor pressure  
10 standpoint. We run our inventories low, bring in  
11 the low RVP, it turns the tank and we are on spec  
12 from a California Air Resources Board standpoint.  
13 So we are going to employ the same moderate  
14 controls for pulling down inventories.

15           We plan a four to one dilution rate. We  
16 hope that we can get the ratios correct. We do  
17 want to minimize the 5.7 volume percent product  
18 that we will have on hand but we will not  
19 jeopardize the fuel supply for, for the consumer.

20           We need to synchronize deliveries of  
21 regular and premium grades as efficiently as  
22 possible. Our terminals are controlled by a  
23 terminal management system and our terminal  
24 management system is programmed to put in 5.7  
25 volume percent ethanol. And that's on the

1 finished, the finished product; 5.7 finished is in  
2 the tanker and leaves the terminal, 5.7 to the --

3 (A voice was heard over the  
4 public address system.)

5 VICE CHAIRMAN BOYD: That's all right.

6 MR. KINZIG: -- 5.7 volume percent to  
7 the product as it is out the door.

8 Because the pipeline delivers in  
9 sequences. In other words we'll bring in some  
10 regular and then we'll bring in some premium and  
11 we spot it around depending on the tankage and the  
12 requirements of the individual terminal. When we  
13 convert with this terminal management system it's  
14 an all or nothing thing. We will flip from 5.7 to  
15 10.

16 In other words, if I have some -- if I  
17 have converted all the regular and I am bringing  
18 in premium I can't convert until I have at least a  
19 regular and premium change because there is only  
20 one, one type of injection with the 10 percent  
21 that I can control at any time. It's either 5.7  
22 or 10 that we can do, we can't do multiple. I  
23 can't do 5.7 for the regulars and I can't do 10  
24 for the premiums, so on and so forth.

25 We will initiate new blend recipes at

1 the racks. Because the CARBOB requiring 10 volume  
2 percent ethanol will have a lower octane  
3 requirement we will be changing recipes at the  
4 racks. And as soon as that is done that's when we  
5 click on the 10 percent blending.

6 And finally, we are going to be  
7 continuing our terminal rack oversight program.  
8 We do test monthly to ensure that not only are we  
9 metering correctly, are we looking at the numbers,  
10 do all the numbers look correct. We also  
11 analytically look at the product. We will take  
12 samples of the product, analyze it and ensure that  
13 it is on spec.

14 That concludes my presentation if you  
15 have any questions.

16 PRESIDING MEMBER BYRON: No, very good.

17 MR. KINZIG: Thank you.

18 MR. SCHREMP: Thanks, Russ, appreciate  
19 that.

20 At this time we hand off to Ed Hahn.

21 MR. HAHN: Thank you, Gordon, and good  
22 afternoon, Commissioners. My name is Ed Hahn, I'm  
23 with Kinder Morgan Energy Partners. I was asked  
24 to provide you with some additional background on  
25 the pipelines that Kinder Morgan operates and how

1       it moves biofuels through the pipelines and what  
2       are the restrictions associated with it.

3               I need to start with a little bit of  
4       background about Kinder Morgan. We are one of the  
5       largest energy transportation companies in the  
6       United States, in North America.

7               We transport more than two million  
8       barrels of products each and every day.

9               We own interest in or operate  
10      approximately 43,000 miles of pipeline and 150  
11      terminals in the United States.

12              We have a combined enterprise value of  
13      over \$35 billion, US-wide.

14              What we are talking about today are the  
15      assets in the Pacific Region or Pacific  
16      Operations. And as Russ has already pointed out,  
17      we operate in -- all our operations in the Pacific  
18      Region are west of the Rockies.

19              We operate what's called the SFPP LP and  
20      West Coast Terminals operation. Which includes  
21      3300 miles of refined products pipelines, and it  
22      is all refined products.

23              We transport over one million barrels  
24      each and every day.

25              We transport gasoline, diesel and

1 turbine fuel on all of these pipelines.

2 And overall we have 19 distribution  
3 terminals that we are serving in California,  
4 Arizona, Nevada, Oregon and Washington.

5 You have to forgive me, I missed a slide  
6 right in the middle here. It's blank. It doesn't  
7 want to pop up.

8 Well let me just say that what I had  
9 intended to show you was the map of the entire  
10 Kinder Morgan system. Basically just to tell you  
11 that all pipelines are not created equal. And  
12 basically we serve a lot of different geographical  
13 areas within the United States. And because of  
14 that we have to match the needs of the individual  
15 regions, the regulations in the individual  
16 regions, and the business interests in the  
17 individual regions.

18 VICE CHAIRMAN BOYD: Do we have your map  
19 in the hard copy?

20 MR. HAHN: You should have it in the  
21 hard copy.

22 VICE CHAIRMAN BOYD: The United States  
23 with all kinds of colored lines over it.

24 MR. HAHN: Yeah. And let me quickly  
25 just break down the color code for you. The dark

1 blue lines are the liquid products pipelines. The  
2 red and green lines are the natural gas pipelines.  
3 And the light blue lines are CO2 or carbon dioxide  
4 pipelines. And they all have different operating  
5 conditions, different operating requirements.

6 You may have heard about various biofuel  
7 projects that Kinder Morgan has had. On the  
8 Central Florida Pipeline we currently transport or  
9 plan to transport ethanol from Tampa, Florida to  
10 Orlando. And we are doing that by pipeline.

11 Our Plantation Pipeline system, which is  
12 in the Southeast, we are currently planning on  
13 transporting biodiesel from Collins, Mississippi  
14 to terminals in Georgia, North Carolina and  
15 Virginia.

16 And up in Oregon with the new Oregon  
17 biofuel mandate we are currently planning on  
18 blending biodiesel in our Willbridge facility in  
19 Portland and then transporting blended product, a  
20 B2 product, from Portland to Eugene.

21 VICE CHAIRMAN BOYD: What is the B value  
22 of your southern pipeline for biodiesel?

23 MR. HAHN: We'll be using B5.

24 VICE CHAIRMAN BOYD: B5, thank you.

25 MR. HAHN: There are restrictions and



1 constraints when dealing with biofuels.

2 First, when you talk about ethanol  
3 transportation by pipeline, ethanol is extremely  
4 corrosive. One of the big differences between,  
5 you know, refined liquid petroleum and ethanol is  
6 that it is dramatic in terms of corrosion. We  
7 experience what is called stress corrosion  
8 cracking in the pipe and we also have a problem  
9 with a lot of entrained oxygen in the ethanol  
10 itself when it is received and that causes  
11 corrosion problems in the tanks.

12 Pipelines are traditionally wet systems,  
13 meaning that there is water in the pipeline. And  
14 that tends to settle in the low spots in the  
15 pipeline. And this water comes from a whole  
16 variety of sources but most of it we receive in  
17 the fuels. We will get cloudy or hazy or even  
18 sometimes free water in the product that is  
19 supplied to us, both from the refiners and the  
20 vessels when it's imported.

21 Now this is not an intended product by  
22 any stretch of the imagination but it does occur  
23 and it come from the natural breathing of the  
24 tanks, condensation of the tanks. It comes from a  
25 whole host of different sources.

1                   There is a significant problem with  
2           ethanol blended gasoline if we get over one  
3           percent water. What happens is that the ethanol  
4           separates from the gasoline. And when that  
5           happens the ethanol removes itself from the gas  
6           and combines with the water and it will not  
7           recombine with the gas. And so I always refer to  
8           this as, you can't put Humpty Dumpty back together  
9           again. Because once it gets separated, it is no  
10          way that we can physically just mix them back  
11          together. So that's a problem.

12                 On the biodiesel front, some of the  
13          constraints that we have when we are handling  
14          biodiesel is that the biodiesel industry is  
15          genuinely in its infancy. And one of the problems  
16          that currently occurs is that there are many  
17          different biodiesel producers using a whole  
18          variety of feedstocks and a whole variety of  
19          processes. And the standards and performance of  
20          these biodiesels varies dramatically. So all  
21          things are not created equal when it comes to  
22          biofuel.

23                 The other issue that is significant and  
24          significantly a problem is the issue of trail  
25          back, which I'll explain a little bit later.

1           To talk specifically about what we do in  
2           our Central Florida operation. We are currently  
3           operating a 16 inch diameter pipeline, as we  
4           mentioned.

5           And it runs from our facility in Tampa,  
6           Florida where we have a terminal that can receive  
7           both rail cars and ocean-going vessels, and it  
8           pumps to our terminal in Orlando. But it's 120  
9           miles long and there is no significant elevation  
10          changes. So there is no real place for the water  
11          to pool in the pipeline.

12          We only transport gasoline on that line  
13          so we don't have any problems with intermixing our  
14          products.

15          We have, as I mentioned, a central  
16          collection point.

17          And there is a very simple system in  
18          that it has no intermediate breakout. Meaning  
19          that it pumps directly from Tampa to Orlando and  
20          there is no spot in the middle where we put it in  
21          new tanks and then transfer it to another pumping  
22          system, which we do regularly on a number of our  
23          other systems.

24          Comparatively, this is the hydraulic  
25          profile of our San Diego line, okay. This is

1 running from San Diego -- from our Watson station  
2 which is in the LA Basin down to San Diego. And  
3 most people would think that this is pretty flat  
4 area, okay. And it is relatively because we are  
5 not crossing any mountains. But if you will look  
6 at the profile that is exactly what the pipeline  
7 is doing. It's going up and down and up and down  
8 over the hills. And there are many spots where we  
9 could trap water in those pipelines.

10 The other major issue, and that has to  
11 do with biofuels, is the trail back issue, which I  
12 mentioned earlier, for jet engines.

13 This is a quote from a jet engine  
14 manufacturer. I am not going to validate it, you  
15 know. Basically what I am here to say is this is  
16 this concern. A bio-component in biodiesel, which  
17 is FAME or Fatty Acid Methyl Ester, is a surface-  
18 active material.

19 And that means that it can absorb to the  
20 pipe and tank walls as it passes through and then  
21 be released later into the next product that  
22 follows through the pipeline or in the tank. And  
23 very small amounts of FAME remain in piping  
24 manifolds, tanks. If you load it into a tank  
25 truck the following load of fuel, if you switch

1 from diesel to jet fuel for instance, could be  
2 contaminated with this product.

3 The restriction, at least put out by  
4 this engine manufacturer, is that they would not  
5 accept any fuel that had anything approaching five  
6 parts per million weight evaluation of FAME.

7 The problems that we experience with jet  
8 fuel contamination. Despite the best efforts  
9 water can, in fact, accumulate in the tanks. And  
10 for that reason jet fuel is filtered every time  
11 it's transported.

12 Water is removed by coalescing  
13 filtration. This is not a simple filter of, you  
14 know, running it through a very fine mesh filter.  
15 We actually have to separate the two in phases.  
16 You have to separate the water from the jet fuel  
17 itself.

18 What can happen is that these surface-  
19 active agents such as FAME from the diesel fuel  
20 will allow the water to pass through the filter  
21 itself and remain in the jet fuel. Now this is a  
22 significant problem considering the very low  
23 temperatures that jet engines must operate at at  
24 high altitudes. So this is one of the major  
25 concerns why we do not just move biofuels down any

1 pipeline.

2 What we are planning on doing in the  
3 Plantation operation in the southeast and in  
4 Oregon line is tailor to the nature of the  
5 business and to the physical assets that exist in  
6 those areas.

7 The first comment is that neither one of  
8 those pipelines transports commercial or military  
9 jet fuel, okay. So we are not running the risk of  
10 contaminating those products by bringing this down  
11 the pipeline.

12 The Plantation pipeline system will  
13 inject biodiesel into the bypassing stream of  
14 ultra-low-sulphur diesel into the pipeline. So  
15 basically we are going to be blending in the pipe.  
16 We are not blending in a tank. We are blending in  
17 the pipe and delivering to the various terminals  
18 in Georgia, North Carolina and Virginia.

19 A different setup exists in our Oregon  
20 facilities, okay. In our Oregon facilities we  
21 will blend the biodiesel in tanks because our  
22 Oregon pipeline has no tanks on the front end. It  
23 is basically a pumping station, it has not tanks.  
24 And so we will bring the biodiesel, either blended  
25 by us or by others, into the pipeline system and

1       then we will then transport it down to Eugene,  
2       Oregon. Again, this line does not handle jet fuel  
3       so there is no problem of cross-contamination.

4               There are a couple of other projects  
5       that we are, we are involved with that people may  
6       have some interest in. One is our CalNev  
7       Expansion Project which pumps fuels from the Los  
8       Angeles area to the Las Vegas area. And although  
9       this is not a California project it does impact  
10      California dramatically because all the fuel is  
11      sourced out of California.

12             That particular project, we will be  
13      increasing the capacity on that system from  
14      158,000 barrels a day to approximately 200,000  
15      barrels a day. We have been for the last two and  
16      a half to three years working with various  
17      agencies to get the actual permits approved and  
18      processed with the federal, state and local  
19      authorities.

20             We are currently scheduled to have the  
21      Environmental Impact Report completed by the  
22      fourth quarter of this year.

23             We currently have plans to construct  
24      that project in 2010 or next year.

25             I will mention, however, that the

1 current economic conditions may influence that  
2 project's schedule. Frankly the demand in the  
3 region is down substantially, as one would expect  
4 with high unemployment rates in the Las Vegas  
5 area. So the actual completion of the  
6 Environmental Impact Report will go ahead as  
7 scheduled, the construction may or may not occur  
8 in 2010.

9 PRESIDING MEMBER BYRON: Mr. Hahn,  
10 before you leave that one.

11 MR. HAHN: Yes.

12 PRESIDING MEMBER BYRON: You said,  
13 expecting to 200,000 barrels per day.

14 MR. HAHN: That's correct.

15 PRESIDING MEMBER BYRON: Are the units  
16 incorrect on the slide?

17 MR. HAHN: Well, if you are using Ks  
18 instead of Ms.

19 PRESIDING MEMBER BYRON: Okay.

20 MR. HAHN: I'm using an M.

21 PRESIDING MEMBER BYRON: All right.

22 MR. HAHN: The other major expansion  
23 project that is underway that would be of interest  
24 is we are currently working on our Fresno  
25 pipeline, which runs from our Concord facility



1 down to Fresno. We plan to increase the capacity  
2 by 3,000 barrels a day, and again I'm using an M,  
3 by May 1st. And increasing capacity by an  
4 additional 7,000 barrels a day by June 1st.  
5 Basically increasing the total capacity of the  
6 system by 10,000 barrels per day by the 1st of  
7 June. And this is done primarily with just some  
8 pump modifications and no other changes to the  
9 pipeline system.

10 With that I am free to take any  
11 questions you may have.

12 PRESIDING MEMBER BYRON: Thank you.

13 MR. HAHN: Very good, thank you.

14 MR. SCHREMP: Thanks a lot, Ed.

15 I am just going to take a brief moment  
16 here to load another presentation before I resume.

17 PRESIDING MEMBER BYRON: This is the  
18 continuation of your presentation, right?

19 MR. SCHREMP: That's correct.

20 Now that didn't take too long, okay. I  
21 think we are still doing pretty good for time.

22 Our last session for today has to do  
23 with the retail part of our distribution  
24 infrastructure. Marine terminals, distribution  
25 terminals and now the final step before going to

1 the tank to retail distribution terminals --  
2 stations, I should put it that way.

3 About 9,600 -- I put 10,000 on the slide  
4 to round up. There are a number of private retail  
5 outlets, cardlock facilities. If you include  
6 airports, marinas, you can get close to 10,000  
7 locations where there's some retail dispensing  
8 occurring.

9 It's a lot of fuel, it's 20 billion  
10 gallons a year. But once again, this recurring  
11 theme. We know there is a lot of renewable fuel  
12 that is going to increase in this entire  
13 distribution system. That throughput will need to  
14 be handled properly.

15 But more than just the fuel being able  
16 to handle through the system you have to have an  
17 adequate supply of the fuel. We don't think  
18 that's a problem with regard to ethanol, certainly  
19 in the near to mid-term.

20 But there is a vehicle population issue  
21 that is beginning to emerge and it has to do with  
22 flexible fuel vehicle, a sufficient quantity to  
23 handle what we anticipate being an increased  
24 amount of E85 in California to meet the RFS and  
25 the Low-Carbon Fuel Standards.

1                   So certainly those are something that we  
2                   are going to be looking at as we develop this  
3                   portion of the Integrated Energy Policy Report.

4                   Looking at sort of the retail and  
5                   different fuel types. Ethanol issues at retail  
6                   certainly will be that of the higher blends, the  
7                   E85.

8                   Or as was discussed earlier today, even  
9                   if we went to a mid-level blend of say E15 or E20,  
10                  you still have to have an infrastructure for that.  
11                  And if someone is going to have a separate part of  
12                  mid-level blends you have to have the underground  
13                  storage tank and the dispenser, which can be  
14                  upwards of \$100,000 per location. So E85 is  
15                  something we are looking at.

16                  And staff, we have to make some  
17                  assumptions about what's the pace of renewables  
18                  and then what does that mean for the  
19                  infrastructure system? Well specifically it means  
20                  more E85 dispensers. How many? So we are  
21                  essentially going to have to calculate a base  
22                  amount of ethanol, when we hit the blend wall.  
23                  The additional ethanol will have to be E85.

24                  And then how many flexible fuel vehicles  
25                  we need to have in the existing vehicle

1 population. Which then you get back out, what  
2 percent of the vehicles you are selling each year  
3 and starting when have to be FFVs.

4 So this is an exercise we intend to go  
5 through and present a range of scenarios. But  
6 likely we are going to see a very high expectation  
7 of more FFVs and a pretty large penetration of  
8 E85. But we will be developing those numbers  
9 pretty soon in our draft report.

10 VICE CHAIRMAN BOYD: Gordon.

11 MR. SCHREMP: Yes.

12 VICE CHAIRMAN BOYD: On that point.  
13 There are quite a number of FFVs running around  
14 out there in California, but if your calculations  
15 show we need more, we have already heard from the  
16 auto industry that it plans to make more.

17 But your calculations will also show how  
18 much E85 -- and you probably once again bring to  
19 our attention the number of E85 stations that  
20 would be ideal to fuel that fleet that's out  
21 there. And once again we are going to say, okay,  
22 so what next.

23 We are running into this dilemma of we  
24 don't see people stepping up volunteering to much  
25 extent. I realize there's a few people who want

1 to build infrastructure. But we have been up  
2 against a fueling infrastructure dilemma for all  
3 the years that we have had FFVs.

4 What are our options? What do we do?  
5 Petition ARB to pull the trigger?

6 MR. SCHREMP: If you mean by the trigger  
7 the requirement for --

8 VICE CHAIRMAN BOYD: Sorry, I'm talking  
9 code for us old-timers here. Yes, the fueling  
10 station infrastructure trigger.

11 MR. SCHREMP: Right. If there are a  
12 certain type of vehicles that are fueled on an  
13 alternative fuel, a sufficient number, then that  
14 would trigger a requirement for a sufficient size  
15 or a penetration in the retail stations. The only  
16 sort of issue with the flexible fuel vehicles is  
17 that they are just that, flexible. Gasoline, E85,  
18 some combination of the two.

19 Right now as you mentioned, Commissioner  
20 Boyd, yes, there are quite a few flexible fuel  
21 vehicles in California and very few of them are  
22 operating on E85 at this time. But there are  
23 people who are providing more E85.

24 VICE CHAIRMAN BOYD: What are there,  
25 three or four stations now?

1                   MR. SCHREMP: I think there's more than  
2     ten.

3                   VICE CHAIRMAN BOYD: Oh wow.

4                   MR. SCHREMP: Somebody will happy to  
5     address that in just --

6                   VICE CHAIRMAN BOYD: Maybe I'm getting  
7     ahead of the --

8                   MR. SCHREMP: Just a little ahead,  
9     that's all right.

10                  VICE CHAIRMAN BOYD: Sorry, I can't help  
11     myself.

12                  MR. SCHREMP: But you're right.  
13     Currently there are quite a few flexible fuel  
14     vehicles. So we would believe in the near- or  
15     mid-terms that the E85 stations would be that part  
16     of the puzzle, if you will, that's going to have  
17     to sort of pick up the pace.

18                  And then there is going to have to be an  
19     expansion of the presence of FFVs to meet these  
20     more aggressive RFS and Low-Carbon Fuel Standard  
21     goals.

22                  So we will be developing two scenarios  
23     and looking at sort of the higher and lower bend  
24     and the timing of what that means and what the  
25     implications are. So very early on, not much of a

1 problem. If we are going to E10 next year, 2011,  
2 2012 and 2013 aren't very far away. Especially  
3 when one is talking about investments by the  
4 automobile industry as well as investments in the  
5 retail industry for dispensing fuel. So certainly  
6 it remains a concern at this point.

7 Biodiesel does have some retail issues.  
8 There's fuel quality, there's underground storage  
9 tanks. We'll hear about that in just a few  
10 minutes.

11 Gaseous fuels, whether that's compressed  
12 natural gas, propane at retail and hydrogen, all  
13 have various infrastructure requirements. And we  
14 are certainly looking for people to provide us  
15 with additional information on what those barriers  
16 still are. And besides the economic barriers,  
17 which we understand, it's a much more expensive  
18 infrastructure.

19 And electricity recharging, whether  
20 that's plug-in electric hybrids at home. There  
21 are some issues about what is the impact on the  
22 load, when are they going to be charged. If they  
23 are at home will it be off-peak? To make sure  
24 it's off-peak are there special meters? If so,  
25 who pays for that? Is that something that goes

1       into the rate schedule?

2               And then finally, are there some issues  
3       currently going on that may be impacting  
4       availability of retail stations, especially in  
5       rural communities that have Enhanced Vapor  
6       Recovery. We have somebody that's going to talk  
7       about.

8               And are there any other issues that we  
9       are not aware of at this time that may reduce the  
10      number of retail stations in California and  
11      present a potential supply problem for  
12      communities.

13              So we have a lengthy list of presenters  
14      this afternoon and without further adieu I'll  
15      yield the microphone to Jeff Stephens. I think he  
16      can shed some light on the E85 station  
17      availability.

18              MR. STEPHENS: All right. Thank you,  
19      Gordon, for the introduction. My name is Jeff  
20      Stephens; I'm with Propel Fuels. And I want to  
21      thank the Commission for the opportunity to come  
22      in today. The invitation to bring Propel here.

23              And also I want to thank you for your  
24      interest in this topic and for your concern about  
25      the issues that we are facing out there at the



1 retail level.

2 What I want to do today is talk a little  
3 bit about what Propel does and hopefully through  
4 that answer Commissioner Boyd's question about  
5 what are we going to do with this conundrum of the  
6 retail fuels sector.

7 So what Propel does is build, own and  
8 operate a network of low-carbon fuel access  
9 points. We build fueling stations. Currently we  
10 have E85 and biodiesel stations in California and  
11 we are working to bring low-carbon fuels to the  
12 public.

13 Our mission is to do just that, bring  
14 low-carbon fuels to fleets and consumers. We have  
15 heard a couple of times today that we are going to  
16 need E85 to satisfy the RFS2. And if you look  
17 closely at the LCFS we are going to need biofuels,  
18 and especially ethanol and biodiesel, to satisfy  
19 the Low-Carbon Fuel Standard.

20 And I think our philosophy is it's great  
21 to have things in place that have the refiners and  
22 the producers putting those fuels into their fuel  
23 mix. But if you really want to make an impact you  
24 have to go to the consumers and get those  
25 consumers to participate in that marketplace. So

1 a critical component of any successful effort to  
2 reduce greenhouse gases is engaging that consumer.  
3 And that is actually what the LCFS and the RFS2 is  
4 trying to do, and that is to reduce the greenhouse  
5 gases. That's our goal.

6 So the fuels that we have available to  
7 do that right now are E85 and biodiesel. And to  
8 speak to some of the things that have already been  
9 said today, there's a large installed vehicle base  
10 of flex fuel vehicles that can utilize E85. There  
11 are approximately 400,000 in California right now.  
12 Some of the estimates, in fact one of the  
13 estimates by the CEC is that there could be up to  
14 five million of those vehicles in California.

15 As we heard this morning, Chrysler is  
16 committed to producing flex fuel vehicles as are  
17 the other US manufacturers.

18 And we have a huge fleet of diesel  
19 vehicles, all of which can use biodiesel in some  
20 blend.

21 And clean diesel vehicles are coming  
22 into the marketplace now, into California after  
23 years of being away. Light-duty vehicles and also  
24 medium- and heavy-duty vehicles that we already  
25 have in the fleets in California. These vehicles

1 are the fastest growing segment of clean vehicles,  
2 that is the clean diesels.

3 As you mentioned several times and we  
4 have heard several times today, this is an  
5 underserved market. Over 80 percent of the fuels  
6 sold at public pumps, a small percentage of the  
7 ethanol is into the public fleets. Those are  
8 being serviced to some extent. But 80 percent of  
9 the fuel is being sold at public pumps, those are  
10 not being served. There are a lot of E85 flex  
11 fuel vehicles that are out there that want to use  
12 E85 that can't find access to it. And that's what  
13 we are trying to do is provide that access to  
14 those, those vehicles and to that public.

15 One of the -- We see ourselves also as a  
16 platform for future fuels. So right now we have  
17 E85 that is predominately corn based. If you  
18 don't have an infrastructure that can service that  
19 fuel you are not going to be able to have an  
20 infrastructure in place when you get your second  
21 generation fuels. So having a retail  
22 infrastructure that can bring first generation  
23 fuels to the public is a stepping stone and a  
24 necessity to get those second generation fuels,  
25 whether it be algae, biodiesel or cellulosic

1 ethanol to the public.

2 The other issue is that we can reduce  
3 greenhouse gases with those fuels right now and we  
4 are doing that at our stations.

5 So there are a number of barriers  
6 specifically in California to implementing retail  
7 sites. And in general there are some barriers in  
8 the retail sector; we heard about those today.

9 Jim (sic) Braeutigam from Valero talked  
10 about the makeup of the retail stations that we  
11 have right now. Most of those, 80 percent of  
12 those -- he mentioned 80 percent of those retail  
13 stations are small business owners. And those  
14 small business owners, they have a difficult time  
15 in implementing any E85.

16 For one, the infrastructure is limited.  
17 So these current stations, the owners can't pull  
18 out one of their products to bring in a new  
19 product. It's just not something they can do.  
20 They can't add on another product because they are  
21 infrastructure-limited.

22 They also have, because they are a small  
23 businesses and you saw the profit margins for a  
24 lot of these stations, the revenue that they are  
25 generating is there to basically keep their

1 business going, pay their employees and feed their  
2 kids. They don't have a whole lot of capital.  
3 And because a lot of these are single-station  
4 owners they don't have a lot of resources in order  
5 to get capital to put capital improvements in and  
6 bring in another tank, bring in another dispenser.  
7 So they lack that ability.

8 They also lack the expertise. A lot of  
9 the current retail owners purchased their  
10 stations, they didn't build them themselves. so  
11 they don't have the expertise to go out and do the  
12 permitting, do the design and do the constructions  
13 themselves. So they are just at a loss for even  
14 doing anything with their stations.

15 And then even if they did get that  
16 infrastructure in they don't know how to market  
17 the product. They don't understand either E85 or  
18 biodiesel. And that it requires, because it is a  
19 new fuel, some marketing to get your customers  
20 into those sites.

21 That's what Propel has done. We have  
22 the expertise, we understand the products and  
23 understand both the E85 and biodiesel blends. We  
24 have the expertise to get through the permitting  
25 process. To do the design and construction and to

1 do the marketing for that fuel. That's what we  
2 bring to this, this arena. We are able to roll  
3 out these stations.

4 And before I get into the barriers I  
5 want to just talk just a little bit about those  
6 accomplishments. In less than ten months Propel  
7 has come to California and we have designed,  
8 permitted selected sites and constructed five  
9 stations in the Sacramento area that are now  
10 servicing that E85 population and the biodiesel  
11 population right now with B5 with a low-carbon  
12 fuel. We have --

13 Our E85 that we have been offering meets  
14 the 2020 guidelines for low-carbon fuel. It was  
15 California sourced up until recently when all five  
16 of the California producers have been idled. We  
17 have been able to source California fuel that  
18 meets the E85, meets the 2020 Low-Carbon Fuel  
19 Standard. So it's possible to do this and to  
20 offer the public a low-carbon fuel that meets  
21 those guidelines.

22 It was not without some issues. So  
23 there are some issues out there that we are  
24 struggling with and that in general other folks  
25 that are trying to put in E85 and biodiesel

1 infrastructure are struggling with. I'll go over  
2 those briefly.

3 The major issue with E85 right now is  
4 that because of a Underwriter Laboratory decision  
5 in 2006 to revoke the listings that were out there  
6 for components of dispensers to dispense E85 there  
7 is currently not a UL listing for an E85  
8 dispenser. UL revoked that listing in lieu of a  
9 new standard for an E85 dispenser.

10 However, since 2006 there have been no  
11 UL listings for E85 compatible components for  
12 dispensers. It's been a more than three year,  
13 almost a three year process to go through that UL  
14 listing. They still do not have a resolution to  
15 that. There is still no E85 dispenser that is  
16 listed for E85 use. That creates a major business  
17 risk for that retail deployment.

18 We have, we have seen that directly in  
19 our issues. We have gone -- and one of the  
20 additional components of that is that the  
21 International Fire Code and the California Fire  
22 Code require that dispensers of fuel have a third-  
23 party listing for those dispensers.

24 The CUPAs have not uniformly regulated  
25 that listing. So it says that they are supposed

1 to have a listing but some of the CUPAs aren't  
2 regulating that. There's uneven regulation of  
3 that requirement.

4 That creates a business risk. We  
5 actually have had five stations where -- actually  
6 more than five stations. We have several stations  
7 in addition to the five that we built that are  
8 permitted. But we have run up against a -- one  
9 issue where we weren't issued a permit after we  
10 had spent a fair amount of time and money in  
11 design and site selection and permitting. That we  
12 were not issued a permit because there was no E85  
13 listing.

14 Other states have -- this is a  
15 nationwide issue because it is an International  
16 Fire Code requirement or a suggestion from the  
17 International Fire Code. Other states have gotten  
18 around that issue by issuing statewide variances  
19 or have provided guidance to local authorities so  
20 that local authorities understand the issues.

21 There are more than 2,000 E85 stations  
22 nationwide and there have been no failures of this  
23 equipment. So it is not a safety issue that we  
24 are dealing with because there have been no  
25 failures of any of this equipment. And all of the



1 equipment that has been deployed had, previously  
2 had UL listings on that equipment. So for --

3 VICE CHAIRMAN BOYD: So why was the  
4 listing withdrawn? On what grounds?

5 MR. STEPHENS: Well we are not, we are  
6 not exactly sure. We are trying to, trying to  
7 understand that. The entire industry has tried to  
8 understand it with UL. But basically what they  
9 have said is that their listings for other fuels  
10 are a listing for an entire dispenser unit. So  
11 that's the entrance into the dispenser, including  
12 all of the hanging hardware.

13 The way the ethanol listing, the E85  
14 listing was for individual components. So the  
15 previous listing was for a component that was a  
16 hydraulic tree or a hose or a nozzle or connectors  
17 and they had individual listings for all of those.  
18 UL decided they didn't like the way that looked,  
19 for whatever reasons, and revoked all of those and  
20 said, we are going to revoke those listings in  
21 lieu of a new standard. And they did that in  
22 October of 2006. It took them a year to come up  
23 with a new standard.

24 And in the fall of 2007 they started  
25 requesting submittals for the testing. And at

1       this point in time there has been -- there's  
2       components that have passed that standard but no  
3       entire dispenser has passed the standard. And in  
4       fact one of my questions to UL has been -- I've  
5       talked with --

6               In our case all components of our  
7       dispensers except the hoses have passed the new  
8       standard. But they are not listed because the  
9       listing is for an entire dispenser. So there will  
10      not be a listing until the hoses pass. And it  
11      turns out, even after -- even more than a year and  
12      a half after that standard was opened up for  
13      submittal, no hose manufacturers, at least within  
14      the last month. No hose manufacturer had actually  
15      submitted hoses for testing.

16             So it could be up to another six to ten  
17      months, maybe even longer, before UL gets a  
18      submittal and then tests for those hoses. And  
19      presumably once those hoses have been submitted  
20      that they would hopefully pass and then we would  
21      have a listing.

22             VICE CHAIRMAN BOYD: So back in the days  
23      of just individual components was there no hose?

24             MR. STEPHENS: There was a hose.

25             VICE CHAIRMAN BOYD: Certified?

1           MR. STEPHENS: There was a hose that had  
2 a UL listing. You could, you could go to the  
3 shelf and get a hydraulic tree --

4           VICE CHAIRMAN BOYD: And a hose.

5           MR. STEPHENS: -- and individual hoses  
6 and a hose. And the hose we use --

7           VICE CHAIRMAN BOYD: But the same hose  
8 won't pass the current test?

9           MR. STEPHENS: Apparently they made the  
10 standard, the new standard is more stringent than  
11 the previous ones. And in fact I've heard from  
12 some hose manufacturers that they are not even  
13 interested in submitting because they don't see a  
14 business case. So we are very limited. The hose  
15 manufacturers that I have spoken to that have,  
16 that have an intention to submit have been working  
17 for a year to make sure that they can pass that  
18 newer standard.

19           So it's an issue with a very stringent  
20 standard and then a revocation of previous  
21 standards.

22           So what we would like to recommend is  
23 that the State Fire Marshall investigate this UL  
24 listing issue. I understand that they are aware  
25 of it. And look at any safety aspects of E85

1 dispensing using this equipment and issue a  
2 statewide variance or provide some guidance to  
3 local authorities.

4 Just to put this in perspective. And  
5 you mentioned earlier how many stations, E85  
6 stations that California has. Just to put it in  
7 perspective with other states. The state of South  
8 Dakota, which has about two percent of the  
9 population of California, has five times as many  
10 ethanol stations, E85 stations, as the state of  
11 California does. So if California wants to be a  
12 leader in biofuels, they are lagging right now and  
13 there are things that they can do to catch up but  
14 it is definitely, it is definitely behind when it  
15 comes to biofuels.

16 So that's the major issue that we have  
17 with the E85 and the risk that we have in the  
18 permitting process.

19 The other issue that we have run up  
20 against is with biodiesel. And I haven't spoken  
21 too much about biodiesel because it is a little  
22 harder for me to get excited about the prospects  
23 because of this issue.

24 We are required right now, we are only  
25 to run B5 or to offer B5. The State Water

1 Resource Board has a prohibition of biodiesel in  
2 underground storage tanks. Their authority says  
3 that it requires a third-party testing of  
4 compatibility and they have said that there is no  
5 compatibility testing for biodiesel blends. There  
6 is a current limitation to B5 in those underground  
7 storage tanks.

8 But if you look at making impacts on  
9 greenhouse gas reductions, and also even having  
10 compliance to EPCAct, you have to have B20 or  
11 greater blends in order to do that. And in fact  
12 there are several federal grants that are out that  
13 we could apply for, but they have a requirement  
14 that we -- they are involved with B20 and greater.  
15 So the fact that underground storage tanks can't  
16 store anything above B5 is inhibiting, I think,  
17 federal funding coming into California.

18 And again and with respect to other  
19 states. Many other states have no requirements  
20 for even switching from diesel ULSD to B20. And  
21 federal law has no requirement for third-party  
22 testing, compatibility testing.

23 There is in the works right now -- one  
24 of the things we'd recommend is immediate passage  
25 of some emergency regulations to allow up to B20.

1 And we understand there are conversations within  
2 the Water Board and the EPA, the California EPA,  
3 to allow that.

4 We would also urge the Commission to  
5 look into assisting to expedite the third party  
6 testing. Or in lieu of that, to try and find a  
7 way to eliminate the requirement for third party  
8 testing and move that to manufacturers'  
9 recommendations.

10 Along these lines, these are really the  
11 two major issues. Before I end one thing I did  
12 want to mention that came to mind when I was  
13 talking about the biodiesel, is that we would also  
14 like to recommend that wherever possible that  
15 there is considerable more inter-agency  
16 communications.

17 And my example of this is that in our  
18 conversations with the Water Board, with the State  
19 Water Resource Board, we were told that they would  
20 prefer that no fuel be stored in underground  
21 storage tanks. In contrast to that, we were  
22 awarded grants to assist in the building of the  
23 stations in Sacramento by the Sacramento Air  
24 Quality Management District. And that money came  
25 from the Air Resources Board and there was a

1 requirement to have those tanks put underground.  
2 So one agency was telling us that they'd prefer  
3 that the fuel not go underground and another  
4 agency was requiring us to put underground storage  
5 tanks in. So that's just another recommendation  
6 that there be more interagency communication on  
7 some of these issues.

8 And that's all I have for today. I want  
9 to thank you again for inviting me here and I'll  
10 answer any questions I can.

11 PRESIDING MEMBER BYRON: Mr. Stephens,  
12 thank you. There was an issue that was brought up  
13 earlier by one of our presenters, and forgive me,  
14 I'm not going to remember which one, about the  
15 nozzle sizes of E85 interacting with the regular  
16 gasoline ones.

17 MR. STEPHENS: Right.

18 PRESIDING MEMBER BYRON: Can you shed  
19 some light on that for me.

20 MR. STEPHENS: The context of that was  
21 in mis-fueling. So the context was that because  
22 most often E85 is less expensive than gasoline  
23 that some drivers would mis-fuel and just put E85  
24 in a non-flex fuel car.

25 We don't have a long history of E85 in

1       our retail sites. We have been pumping E85 at  
2       those five stations for between four and five  
3       months. We have had one issue of mis-fueling.

4               We do put notices up on all of our tanks  
5       and all of our dispensers that this fuel can only  
6       be used in flex fuel vehicles.

7               We do get calls. We have our number for  
8       our hotline on our dispensers. We do get calls  
9       from customers saying, can I use this in my  
10      vehicle. We can walk them through and find out  
11      whether -- most flex fuel vehicles are clearly  
12      labeled that they are flex fuel but some of them  
13      actually aren't. But we can look at the vehicle  
14      identification numbers and help those customers  
15      get through it. But I haven't heard that as a  
16      major issue, as mis-fueling as being a major  
17      issue.

18              As I mentioned, there's 2,000 of these  
19      stations across the country, many of those in the  
20      Midwest, and I haven't heard of mis-fueling as  
21      being a major issue in the industry.

22              PRESIDING MEMBER BYRON: Thank you.

23              MR. STEPHENS: Other questions?

24              PRESIDING MEMBER BYRON: No, thank you  
25      very much.



1           VICE CHAIRMAN BOYD:  You have left me  
2       with plenty of questions but not for you.

3           MR. STEPHENS:  Well I'll be glad to come  
4       back at some time and answer those and tell you  
5       how we can solve that problem.

6           VICE CHAIRMAN BOYD:  My questions you  
7       don't have the answers, you have the questions.

8           (Laughter.)

9           MR. STEPHENS:  Thank you.

10          MR. SCHREMP:  Thanks a lot, Jeff.

11          And then I think next up on the list is  
12       Gary Castro, Food and Ag, the Division of  
13       Measurement Standards.  The first of three folks  
14       from that agency.

15          MR. CASTRO:  Hello, my name is Gary  
16       Castro.  I am with the California Department of  
17       Food and Agriculture.  I work for the Division of  
18       Measurement Standards, which is part of the  
19       Division.  On behalf of the Department I would  
20       like to thank you for the opportunity to discuss  
21       this subject here, E85 fuel ethanol retail issues.

22          First of all, the Division of  
23       Measurement Standards mission statement is to, as  
24       it states here on the board:

25               "Preserve and defend the

1 measurement standards essential in  
2 providing citizens a basis of value  
3 comparison and fair competition in  
4 the marketplace."

5 So we do, that's our oversight for the  
6 Division as a whole.

7 Now authority comes from Division 5 of  
8 the Business and Professions Code in case you want  
9 to look for it.

10 Measurement standards. Well we ensure  
11 measurement traceability. As we know, as we found  
12 out as a division, that California consumers today  
13 have confidence when they make fuel purchases.  
14 And our oversight with our three programs mostly  
15 cover the vital issues of quality, delivery  
16 accuracy and of course advertising and labeling of  
17 new types of dispensers and so forth. Advertising  
18 at service stations.

19 We promote uniform requirements and  
20 practices and also ensure that consumers get what  
21 they pay for, which is one of our greatest charges  
22 here.

23 And leveling the playing field is out  
24 there. It's something we take much pride in.

25 And because the marketplace, the world

1       seems to be shrinking, we try to harmonize our  
2       laws with international laws. And we have  
3       agencies that we work with that continue to work  
4       together to harmonize laws, even though we have  
5       different units of measure and so forth, such as  
6       metric versus customary or avoirdupois. We  
7       continue to work closely with these organizations.

8               Now California law requires that all new  
9       models of commercial weighing and measuring  
10      devices be evaluated by the Department before they  
11      can be used in commercial service in California.  
12      And as seen there, a device is anything that is  
13      used to buy or sell that is used, where the weight  
14      or measure is the basis for sale.

15             And we as a division are participants in  
16      the national program, the Type Evaluation Program,  
17      which California has a laboratory. And it's  
18      participating with the National Type Evaluation  
19      Program which sets standards of requirements for  
20      devices that will be used commercially throughout  
21      the state and of course across the country.

22             Now the California Type Evaluation  
23      Laboratory or program here in California is the  
24      only lab east of the Mississippi, or west of the  
25      Mississippi, excuse me, that does this type of

1 work. We work very closely with the national  
2 group.

3 The other program that we have is the  
4 Device Compliance Program. They are responsible  
5 for device accuracy. Devices that are found in  
6 the field that meet the criteria for Type approval  
7 are checked periodically by our inspectors, but  
8 principally by our county inspectors whom we work  
9 closely with.

10 We do have a provision in our laws that  
11 allow device service agencies to place new devices  
12 in service as well as repair them and put them  
13 back into use until a Weights and Measures can  
14 inspect the device.

15 And our fuel quality, advertising,  
16 labeling and quantity under the Petroleum Products  
17 Program. While we monitor fuel quality we have  
18 investigators that will take samples and of course  
19 look at advertising at service stations, excuse  
20 me. And check labeling and quantity of products,  
21 petroleum products, petroleum automotive products.

22 Our state and county relationship is a  
23 very good one. It's effective in enforcing the  
24 laws in the state of California. The counties  
25 have jurisdiction within their borders, however,

1 the state has oversight of county activities. We  
2 provide training and at times assistance to help  
3 them enforce the laws of -- for measurements  
4 standards, California law regarding to weights and  
5 measures. The combinations that we see there.

6 Now standards organizations. We work  
7 with these organizations and are active members.  
8 And of course as you see there, I'll let the  
9 bullets speak for themselves. It promotes much  
10 uniformity across the country as well as  
11 California.

12 And of course one of the key interests  
13 in California is to facilitate economic growth and  
14 trade here in California.

15 Organizations such as ASTM  
16 International, the Society of Automotive  
17 Engineers, as well as the National Institute of  
18 Standards and Technology, Weights and Measures  
19 Division.

20 VICE CHAIRMAN BOYD: I was going to ask  
21 you if you interact with UL. Were you a player in  
22 this drama that was laid out to us earlier?

23 MR. CASTRO: I walked in a little late.  
24 And yes, actually we are somewhat involved. I do  
25 touch on that. And I just wanted to give you a

1 background of the division. The other slides will  
2 have similar information so hopefully it wasn't  
3 too much. We tried to limit it. But yes,  
4 Underwriters Laboratory is one of the issues that  
5 we are faced with, or that we are waiting for  
6 information from them.

7 Now E85, fuel ethanol. The question has  
8 come up, why E85? Well what we have discovered is  
9 that there are two reasons principally, and there  
10 are more to be sure, of why E85. And it's cold  
11 starting concerns for engines in colder climates,  
12 and of course, visibility of the flame, which is a  
13 safety issue.

14 And E85, as brought up there, is a  
15 mixture of 85 percent denatured ethanol and  
16 gasoline or other hydrocarbons by volume. And the  
17 minimum content refined is 70 percent. And this  
18 again is depending on the climate what the  
19 concentration will be. But it is labeled under  
20 E85, ethanol fuel E85.

21 Perhaps you have seen these statistics  
22 already with the gentleman prior to me. This is  
23 true. The information we found is that there are  
24 many vehicles in the California.

25 And in California we have identified 15

1 service stations that now offer E85 fuel ethanol.

2 Of course it has 27 percent less energy  
3 than gasoline.

4 The cost per mile to consumers. Well we  
5 want to inform them because they will be impacted.  
6 As we know the cost of ethanol versus gasoline.  
7 However gasoline gallon equivalent to help educate  
8 people has been considered, although there are  
9 some issues there that need to be addressed. This  
10 issue came up years ago with the compressed  
11 natural gas, CNG, using this term to help educate  
12 the motoring public.

13 Dispensers. Now I mentioned the  
14 California Type Evaluation Program and the  
15 National Type Evaluation Program. And these  
16 agencies do evaluate these systems for accuracy.

17 And because they are not Underwriters  
18 Laboratory approved, as mentioned, we do not hold  
19 back from testing the devices or accuracy.

20 However, part of the issue with the  
21 Underwriters Laboratory, waiting for the approval  
22 of this type of product. We find that state and  
23 local fire marshals may not or may grant use  
24 permits for those who wish to use these  
25 dispensers. However, there are dispensers that

1 will measure accurately and we do test for that  
2 accuracy where we do find these dispensers.

3 One of the issues that we are faced with  
4 as a state and agency is that not all county test  
5 standards, we call them provers, and generally  
6 it's a five gallon prover or measure that we use  
7 to determine the accuracy of the device. Well the  
8 product is corrosive in nature and many of the  
9 provers that the counties have are mild steel and  
10 they do cause problems because it corrosive. So  
11 the issue we are faced with is purchasing new test  
12 standards.

13 We feel that in addition to that, we may  
14 add that at the Department we do not currently  
15 have the equipment needed to test E85 as we find  
16 it or as it is right now. So all complaint  
17 samples must be tested by an independent  
18 laboratory. And that may prove costly, and the  
19 cost will be borne by the Division, as we are  
20 charged with the oversight of the quality of fuel,  
21 E85 fuel ethanol.

22 And also the Division is going to have  
23 to prepare to test ethanol, or E85 fuel ethanol.

24 The marketplace, as brought out here,  
25 cannot go to different concentrations of ethanol



1 gasoline mixtures without lawful standards. In  
2 our charge we are charged with testing to  
3 specifications of -- consensus standards, rather.

4 But the Department has in our statute a  
5 Developmental Fuels Variance Program. So those  
6 that come to us with alternative fuels that there  
7 are no standards for, we do grant a variance if  
8 they meet certain criteria.

9 And the fuel will not be made available  
10 to the general public. Generally it's  
11 developmental as brought out. And it's usually  
12 used by those in a co-op of sorts and it's shared  
13 amongst others. And we request that they do some  
14 quarterly reports and we look at the data and we  
15 use this data to help develop a consensus of  
16 standards. Since we are participants in the ASTM  
17 and SAE organizations and we are able to provide  
18 input, we will provide them with information  
19 regarding such fuels.

20 And of course if the standards are  
21 adopted then by statute we will adopt them as  
22 well. And you will be able to produce -- the  
23 Individual may provide that type of fuel to the  
24 market, the California marketplace.

25 I'm not going to touch this one because

1       there's quite a bit here. I'll just suffice it to  
2       say that there are labeling, label regulations for  
3       dispensers as well as advertising requirements.

4               The product name as you see there and  
5       the labeling. I heard the gentleman before me  
6       discuss, describe dispensers and nozzles and  
7       things of that nature. We do pay attention to  
8       those, however we do not regulate the nozzle size  
9       and things of that nature. But the labeling is an  
10      issue that the state of California is charged with  
11      discussing or regulating.

12             And we are working to harmonize our  
13      requirements with the Federal Trade Commission  
14      requirements as they have, as it shows there on  
15      the screen. Where there are certain labeling  
16      requirements that need to be clarified, as you  
17      say.

18             And consumer warnings. I heard the  
19      gentleman before me. That is a concern of ours as  
20      well. Because the possibility of putting the  
21      wrong fuel in a vehicle is there.

22             So in that endeavor new laws have to be  
23      established and we are working on that now at  
24      present.

25             That's what I have. Real brief. Once

1 again, thank you for the opportunity to discuss  
2 this part of the subject and we will have more  
3 information later on the biodiesel and hydrogen.

4 PRESIDING MEMBER BYRON: Mr. Castro,  
5 thank you for being here. A quick question.

6 MR. CASTRO: Yes.

7 PRESIDING MEMBER BYRON: I know you may  
8 not have heard all the previous presentation but  
9 there was the issue that Commissioner Boyd brought  
10 up, the lack of a UL listing for E85 dispensers.  
11 Can you shed any light on why UL has not or why  
12 they have withdrawn their listing since 2002?

13 MR. CASTRO: Not really because I have  
14 worked with device manufacturers and they were not  
15 forthcoming with why the Underwriters Laboratory  
16 had not issued or granted them permission to use  
17 this device or this fuel with their dispensers.  
18 So I really couldn't add anything other than it  
19 has been an issue for a number of years and device  
20 manufacturers have attempted on numerous occasions  
21 to have their dispensers approved by the  
22 Underwriters Laboratory.

23 PRESIDING MEMBER BYRON: Well, and of  
24 course you had indicated you test them anyhow.  
25 You go ahead and do your proof testing with them.

1       Should we be making an inquiry? Should government  
2       be making an inquiry to UL as to why they are not  
3       proceeding with a listing?

4               MR. CASTRO: That's a good question,  
5       actually. Looking at some reports, the breakdown  
6       of dispensers that dispense ethanol and biodiesel,  
7       they found that by routine maintenance it's a safe  
8       product in one respect. Because if you had the  
9       same -- like I said, the routine maintenance of  
10      regular gasoline and diesel dispensers. If they  
11      were maintained at that rate this fuel is able to  
12      be stored -- used by these dispensers.

13             So an inquiry, I would think so.  
14      Because there are dangers involved to be sure just  
15      like any petroleum product. Fire being one of  
16      them. But in this case here I would just say yes,  
17      there should be an inquiry. Somebody has a  
18      question.

19             PRESIDING MEMBER BYRON: Thank you.

20             MR. STEPHENS: Excuse me, can I -- this  
21      is Jeff Stephens again from Propel. Can I offer a  
22      clarification on the UL issue?

23             PRESIDING MEMBER BYRON: Please.

24             MR. STEPHENS: One is that the practice  
25      of revoking a standard, UL revoking a standard in

1        lieu of a new standard is actually a fairly --

2                PRESIDING MEMBER BYRON:  It's normal.

3                MR. STEPHENS:  -- normal practice of UL.

4        So it is not unusual in this case that this has  
5        been done.  It is unusual that it has taken so  
6        long for the new standard to be put in place.

7                And as I mentioned earlier, they are  
8        still waiting basically for manufacturers to  
9        submit materials and equipment for testing.  And  
10       from what I understand that's because the standard  
11       is very high and the manufacturers want to make  
12       sure they are going to meet the standard before  
13       they actually submit.

14               VICE CHAIRMAN BOYD:  I didn't want to  
15       protract this discussion today but I'm hard  
16       pressed to believe that the proponents of the RFS  
17       aren't equally concerned and want to make personal  
18       inquiry.  To what extent is DOE concerned about  
19       this or et cetera, et cetera.

20               So yes, Commissioner, we need to make  
21       inquiry of various parties.  Ultimately somebody  
22       has got to ask the hose manufacturers when they  
23       are going to get off the dime, et cetera, et  
24       cetera.  As I indicated to the last speaker, there  
25       are lots of questions on the table that we need to

1       pursue.

2                   MR. CASTRO:   Thank you.

3                   VICE CHAIRMAN BOYD:   And I guess while  
4       speaking I will comment that we have been working  
5       with our sister agency here on the issues that  
6       they brought up and perhaps -- each of our  
7       agencies have needs and wants and various kinds of  
8       resources.   It takes kind of a combination of  
9       those two to make some of this work.

10                  So those who have studied closely our  
11       recently published Alternative Fuels Investment  
12       Plan might note that we feel like we are in a  
13       position to help our sister agency with their  
14       needs for equipment and what have you so they in  
15       turn can help us with our needs for getting some  
16       of this stuff moving quickly.   So hopefully we can  
17       scratch each other's back.

18                  MR. SCHREMP:   Gary, I had a quick  
19       question.   You mentioned on the gasoline gallon  
20       equivalent pricing that this issue has come up  
21       before and there are some, I guess there are some  
22       issues you need to work through on that.   Could  
23       you just sort of briefly mention kind of what  
24       those macro issues are for gasoline gallon  
25       equivalent pricing.

1           MR. CASTRO: Sure. There was quite a  
2 bit of information during the time that compressed  
3 natural gas was being introduced as a fuel. But  
4 here's what -- we summarize it in this way here:

5                   "The use of a single  
6 conversion factor introduces  
7 uncertainties in measurement  
8 because it does not account for the  
9 differences in product composition  
10 throughout the measurement process  
11 for regional supplies."

12 So the variety of the components is brought out.

13           Also we wanted to note that the cubic  
14 foot cannot be considered a practical unit of  
15 measurement, which was the compressed natural gas  
16 issue. Because the value assigned to the cubic  
17 foot varies among standard bodies.

18           So those are just a couple of the issues  
19 that were raised and there are more that are  
20 coming regarding ethanol and the gasoline gallon  
21 equivalents. Right now I didn't take note of  
22 those but those were, these are two issues right  
23 now that we are looking into.

24           MR. SCHREMP: Thank you very much, Gary.

25           The next speaker is Allan Morrison. And

1 the on deck, to use the baseball analogy, will be  
2 Chelsea Sexton.

3 PRESIDING MEMBER BYRON: I'm just going  
4 to comment while we're setting up for that. If I  
5 understood you correctly, Mr. Castro, then you  
6 have called into question the way the natural gas  
7 industry has been measuring natural gas for a long  
8 time.

9 MR. CASTRO: Actually we let the --

10 PRESIDING MEMBER BYRON: You need to  
11 come to a microphone so the recorder can catch it.

12 MR. CASTRO: Actually you can find the  
13 information on that, on the National Conference of  
14 Weights and Measurements. Publication 15 I  
15 believe it is, the 1996 edition. It has the  
16 entire, all the information and discussion and  
17 background on that particular matter.

18 PRESIDING MEMBER BYRON: Thank you.

19 MR. MORRISON: Hello, good afternoon,  
20 Commissioners. I appreciate the opportunity to  
21 speak before you. My name is Allan Morrison. I  
22 am a chemist with the Petroleum Products  
23 Laboratory in Division of Measurement Standards  
24 for the California Department of Food and  
25 Agriculture.



1           I am here to discuss the issues related  
2   to quality of biodiesel and biodiesel blends. My  
3   slides have the same slides as Gary so I'll skip  
4   over the first slides so everybody won't get  
5   bored.

6           PRESIDING MEMBER BYRON: Thank you.

7           MR. MORRISON: We'll go to the -- You  
8   can read this information. Okay, here we go.

9           One thing here on the ASTM International  
10   I will mention. The Petroleum Products Laboratory  
11   does have a representative that attends the ASTM  
12   meetings. We have a voting member on the D2  
13   committee, which is the fuels committee. We  
14   actively participate and represent the concerns of  
15   the state of California in that committee. We do  
16   have access to a lot of knowledgeable information  
17   -- people who have knowledgeable information as a  
18   result of our activities.

19          Okay, biodiesel. First of all  
20   biodiesel, as everybody knows, is a methyl ester  
21   of a fatty acid. Biodiesel blends is a mixture of  
22   that methyl ester plus traditional diesel fuel or  
23   traditional petroleum diesel fuel. And those are  
24   the topics I'm speaking on today.

25          First of all the Department is required

1 under state law to establish a standard based on a  
2 consensus organization such as ASTM specification  
3 for compression-ignition fuels or fuels that we  
4 commonly call diesel fuel.

5 Currently the specification for diesel  
6 fuel, D975, limits the quantity of biodiesel that  
7 may be in that fuel to five percent. That's a  
8 modification that went into effect in December of  
9 last year. That creates problems for people who  
10 wish to sell biodiesel higher than that five  
11 percent.

12 At the same time ASTM established a new  
13 standard, the D7467, which is a specification for  
14 biodiesel blends from 6 to 20 volume percent.  
15 CDFA and measurement standards is currently in the  
16 process of establishing new regulation that will  
17 allow that fuel to be sold to the general public  
18 in the state of California.

19 As a result of both of these the changes  
20 in the 975 and the new standard 7467, biodiesel  
21 blends B21 to B100 are no longer able to be sold  
22 in California as a finished fuel to the general  
23 public. Again, that does create some issues.

24 California law currently allows for  
25 controlled sales of non-standard fuels. Those

1 controlled sales can be to either a fleet, a co-op  
2 or municipal agencies.

3 CDFA and Measurement Standards has  
4 currently granted over 50 variances for that  
5 purpose.

6 We do need a little bit of additional  
7 legislation to help us with the record keeping.  
8 Things like record auditing and things like that  
9 but those are minor, minor issues.

10 California distributors, producers and  
11 consumers do have a desire for higher blend  
12 biodiesel fuels. Currently they are no consensus  
13 standards and there is no way for the Division to  
14 adopt regulations or adopt those standards.

15 We do plan to begin method development  
16 work to help facilitate establishment of higher  
17 blend, of a consensus standard for higher blend,  
18 blend mixtures.

19 Biodiesel and biodiesel blend labeling.  
20 Currently California law and federal law are not  
21 in agreement with each other. In our new  
22 regulations that we are proposing we plan to  
23 modify our laws, our regulations to correspond  
24 with the federal requirements.

25 Blend issues. There's a few other small

1       minor issues. First of all, due to the taxation  
2       issue most B100 is actually B99 because blend it  
3       with a little bit of diesel to obtain the tax  
4       credit.

5               This produces a technical problem for us  
6       because our regulations state that all blends will  
7       be made with biodiesel blend stock that meets  
8       B100. Of course it won't. But that's a minor  
9       technical issue that we are trying to address  
10      within our regulations. Hopefully it will not  
11      create a problem or a detriment to the sale of any  
12      biodiesel blends.

13             Splash blending technique. This is an  
14      area where there are problems. Biodiesel and  
15      diesel fuel do not mix readily without a lot of  
16      stirring. When they do splash blending at racks  
17      there has been an observed -- not a separation but  
18      when you -- say you add 100 gallons of biodiesel  
19      to 1,000 gallons of diesel fuel. It doesn't mix  
20      thoroughly and you will have a variation of  
21      concentration throughout the mixture.

22             The travel from the rack to the station  
23      doesn't provide sufficient agitation to mix the  
24      two components. It's something that needs to be  
25      studied further. As we see more biodiesel sold

1 and we have the opportunity to sample in  
2 concentration we will sort of monitor that.

3 VICE CHAIRMAN BOYD: Do you see the sale  
4 of much B100/B99?

5 MR. MORRISON: We do under the  
6 variances. There are a group of consumers and  
7 distributors who basically want B99, pure product.  
8 They are a small group but they are a very loyal  
9 consumer group. So that's why we have issued the  
10 variances which allow those groups and  
11 organizations to, to sell their product. There's  
12 not a huge demand but there's a significantly  
13 active group of people that do want to have that  
14 ability.

15 VICE CHAIRMAN BOYD: So they have either  
16 said, to heck with my warranty or --

17 MR. MORRISON: Pretty much.

18 VICE CHAIRMAN BOYD: -- they're old,  
19 they're beyond warranty.

20 MR. MORRISON: Pretty much. I mean,  
21 they strongly believe that the product, you know,  
22 doesn't have issues with their cars.

23 VICE CHAIRMAN BOYD: I know a few of  
24 them.

25 MR. MORRISON: We even have people who

1 run straight vegetable oil in their vehicles and  
2 are very happy with that. The variance process  
3 allows those groups to continue to sell and use  
4 that product.

5 A few issues about fuel dispensers. All  
6 diesel fuel dispensers up to B20 are approved for  
7 biodiesel blends up to B20 so there's very little  
8 problems with that.

9 There are currently two manufacturers  
10 who have had their devices approved for greater  
11 than B20 blends and there are others that are  
12 currently submitting their devices for testing.

13 There are a few other issues. Again,  
14 the Underwriters Laboratory issue. Which I don't  
15 in the Lab, in the Petroleum Lab ever deal with.

16 There are some issues with the State and  
17 Local Fire Marshals. But biodiesel by and large  
18 being less flammable than diesel fuel, there is  
19 not much issue there. Those are -- I think,  
20 mainly the seal problems are the biggest issue and  
21 those can be taken care of pretty easily.

22 Here is another slide. Underground fuel  
23 storage tanks. An issue has come up recently  
24 about underground fuel storage tanks and not being  
25 able to store biodiesel in that. Currently

1        biodiesel blends up to B5 have no problem and are  
2        allowed to be stored. Biodiesel blends from B6  
3        and above are currently not approved for  
4        underground fuel storage tanks.

5                That is an issue that the State Water  
6        Board is dealing with. We are kind of on the  
7        sidelines with that issue. But it does affect the  
8        ability to sell higher level blend concentrations.

9                This is just another slide.

10              And that's basically it. This is our  
11        contact information. Do you have any questions?

12              PRESIDING MEMBER BYRON: Mr. Morrison,  
13        I'm afraid I don't know why the State Water  
14        Resources Control Board would not approve  
15        biodiesel for underground storage. Can you  
16        enlighten me?

17              MR. MORRISON: It's basically a federal  
18        requirement. And I'm not an expert on this, this  
19        is just my understanding. That the federal  
20        requirement for underground fuel storage tanks and  
21        approval of those has not been obtained for  
22        biodiesel. It's a different chemical, it has  
23        different properties. It affects permeabilities  
24        differently. It affects seals differently.  
25        There's a lot of issues that have to be addressed.

1                   Again it's a manufacturer and  
2           Underwriters Laboratory process. The  
3           manufacturers have to submit their tanks to the  
4           UL. They have to be approved. I think -- I'm not  
5           sure if there's a representative from the Water  
6           Board here or not but I think the Water Board is  
7           trying to work with manufacturers in coming up to  
8           a solution, at least to the B6 to the B20.

9                   There is currently legislation. There  
10          was legislation a year ago that was proposed. It  
11          passed but was vetoed for various reasons. That  
12          legislation has been I guess updated or corrected  
13          and is now back in session and should be being  
14          debated.

15                   PRESIDING MEMBER BYRON: Thank you.

16                   MR. MORRISON: Any other questions?

17                   PRESIDING MEMBER BYRON: We did have an  
18          earlier speaker that suggested that government  
19          agencies should be talking to each other. I can  
20          assure you that the State Water Resource Control  
21          Board and the Energy Commission do talk. This is  
22          just not an issue that's come up.

23                   MR. MORRISON: Correct, correct. I  
24          guess the, you know, again the primary issue is  
25          when ASTM changed D975 last December to limit



1       biodiesel blends to five percent it sort of got  
2       everybody aware that there were some issues that  
3       had been not looked at.

4               The Water Board I guess feels that up to  
5       five percent, because you are now calling that  
6       D975 fuel and those tanks have been approved for  
7       975 fuel, that they are appropriate. But since  
8       they have not been approved for the biodiesel, the  
9       new standard fuel, again, they can't allow it to  
10      be sold until they have such certification.

11             PRESIDING MEMBER BYRON: Thank you.

12             MR. MORRISON: With that, thank you very  
13      much. Here is our information. If anybody has  
14      any questions concerning fuel quality, those of us  
15      in the petroleum laboratory are very happy to  
16      discuss them with anybody. Thank you again.

17             MR. SCHREMP: Thank you very much,  
18      Allan.

19             Now we have Chelsea Sexton and Bob  
20      Graham is now on deck.

21             MS. SEXTON: Thank you. I am Chelsea  
22      Sexton. I'm really just a girl that plays with  
23      cars. But I have been at it for a while now so I  
24      appreciate getting to come and talk to you about  
25      that particular experience.

1                   For several years I have been basically  
2                   an advocate on the nonprofit side, hence the  
3                   foundation designation. But I do have some  
4                   history with one of those nasty car companies so  
5                   we can talk about that too.

6                   PRESIDING MEMBER BYRON: And it's a  
7                   pleasure to see you, Ms. Sexton. It's been all  
8                   boys so far.

9                   (Laughter.)

10                  MS. SEXTON: You know, and I think  
11                  that's just wrong.

12                  (Laughter.)

13                  MS. SEXTON: So, you know, as we look  
14                  back on our experience with electric cars and with  
15                  electricity as an alternative fuel we kind of  
16                  benefit from a good amount of both breadth and  
17                  depth of experience. And I think it's always good  
18                  to remind folks of the variety of vehicles that we  
19                  have had in the past.

20                  It came to mind particularly when  
21                  someone called me out last week on Twitter, of all  
22                  places, that we need more large electric vehicles.  
23                  We can't have any more of those little bitty ones.  
24                  And if you sort of look at it and add them up, I  
25                  was reminded that we have actually deployed more

1 electric trucks and SUVs than any other class of  
2 vehicle in the full performance category. And  
3 that's a good perspective because we always think  
4 of the little bitty ones.

5           Unfortunately the down side of that is  
6 that every one of them used a different connector,  
7 just about. A couple of different standards, a  
8 bunch of different connectors. And I have to say,  
9 I thought that was really problematic until I  
10 heard these poor guys talk. And now I'm a little  
11 afraid we are going to have to list the generation  
12 mix on every charger or something. Maybe it  
13 wasn't so bad. But we did at least learn a lesson  
14 about needing to standardize and things are kind  
15 of going in that direction.

16           Still I think we are in the weeds on a  
17 number of questions. And we tend to focus a lot  
18 on, you know, what happens when we have millions  
19 of cars. Where will they go and how will people  
20 charge. As sort of one of the veterans, and we  
21 have others in the room, I think we also have to  
22 remember we do know some of this. We don't have  
23 all the answers but we do have some precedent to  
24 all upon.

25           So, you know, in terms of perspective.

1 One of the questions in the workshop thing was  
2 large scale deployment. And I know we are all  
3 really excited about 10,000 vehicles in 2010 maybe  
4 but I am not sure that is really large scale  
5 deployment just yet. And I think we have to keep  
6 in mind that while this feels really fast to those  
7 of us who have some sort of the dark years, it  
8 still is a fairly slow, overall process.

9 And in terms of geography we have some  
10 history there to. We know from DMV records,  
11 utility records, where these vehicles have gone.  
12 There is, you know, a precedent that can be drawn  
13 forward.

14 At the same time, unfortunately, so far  
15 the cars ain't coming to California. Several auto  
16 manufacturers have announced their initial market  
17 areas. The biggest market area of the last  
18 generation in terms of volume was Southern  
19 California and not a single auto maker has yet  
20 announced they are going to go there. The San  
21 Francisco Bay Area has gotten a little bit of lip  
22 service. GM's concept will do that. Otherwise  
23 not so much there either.

24 So, you know, it's exacerbated a little  
25 bit by CARB's travel provision allowing car

1 companies to get credit here for cars deployed  
2 elsewhere. But so far we are not seen as the  
3 leader anymore in this area. And I think part of  
4 it is everyone takes for granted California is  
5 going to do it. So if you are no longer really on  
6 the leading edge you are not seen at all.

7 At the same time I think we have become  
8 a little complacent, you know. LA just canceled  
9 one of its most popular incentives for electric  
10 cars. Oddly enough it was a really cheap one. It  
11 was free parking at meters. And yet the couple  
12 hundred cars down there can no longer get it. And  
13 that made quite a bit of news and it doesn't make  
14 us look terribly progressive.

15 I won't say too much about grid load  
16 because Bob is next and he's far more qualified on  
17 that front. But I think we know by now that we  
18 have excess capacity. Obviously getting people to  
19 charge at night is important. But it happens to  
20 be convenient anyway because they are sleeping.  
21 So we know that lifestyle dictates this is really  
22 not that tough for most folks. And certainly time  
23 of use meters, and even at the time basic pool  
24 timers, helped people program real easily not to  
25 start charging until nine or ten o'clock at night

1 or whenever the nighttime rates kicked in.

2 So yes, we want smart metering. Yes, we  
3 are going to head that direction. And by the time  
4 we get any big volume of cars we will have some of  
5 those things. But in the meantime we do have ways  
6 to ensure that people adopt the right habits.

7 When it comes to charging, particularly  
8 public charging, it's convenience based. So  
9 there's a question about, will the size of the  
10 battery pack affect the public charging. Will  
11 people want to charge multiple times a day if they  
12 have a low mileage car.

13 You know, history shows that when people  
14 are in front of a charger, happen to be, they'll  
15 plug in but they certainly don't want to go way  
16 out of their way to do it. And they are certainly  
17 not going to go miles out of their way for 110  
18 charging. You'll spend more miles getting there  
19 than what you will get back in an hour. So again,  
20 they'll use it if it's out there but I don't think  
21 we are going to see people that will forgo just  
22 using a little bit of gasoline for a really  
23 inconvenient charging experience.

24 And then there is sort of a -- there is  
25 some potential for policy. I think the picture is

1 kind of appropriate. Sort of the balance for  
2 enthusiasm but not necessarily outweighing the  
3 struggles involved.

4 And I'm from Los Angeles so I think that  
5 while we still think Martin Sheen is the best  
6 president we have ever said, but as much as we  
7 might be in our own little world, we have learned  
8 in the last 15 years or so that there is really a  
9 role of policy. But at this point it is no longer  
10 making sure these vehicles happen. Consumers are  
11 doing that, the market is demanding that. The  
12 sweet spot for policy is how many vehicles, it's  
13 improving the volume and it's speed of uptake.  
14 It's incentivizing them. Sort of paving the way  
15 and lowering the barriers but it's no longer about  
16 forcing auto makers to do this. Because that  
17 worked as well.

18 So in terms of infrastructure priorities  
19 we have sort of broken it up into categories.  
20 There's home refueling, which will be the vast  
21 majority of refueling in the early years. We will  
22 be production-limited enough in the first several  
23 years that early adopters are going to suck up  
24 these cars and most of them have garages.

25 We still do need to find an avenue for

1 multifamily apartments, condos, that kind of  
2 thing, as well as workplace and public charging.  
3 But I think we have possibly placed too much  
4 emphasis on public charging.

5 And we actually benefit from the fact  
6 that we have a fair bit of it out there. It seems  
7 like it's not really that much. But having been  
8 someone who tried this when we had no public  
9 chargers we are actually in a pretty decent spot.

10 So those are pretty much ranked in what  
11 I think are appropriate priority order. Not that  
12 they won't be addressed in parallel. But I think  
13 we have to keep in mind that the primary, best  
14 place to charge is still at home.

15 And we are moving towards standardized  
16 connectors and communication. It's not completely  
17 done, it's not unanimous, but at least we have  
18 gotten somewhere mainly on Level 2, we need to  
19 still figure out Level 3. Yes, there is a little  
20 tension between us and Europe and that kind of  
21 thing but at least it's a whole lot better than  
22 where we have come from.

23 The challenge we have faced over the  
24 last few years is trying to push infrastructure.  
25 And the challenge with consumers is that they can



1 plug into a wall now and get electricity so why  
2 would they support these infrastructure  
3 improvements when at the end of the day they'll  
4 plug into the wall and get electricity.

5 So one conclusion that we have drawn  
6 from putting cars on the road is that it is much  
7 better as sort of a gadget pull model, almost like  
8 telephony in the past. About 50 percent of  
9 private EV drivers have solar power now.

10 Generally the cars came first. And that therefore  
11 made them more aware of where their electricity is  
12 coming from and sort of pulled on the better  
13 infrastructure. And it works much easier that way  
14 than trying to push it the other direction.

15 The other thing that the cars really  
16 enable is conspicuous non-consumption. Even the  
17 utilities that have offered green power have had a  
18 little bit of a challenge getting the uptake.

19 Because unless you want to put a gaudy lawn sign  
20 in your front yard, your neighbors don't know that  
21 you are getting green power. So the cars become  
22 kind of a rolling billboard to advertise these --  
23 you know, I'm doing better and I want credit for  
24 it. There's a reason beyond MPG that the Prius  
25 sells better than the Civic Hybrid. It's because

1       it's distinctive.

2               And so I think that we need to work more  
3       on enabling the synergies between these things.  
4       There might be incentives that the cars only get  
5       if their power comes from renewable sources. I  
6       mean, there's various creative ways to go about  
7       layering those different things.

8               And then also there's prime opportunity  
9       thanks to quite a bit of stimulus funding and a  
10      lot of people that worked to make sure that  
11      infrastructure is an eligible category. So a  
12      statewide effort to draw some of that funding here  
13      to deal with both public charging, retrofitting  
14      new public charging, but also incentivizing  
15      workplace fleets, those sorts of things, would  
16      gain I think unanimous support from the utilities,  
17      the auto makers and several of the other  
18      stakeholders.

19              So when it comes to home charging I  
20      think there's a couple of things that need  
21      addressing. First is service providers.  
22      Historically all of the chargers for the most part  
23      have been installed by a couple of little,  
24      earnest, very dedicated but little companies. And  
25      going forward those couple of incumbents aren't

1       going to be able to support the volume that we are  
2       going to be trying to deploy. Even, you know, the  
3       pilot programs are starting to be a little bit in  
4       the weeds just because several hundred cars is  
5       more than anyone has tried to do for some time.

6               And we certainly don't want dealers  
7       doing it. One of the things that we learned the  
8       most and took the most rap for is folks being  
9       forced to do stuff that they don't want to do.  
10      Customers getting a bad experience because the  
11      person at the dealer wouldn't want to work on the  
12      car, wouldn't want to sell the car. They couldn't  
13      get a knowledgeable person at the utility level,  
14      et cetera. These things kind of snowball.

15             And so, you know, we have a couple of  
16      situations. We have a few utilities that would  
17      love to do home wiring, we have some that don't  
18      really want to. So I think we need to enable that  
19      possibility. Lower those barriers and allow those  
20      that want to do it to do it.

21             But then we also need a couple of sort  
22      of national service providers. There are already  
23      a few very large retail chains that are already  
24      are in the business of home wiring in different  
25      ways, electronics and things, that actually would

1 love to be a part of this.

2 So if we consider those two layers of  
3 some utility and some sort of national retailer to  
4 fill in the gaps and provide an alternative, then  
5 we have kind of a scalable model to go off of.

6 And then the other thing is process.  
7 When we started putting EVs on the road almost 13  
8 years ago now the average time from the moment  
9 someone decided they wanted one to when it landed  
10 in their garage was a month.

11 We got together to look at the Mini  
12 program. It's still a month. Just for the  
13 installation of the charger, the inspection, the  
14 permitting, all of those little things just for  
15 the infrastructure. So I have to believe that we  
16 could probably make that a little bit better. And  
17 that we have to if we are going to try to get this  
18 number of cars on the road. We kind of have to  
19 get ready to go fast.

20 And so that means standardizing and  
21 streamlining the process in general with city  
22 folks, with utilities, with electricians. And  
23 also quite a bit of education of all of these  
24 different folks. Because every time you pick up  
25 the phone and you get a service person on the

1 other end who is unfamiliar they have to go ask  
2 somebody and we end up with an extra week of just  
3 snowball delays.

4 And then for a public, and I sort of  
5 lump workplace in here as well. Level 2, 220  
6 charging, kind of the stuff we have had out there,  
7 remains the sweet spot. What we have found in  
8 talking and working with real consumers is that  
9 they care less about being able to charge in  
10 minutes and more just knowing it's out there if  
11 they need it.

12 We learned through experience to put the  
13 infrastructure in places where people would spend  
14 time anyway. So if you are at a mall for an hour  
15 it is transparent to you whether it takes five  
16 minutes or 60 to charge your vehicle. And most of  
17 them don't show up with a completely empty pack  
18 anyway so it is a little bit of a piecemeal. I  
19 plug in when I am in someplace but I don't have to  
20 start longer than I want to proposition.

21 Given the cars that are coming and the  
22 fact that some will be 3.3 and some will be 6.6  
23 kilowatt enabled we at least need to do those two.  
24 There are some that will be enabled well beyond  
25 that but we need to start there.

1                   And there is some, I would say somewhat  
2           limited but there is some potential for Level 1  
3           basic 120 volt outlets. Particularly at  
4           workplaces, places where folks will charge for a  
5           longer period of time. You know, the plug-in  
6           hybrids will benefit from it but they are less  
7           dependent on it. So I don't think we have to  
8           worry about putting it in every single, possible  
9           location but there is certainly some use for that.

10                  And then we need a transition plan for  
11           the existing infrastructure and the existing  
12           drivers. There are a few hundred RAVs and Rangers  
13           and S-10s and things out there still. They still  
14           use the infrastructure. They take great care of  
15           it on a volunteer basis. And so we do need to get  
16           their input and make sure we are keeping the  
17           locations that are key for them, while we can  
18           probably retrofit 80 percent of it or more and be  
19           perfectly fine. But we need to make sure no one  
20           gets left out.

21                  And then we have some interesting  
22           incumbent expectations on monetization. We are  
23           the only alternative fuel that has an incumbent  
24           expectation of free fuel. People don't expect to  
25           be charged when they go somewhere to plug in.

1           And this is somewhat born of interest in  
2   incentivizing but also the site owners. Most of  
3   them we found didn't want to charge. We did have  
4   card swipes and things in the '90s and the Ralph's  
5   market and the Costco didn't want to do that. It  
6   wasn't worth the transaction price and they would  
7   rather have the goodwill. And that remains true  
8   in large cases.

9           So we kind of accept that when there are  
10   millions of cars, or even fewer than that, people  
11   will want to start monetizing that. And there are  
12   certainly third parties that want to start doing  
13   that now. But we still expect that for the first  
14   several years, probably three to five years from  
15   now, charging will remain mostly free. And part  
16   of that is because infrastructure is seen as an  
17   incentive.

18           Going back to our experience of really  
19   cheap or free incentives being more effective than  
20   big financial ones, oddly enough. The things that  
21   incentivized folks the most were not the \$5,000  
22   from the AQMD unfortunately, it was HOV lane  
23   access, free parking at meters, free parking at  
24   LAX Airport, those sorts of things. So  
25   infrastructure, where it is located and how it is

1       used, becomes an incentive to market uptake.

2               And then public funding becomes a little  
3       bit stickier because there is a great push-back on  
4       the state funding infrastructure retrofits for a  
5       third party to then monetize. There's sort of  
6       this perception that we paid for it once, we are  
7       going to pay for the retrofit. Not so much on  
8       somebody else coming in and then charging us to  
9       use it. So that's certainly a little bit sticky.

10              I think we are going to have to accept  
11       that it is going to go to monetization. There is  
12       probably some sort of hybrid model where maybe we  
13       embargo the monetization of those sites for awhile  
14       and then sort of let it be open. But in the  
15       meantime we also expect that more vendors will get  
16       into the charging space.

17              We will build the boxes and make them  
18       available once the standard is firmly adopted. So  
19       there does need to be kind of an RFP process and a  
20       public goods test. Installing infrastructure that  
21       only serves one company we have already found  
22       doesn't necessarily move all of this forward. So  
23       it is important that whatever gets installed  
24       pretty much serves the common good, at least  
25       multiple technologies. And really any car ought



1 to be able to plug in in any charger, that's the  
2 ultimate goal.

3 And then lastly, a really overlooked  
4 thing but something we found to be really key is  
5 that all of these charger providers warranty their  
6 boxes for a few years. But none of them warranty  
7 them after that and none of them warranty  
8 vandalism. So we do need to figure out some fund  
9 or some way to take care of those chargers.

10 Right now the Electric Auto Association  
11 runs around and does all this infrastructure  
12 improvement but that's not really viable for them  
13 in the long-term either. So we do need to figure  
14 out some avenue for that so we don't end up with  
15 defunct chargers. Because it certainly doesn't  
16 serve the drivers. But worse, it doesn't serve  
17 the technology and the movement.

18 And then I think the often-overlooked  
19 thing is education. We kind of talk a lot about  
20 consumer education. But at the end of the day the  
21 bigger challenges are actually not going to be in  
22 what hardware gets put where, it is very much in  
23 this category.

24 So, you know, we have some instances of  
25 electric cars hitting kind of the pop culture

1 arena. We have Tesla Hot Wheels now and they are  
2 in video games. And we have the Volts going in  
3 the Transformers II moving. But I'm not sure  
4 that's quite enough. I think we need some backup  
5 there with some substance. I mean it is good  
6 though, they are sort of seen as cool and that's  
7 neat. And then public and private fleets as well.

8 We spent a lot of time in the '90s  
9 running around to cities teaching them how to  
10 spend the money that had to be set aside for these  
11 sorts of projects. Only because they didn't know  
12 what was available in terms of funding and  
13 vehicles. So all of that needs to be addressed as  
14 well. It's a huge amount of petroleum that can be  
15 reduced by these fleets replacing cars to the  
16 extent practical with plug-ins, but only if they  
17 know they can. And only if they don't think the  
18 only things out there is a little two-seater.

19 Communities, community education has  
20 already started a little bit. Companies like GM,  
21 organizations like Rocky Mountain, have deployed  
22 Project Get Ready type of blueprints, which have  
23 proven to be really helpful in our conversations.  
24 You can hand to a city or a state or a county and  
25 say, here is exactly what you need to do to be

1       ready when the cars come. Here is the  
2       infrastructure that would be helpful, here are the  
3       incentives. But we need to expand that and make  
4       it more available and just kind of get that word  
5       out.

6               I mentioned the city planners and the  
7       permitters and all those sorts of folks. They're  
8       shortening their processes but also making them  
9       more familiar.

10              The same thing with electricians. None  
11       of these chargers are terribly complicated. But I  
12       am already seeing folks like Tesla owners have  
13       challenges because their electrician wired their  
14       charger wrong. So even just some basic  
15       familiarity with the technology. You know, sort  
16       of state-sponsored workshops for electricians  
17       would be helpful. Then they get to select in.  
18       They are not forced to do it but those that want  
19       to do it and get good at it can.

20              And then of course schools. Because a  
21       lot of these kids either go home and teach their  
22       parents or they will be driving age when the cars  
23       come. It's kind of interesting how young the kids  
24       are that are gravitating towards this. So I put  
25       up a couple of Halloween costumes just for fun.

1                   But the little red one is a seven year  
2                   old boy who wrote last October and said, I want to  
3                   be an EV1 for Halloween. And, you know, do you  
4                   have any EV1 Hot Wheels. And I said, no, no, we  
5                   have Teslas and different things. He goes no, I  
6                   want to be a real EV1. So he sent me a picture of  
7                   his Halloween costume.

8                   So we have this upcoming generation of  
9                   kids that are starting to take it for granted that  
10                  their first car may not run on gasoline. And  
11                  that's really kind of cool but we have to foster  
12                  that and sort of keep them going with it.

13                 And one of the, one of the biggest pots  
14                 of energy for education on several of these fronts  
15                 are actually those early adopters. And I know we  
16                 tend to write them off a little but and they are  
17                 certainly passionate. I think auto makers can  
18                 attest to that. But they are a bunch of other  
19                 things as well.

20                 They are deeply tolerant of infant  
21                 problems. They are very protective. These are  
22                 people that would not let their EVs be towed  
23                 because they didn't want the public to see an  
24                 electric car on a tow truck. So they will invest  
25                 a huge amount of time and their own resources to

1 sort of be involved, to contribute. They go out  
2 and they make their own commercials.

3 They love to give feedback and they become  
4 perfect, instant ambassadors. Educators to other  
5 consumers. They love to go to schools, they love  
6 to be a part of these things. And they'll do it  
7 for free in many cases and that's really kind of a  
8 decent price, actually.

9 They are extremely organized. We know  
10 that from all the various campaigns and things.  
11 But on the good side as well, you know. We were  
12 trying to keep plug-in incentives in the stimulus  
13 package. They generated about 95,000 letters in  
14 about two and a half days.

15 The two biggest consumer-oriented groups  
16 are in California. You have the best built-in  
17 focus group and pot if experience of any state in  
18 the nation and I don't think we are using them  
19 enough.

20 And they are also good too for tempering  
21 virgin input. And also sort of quelling some of  
22 the anxieties that come along with new technology.

23 But we learned a lot. That what people  
24 thought they wanted before they got the cars and  
25 what they turned out to want were quite a bit

1 different. If you ask consumers before they get  
2 cars, I want a really long range, it has to be 300  
3 miles. The most popular we had on EV1 was lead  
4 acid. A hundred miles turned out to be just fine,  
5 especially if it meant a cheaper car. You'd never  
6 have thought it. But some of the lessons that we  
7 learned were actually rather counter-intuitive.

8 So to that end I would engage not only  
9 the drivers but round up some of the veterans that  
10 have kind of been a part of that process and sit  
11 them down for a day and pick their brains. I  
12 think we could learn a lot about some of the  
13 questions everyone is a little bit sort of amped  
14 up over.

15 That said, we don't know it all. We  
16 still do need more market assessment. But more  
17 than that we need to get people involved and to  
18 balance the enthusiasm with the frustration of  
19 vapor wear. People are getting really excited and  
20 that's fantastic. We are still a couple of years  
21 away from cars and that's frustrating for them.  
22 So, you know, just as Smart, Tesla and various  
23 other companies have engaged consumers and kept  
24 them there while waiting a year or more for cars,  
25 you can do the same thing on a more global level.

1           You know, there are multiple  
2       constituents that could benefit. It's sort of --  
3       There is no limit to the data you could get in  
4       terms of parsing down to the city block if we  
5       wanted to, exactly who wants these cars, exactly  
6       what form they want them to come in and how much  
7       they are willing to pay for it. So if we think  
8       that utilities, car companies and policy makers  
9       wouldn't love to have that data to answer the five  
10      questions we put up earlier.

11           You know, it's certainly public funding  
12      eligible and there are various companies and other  
13      private folks that would love to get involved in  
14      something like that. Whether it is the NGOs or  
15      folks like Google who specialize in information  
16      management. So it needs to be a coordinated  
17      effort, not necessarily each car company trying to  
18      go out and do their own. But in terms of one  
19      thing that could greatly impact all of this and  
20      pave the way, that one project would be a huge  
21      amount of it.

22           And then in case there was any doubt  
23      that there is public buy-in on this. For those  
24      that haven't seen it this is a picture of folks  
25      that stood outside Obama's train in Delaware

1 holding up those signs. Because they really want  
2 their closed Chrysler factory to be reopened to  
3 make electric cars. So this is not just  
4 California. But certainly we have led for years  
5 and I kind of want to see us do it again.

6 That's it. Questions?

7 VICE CHAIRMAN BOYD: Hi Chelsea, it's  
8 good to see you again. It's been a while.

9 MS. SEXTON: You too.

10 VICE CHAIRMAN BOYD: You certainly  
11 haven't lost the faith.

12 MS. SEXTON: No, I'm a little stubborn.  
13 It's the red hair.

14 VICE CHAIRMAN BOYD: They are showing  
15 your movie over at the State Library in a couple  
16 of days.

17 MS. SEXTON: Your movie too, my friend.

18 VICE CHAIRMAN BOYD: Your comment about  
19 cars are not coming to California but are going  
20 elsewhere struck me a little bit. I thought I was  
21 keeping up with all of this stuff. But I guess --  
22 I didn't think there were any cars to go anywhere  
23 yet, that was the problem. So what do you mean  
24 cars aren't coming to California in terms of  
25 demos? Who is demoing what? I guess I know



1 Nissan just very recently announced of having an  
2 electric car. Who else is there?

3 MS. SEXTON: Well it's true that there  
4 aren't cars physically going anywhere yet except  
5 for the few hundred Minis and some of those are  
6 going to LA. But in terms of auto makers that  
7 have announced where they are going to start in  
8 the next couple of years. GM did announce Bay  
9 Area and DC. Mitsubishi is Portland. Nissan is  
10 Portland and Tennessee and Tucson. So far  
11 actually Portland is getting quite a bit of  
12 attention. But the other areas that are being  
13 picked are not necessarily California.

14 I think they'll get here. It's an  
15 impossible market to ignore and there are  
16 certainly a lot of passionate people that want  
17 them. But so far I hear more about California  
18 doesn't want to lead. It's more of a Southern  
19 California problem than a Northern one. But  
20 nevertheless there is that perception among the  
21 auto makers I talk to.

22 VICE CHAIRMAN BOYD: Are these other  
23 locales really hustling these people?

24 MS. SEXTON: Some of them are, sure. I  
25 mean, Nissan is going to Tennessee because that's

1       where their corporate offices are.

2               VICE CHAIRMAN BOYD: That's right.

3               MS. SEXTON: Portland is hustling, you  
4       know. It varies a little bit by area.

5               VICE CHAIRMAN BOYD: The Investment  
6       Plan. I don't know how familiar you are with it.  
7       It was just posted last week and hopefully will be  
8       considered by our Commission next Wednesday, a  
9       propitious day, and approved. It's gives a pretty  
10      strong signal, I think, with regard to electric  
11      vehicle transportation. Do you think that will  
12      help? Do you think we have to -- Are you that  
13      familiar with it yet?

14              MS. SEXTON: Well some of these comments  
15      were given as feedback to that plan too. Of  
16      course I think it will help. I think part of it  
17      is telling the story better, it is not just doing  
18      the work behind the scenes. I think there are a  
19      lot of good things happening that we are so used  
20      to we don't talk about them as easily anymore. So  
21      certainly it's a matter of both, it's substance  
22      and it's story.

23              But it's also -- I think we ought to be  
24      a bit indignant, frankly, that these car companies  
25      are not coming here given the history and given

1 the resources devoted to that technology over the  
2 years. At the same time they are a little bitter  
3 themselves so.

4 VICE CHAIRMAN BOYD: Well I can  
5 understand GM not coming here.

6 MS. SEXTON: And yet they are the one  
7 auto maker that will so far. Yeah, I think I have  
8 to move just to buy an electric car.

9 VICE CHAIRMAN BOYD: Well maybe we can  
10 address that. Who would have ever thought GM  
11 would introduce the Volt after what they did to  
12 the Pioneer car.

13 MS. SEXTON: You know, I wouldn't have  
14 thought but miracles happen.

15 VICE CHAIRMAN BOYD: And I'm impressed  
16 that a child would even know what an EV1 is.

17 (Laughter.)

18 MS. SEXTON: Me too. And it wasn't my  
19 child.

20 (Laughter.)

21 VICE CHAIRMAN BOYD: Anyway, thank you.

22 MS. SEXTON: Thank you.

23 PRESIDING MEMBER BYRON: One quick  
24 question, Ms. Sexton.

25 MS. SEXTON: Sure.

1                   PRESIDING MEMBER BYRON: What is  
2 Lightning Rod Foundation? I am not familiar with  
3 it.

4                   MS. SEXTON: It is a very tiny nonprofit  
5 that I founded about a year and a half ago to do  
6 exactly this kind of work.

7                   PRESIDING MEMBER BYRON: All right.  
8 Thank you for being here.

9                   MS. SEXTON: Thanks.

10                  MR. SCHREMP: Thanks a lot, Chelsea.

11                  All right. Bob Graham next from  
12 Southern California Edison.

13                  MR. GRAHAM: Commissioners, thank you  
14 for allowing me to present.

15                  I've traveled millions of miles talking  
16 about plug-in hybrid vehicles, as some of you  
17 probably know. I have never had the privilege of  
18 following a movie star before and now I know why.  
19 I have been very fortunate. The theme I am going  
20 to talk about you will see is very similar to the  
21 theme I think that Chelsea put forth. And I will,  
22 I'd like to spend some time talking about what we  
23 are doing to try to get ready.

24                  Southern California Edison, which I am  
25 actually a new employee of, I have been there for

1 approximately four months. I spent the ten years  
2 before that at the Electric Power Research  
3 Institute and had met with many of you to talk  
4 about plug-in hybrid vehicles back when you didn't  
5 want to hear me even talk about them at any given  
6 time.

7 So what I am going to talk a little bit  
8 about. Southern California Edison is actually  
9 trying to do what Chelsea is suggesting we do.  
10 For the past six months Southern California Edison  
11 has been looking very aggressively at  
12 mainstreaming electric transportation into our  
13 grid.

14 We have set a high and low medium for  
15 market penetration starting in 2005 and getting to  
16 2020. We expect a low end market penetration in  
17 Southern California Edison's territory of 400,000  
18 vehicles by 2020 and a high end of somewhere  
19 around 1.6 million plugging into the grid by 2020.

20 There's probably 400,000 cars in  
21 Sacramento at the moment. So that would mean that  
22 every single car in this city would be plugging  
23 into the grid. Where Chelsea and I differ  
24 slightly is while I agree with her home charging,  
25 commercial charging, I don't agree with her

1 completely with public charging. Because I  
2 believe that everybody deserves to be plugging in  
3 when they go home at night, whether they are in a  
4 house with a garage or whether they park on the  
5 street. So the question is, how do we manage to  
6 make sure that everybody has equal charging and  
7 has equal access to electricity and its benefits.

8 So I am going to go through this and  
9 review some of the key issues. Again confirming  
10 what Chelsea said, I'm going to throw this up real  
11 fast. These are the production programs that have  
12 come out talking about electric vehicles.

13 The message from this slide is very,  
14 very simple. It is our opinion, and it is the  
15 opinion of our senior management, that electric  
16 transportation is here. And we need to be ready  
17 to move on it. We need to be ready to support the  
18 customers. We need to be ready to make sure  
19 there's no harm to our ratepayers. And we need to  
20 make sure we return value as much as possible to  
21 the community. So that's where our focus is.

22 So what are our primary objectives with  
23 our mainstream and initiative. We are focusing on  
24 customer satisfaction as we transition to  
25 electricity as a transportation fuel. A little

1 bit of what Chelsea was talking about. What is  
2 customer satisfaction? I do not want the  
3 customers to call me up and call that utility and  
4 listen to Chelsea talk about the process not  
5 working. And I want to be able to do that for  
6 millions of customers. And I want to be able to  
7 respond to them as fast as necessary.

8 I want to maximize the differential  
9 between the cost of electricity and the cost of  
10 fossil fuel to create the largest justifiable  
11 incentive for customers. And I'll talk about this  
12 in a little bit more detail in a minute.

13 But at the end of the day I want to make  
14 sure that electricity costs are as low as  
15 possible. Whether or not they are quite free only  
16 time will tell. But I want to make sure they are  
17 as low as possible. And the differential between  
18 the cost of the electricity and the cost of fossil  
19 fuel is the maximum we can be. Because we want to  
20 tell citizens there is a good reason to electrify  
21 so let's go make it happen.

22 I want to minimize the impact to all of  
23 the customers. We can't afford to put the onus of  
24 electrification on the shoulders of all the  
25 ratepayers. Not every ratepayer is going to be a

1 car owner. Not every ratepayer is going to have  
2 cars, especially electric cars, in the initial  
3 years. We need to make sure that whatever we do  
4 does not, we do not harm that existing rate payer.  
5 We don't --

6 And the best example of that, going back  
7 to a chart that I do not have and I probably  
8 should have after hearing the presentations this  
9 morning. But if you plus 1.6 million cars into  
10 the grid in 2020 and if you don't manage that  
11 load. Remember this is all brand new load. If  
12 you don't take that load and put it where it  
13 belongs at nighttime where we have plenty of  
14 electricity, or if you allow that load to only  
15 come on at peak periods, it's a significant  
16 increase of load during peak periods. That's a  
17 potential significant negative to all of our  
18 ratepayers. So the key issue is how to  
19 incentivize the customer to be able to be willing  
20 to charge at appropriate times, either through  
21 rate incentives or cost incentives or other  
22 issues.

23 Finally we want to maximize the carbon  
24 reduction potential by electrifying on- and off-  
25 road transportation. While we tend to talk about



1 plug-in hybrid vehicles and cars, I think that is  
2 the major driver, but we at Southern California  
3 Edison focus a great deal of attention on non-road  
4 electrification. So when we talk about the Port  
5 of Long Beach electrifying their rail system.  
6 When we talk about truck stop electrifications.  
7 We haven't forgotten about electrifying forklifts.  
8 All those are important.

9 And why are they critical from a carbon  
10 reduction perspective? Because we know how to  
11 electrify off-road transportation, we just need to  
12 go do it. And the faster we do that the faster we  
13 reduce carbon.

14 And finally we will talk a little bit  
15 about some of the research and development  
16 priorities that I think are important.

17 So customer satisfaction. Again  
18 following Chelsea was fun. Customer education is  
19 extremely important. It is extremely important so  
20 they understand the value, to understand the fact  
21 that the vehicle is going to cost more. That  
22 there is a value for that. The same reason you  
23 buy automatic transmissions and you buy electric  
24 drive brake systems or electric brake systems and  
25 intermittent windshield wipers. You spend more

1 money but you have accepted a value. You are  
2 willing to pay that value and you justify that  
3 with the customer.

4 Metering to support time of use rates  
5 and carbon credit capture. Unfortunately we are  
6 going to be responsible for tracking carbon  
7 credits. For every mile driven there will be a  
8 carbon credit. We will have to track that carbon  
9 credit. Key to that is making sure when we do  
10 have carbon credits that that carbon credit is  
11 passed back down to the customer. It should not  
12 be held at the utility, it should not be held at a  
13 private enterprise. It should be passed back down  
14 to the consumer so the consumer can help keep the  
15 costs as low as possible.

16 We need to look carefully at time of use  
17 rates. It is very, very important that we signify  
18 to the consumer that plugging in at peak periods  
19 in the afternoon is not a good thing and if you do  
20 that it's going to cost you a lot of money. And  
21 what you need to do is plug in at nighttime. But  
22 we need to make sure that we have appropriate  
23 metering in place so that we can inform and teach  
24 the individuals and the consumers why you should  
25 charge and make it simple for them to do that.

1           So we are, in fact, spending millions of  
2   dollars to develop smart meters. We are beginning  
3   to look carefully at putting chips into those  
4   smart meters so the smart meter not only manages  
5   the home efficiently, it also can manage the car  
6   efficiently and do that separately from the home.

7           Carbon credits to be passed to the  
8   customer, I just mentioned that.

9           Internal utility processes to be able to  
10  proactively serve all customers. Again, it is a  
11  tremendous effort to be able to respond to  
12  millions of customers pretty much almost all at  
13  the same time requesting information on what kind  
14  of metering do they need, what's the cost going to  
15  be for the infrastructure to plug in. What steps  
16  do we need to take. So everything Chelsea said  
17  about worrying about the response to customers, we  
18  need to be very proactive to be prepared to  
19  support those customers.

20          Maximize the cost differential. We need  
21  to ensure an incentive for the consumer by  
22  maximizing the cost differential between the  
23  electricity and fossil fuel. I'm kind of  
24  repeating that because I think it is an extremely  
25  important point that we all need to stay focused

1       on as an incentive to move toward electric  
2       transportation.

3               While serving all customers, minimize  
4       the cost by having common standards and  
5       infrastructure across the state. I am the  
6       strongest proponent that you will have standing  
7       before that believes that everybody has to have  
8       access to plugging in, at all times when they need  
9       it and when they require it.

10              Therefore we need to have common  
11       standards, common plugs, common infrastructure.  
12       The state needs to have an infrastructure that  
13       looks across the entire state and says, what are  
14       our needs going to be in 2010, in 2015, in 2020.  
15       And even more interesting, in 2030 when the volume  
16       really increases. What are we going to have to  
17       have across the state to make sure that we have  
18       access to all customers.

19              VICE CHAIRMAN BOYD: You said common  
20       plugs and Chelsea referenced the chaos of the  
21       past. And I thought we were going towards the  
22       common plug but it was very recently when I was  
23       introduced to the five-pin plug versus seven-pin  
24       plug debate that is going on. Do you see light at  
25       the end of that tunnel? I haven't been able to

1 discuss this with anybody since this occurred?

2 MR. GRAHAM: Yes, there is -- the SAE  
3 working with EPRI. There is an infrastructure  
4 working council group that includes the auto  
5 industry. It includes Ford, General Motors,  
6 Chrysler and all the utilities. They are in fact  
7 working on an SAE standard.

8 I heard the same thing, I think it was  
9 Chrysler or Mercedes came in from Europe and  
10 introduced a different seven-pin plug. The  
11 approach is that the recommendation is that five-  
12 pin plug. But at the end of the day I am pretty  
13 comfortable there will be a common plug across.

14 The key is going to be, Commissioner, is  
15 can you have a charge station that can handle both  
16 120 and 240. So whether you have a Volt requiring  
17 240 or a whatever requiring 120, that when you  
18 come to a plug outlet you can plug into that same,  
19 that same system.

20 All the chargers, the difference this  
21 time versus in the '90s, the chargers will be on  
22 board all the vehicles. The chargers will be  
23 smart chargers. So when the charger -- vehicle  
24 plugs into the charge port versus a charger, and  
25 then it plugs into that port, the charger will

1 recognize whether it's 120 or whether it's 240 and  
2 manage the charge accordingly. So I do think that  
3 we will have the standards that we are looking  
4 for. There's a lot of people working, spending a  
5 lot of hours doing that at the minute.

6 Okay, support research and development.  
7 We strongly urge the Commission to continue  
8 looking, and you are, at stationary and secondary  
9 use of automotive advanced batteries. We consider  
10 that to be a major priority, including our efforts  
11 on mainstreaming electric transportation into our  
12 entire grid.

13 We have a similar, equal project on the  
14 energy storage. And we are basically looking at  
15 what are our needs for energy storage across the  
16 system, which range from multi-megawatt energy  
17 storage systems for wind and solar farms down to  
18 home energy storage systems.

19 And we are trying to ask the question,  
20 will the automotive battery that is currently  
21 going into vehicles fit in those applications.  
22 And the reason for that is if we can use those  
23 batteries we can drive the cost down. And if we  
24 can drive the cost down by using energy storage  
25 then the cost for the batteries going into

1 vehicles will come down, which means the costs to  
2 our ratepayers and the consumers will come down.  
3 So energy storage is a major effort.

4 For those of you unfamiliar with the  
5 term secondary use. The idea is that we know that  
6 when a battery comes out of a vehicle it may not  
7 have enough power to operate an electric vehicle  
8 but it has enough energy, roughly 80 percent.  
9 That energy could be applied in an energy storage  
10 application. It could still store wind and solar.  
11 Still be a home energy storage battery system. So  
12 maybe we can now have a secondary use for those  
13 batteries and therefore drive the costs further  
14 down.

15 We need to continue carefully reviewing  
16 the impact on the existing infrastructure. What  
17 we are beginning to want to understand is exactly  
18 what the market penetration rate is going to be  
19 between 2010 and 2015. What's the mix of BEVs  
20 versus plug-in hybrid electric vehicles? Does the  
21 existing infrastructure support that? Do we need  
22 to add additional infrastructure? In fact I was  
23 at a meeting here today talking about what needs  
24 to be done to develop a road map for  
25 infrastructure across the entire state.

1           Develop protocols and standards, I have  
2       talked about that.

3           Initiate an analysis of the potential to  
4       use energy storage on and off board the vehicle to  
5       support ancillary services. There's lots of talk  
6       about onboard energy storage systems and how those  
7       systems might be able to apply as an energy  
8       storage to support the grid. The bottom line is  
9       when there's millions of cars plugging in at  
10      various locations around the community, it's  
11      obvious that that energy storage probably has  
12      value. The question is, how can we manage that  
13      value to maximize it for all rate payers? And so  
14      we are, we are spending time and effort to take a  
15      look at that and we urge the CEC to do that as  
16      well.

17           And then finally to support development  
18      of vehicles to smart grid connectivity. There's  
19      lots of discussions about smart grid. What really  
20      is a smart grid, what's it really mean. The  
21      bottom line is there is a connection between the  
22      two. When you are managing your home efficiently  
23      and you are managing your car efficiently,  
24      therefore you are managing all the energy systems  
25      efficiently. You can help all of us to keep from



1       having to build power plants, transmission lines  
2       and that type of things. So we are looking very  
3       aggressively at smart grid technology and the  
4       connection between that smart grid and a smart  
5       vehicle.

6               And I think that's it so I'm available  
7       for any questions.

8               VICE CHAIRMAN BOYD: On that last point.  
9       I haven't touched base with our research group for  
10      awhile. As we still on Phase 1 is vehicle to  
11      home, Phase 2 is vehicle to grid, as the  
12      progression of this technology?

13              MR. GRAHAM: That's the approach we're  
14      taking. Vehicle to home first and then vehicle to  
15      grid. But I would say they are probably more in  
16      parallel now than they used to be. I think the  
17      only, the newest interest is the focus on energy  
18      storage, on the automotive batteries as an  
19      independent energy storage device. Proving that  
20      first. Developing a communication protocol with  
21      an energy storage device that we know where it is  
22      going to be at any given time. And then use that  
23      knowledge to be able to take that into using the  
24      vehicle for energy storage.

25              But it's a hot topic. The FERC Chairman

1 supports it. We support it as a research project  
2 and it is being looked at carefully.

3 VICE CHAIRMAN BOYD: Thanks.

4 MR. GRAHAM: Okay, thank you very much.

5 PRESIDING MEMBER BYRON: Thank you,  
6 Mr. Graham.

7 MR. SCHREMP: Thanks, Bob.

8 Mike Eaves next and Michael Coates is on  
9 deck.

10 MR. EAVES: Good afternoon,  
11 Commissioners. My name is Mike Eaves, I'm with  
12 Clean Energy in Seal Beach. I'm delighted to have  
13 this opportunity to bring you up to speed on some  
14 of the details about natural gas vehicle  
15 infrastructure development and deployment that we  
16 are involved in.

17 I'd be remiss if I didn't acknowledge  
18 the leadership over many, many, many years going  
19 back to the AB 2076 issues of the early 2000s all  
20 the way up to, all the way up to getting your  
21 hands on some of the real details of the  
22 activities that we need to move forward.

23 Clean Energy is the largest alternative  
24 transporter, fuel provider for natural gas. Our  
25 business is to cost-effectively provide fuel,

1 offering value to customers in the form of lower  
2 fuel prices and reliable service.

3 We sell CNG, compressed natural gas, and  
4 LNG. And that includes in our portfolio  
5 biomethane blends of the same. So we have got 320  
6 fleet customers that we provide fuel to, 15,000  
7 vehicles on a daily basis. And we have 175  
8 stations nationwide. The LNG is the fastest  
9 growing segment of our business.

10 And if you look at the numbers on the  
11 vehicles in the stations you are going to note the  
12 very low number of vehicles per station. That's  
13 because our emphasis is really on high fuel use  
14 fleets. When we talk about high fuel use fleets  
15 we are talking about anywhere from 7500 gallons a  
16 year for a two-shift taxi operation to 20,000 plus  
17 gallons a year per vehicle for a Class 8 truck.

18 Clean Energy has a, has a minimum  
19 threshold that we look at for investment of our  
20 capital and that's about 300,000 gallons per year  
21 per station that we would, that we use as a  
22 benchmark to look at us providing our own capital  
23 to build that.

24 The fleets that we have refuel at  
25 central locations, are return to base fleets. But

1       it is not mandatory to have a residence fleet. We  
2       fuel at LAX and fuel taxis, police vehicles,  
3       refuse trucks, transit buses and the like. So  
4       there's no resident fleet right there at that  
5       station.

6               The customers are focused on fuel cost  
7       savings. And regardless of the price of oil,  
8       whether it's going up or down, natural gas is  
9       always a lower cost option than petroleum fuels.  
10      Back in July of 2008 heavy duty truckers were  
11      saving close to about \$2 a gallon on fuel.

12             One of the things that we do in our  
13      infrastructure development is we include public  
14      access to accommodate collateral fleets and expand  
15      throughput.

16             We have a modular station design. It's  
17      prefab, pre-engineered, plug and play. Drop in,  
18      add electricity, add gas and dispensers and be  
19      able to fuel vehicles.

20             And we are looking at ways to  
21      comprehensively expand our network in various  
22      regions of the country.

23             These are the kinds of CNG stations we  
24      have. If you start at the upper left that's a one  
25      dispenser, two hose station. It might cost in the

1 order of \$800,000 to a little over \$1 million. We  
2 have in the center left LAX, which has six  
3 dispensers. You have on the lower left our  
4 station in Peru that opened last year. That was  
5 the largest CNG station in the world. It had 32  
6 hoses on there. It was recently displaced by a 34  
7 and a 36 hose station in Southeast Asia this  
8 January.

9 But one of the things that people are  
10 confused about are some of the economics of what  
11 we are doing. CNG stations are not just stations,  
12 they are not just dispensers. They are actually  
13 mini refineries that take natural gas from a  
14 pipeline and pump it up to pressure to be able to  
15 use that in a vehicle. So our capital costs on  
16 these stations that you see here, anywhere from  
17 \$1.5 million to \$2.8 million. But our dispensing  
18 capacity is about 6,000 to 12,000 gallons a day.

19 And if you go back. I was at a biofuels  
20 conference a couple of months ago and they used a  
21 metric that I wasn't really familiar with before.  
22 And that was, capital costs per barrel per day.  
23 And they talked about a lot of the biofuel  
24 refineries being at \$50,000 to \$60,000 per barrel  
25 per day, petroleum being about \$20,000 per barrel

1 per day.

2 If you take the capacity of these  
3 stations that you are looking at and look at the  
4 capital costs, these are about \$8,000 to \$10,000  
5 per barrel per day.

6 So in terms of, we are not just a, we  
7 are not just a dispenser in a station and  
8 everything, we are a mini refinery. And it takes  
9 that to bring a product to the market. But we can  
10 still spend that investment and still offer the  
11 customer lower prices.

12 The other thing is, I talked about the  
13 300,000 gallon per year threshold for spending our  
14 capital. That is, if we have more than 300,000 it  
15 is worthwhile for us to do it. We make our return  
16 on our investment. We can operate it and still  
17 offer fuel to the customer at a discount.

18 But that same station, that -- generally  
19 what we use is a 1,000 standard cubic feet a  
20 minute compressor. But that is able to generate  
21 2.2 million gallons a year of fuel. So if we can,  
22 if we can break even on 300,000 gallons a year,  
23 2.2 million is dynamite. And if you look at the  
24 LAX station. Right now that is pumping about  
25 6,000 gallons a day and offering a great value to

1 everybody.

2 A couple of questions. One other thing  
3 I wanted to mention here. Is we have offered to  
4 OEMs to get back in the NGV business. We have  
5 offered them that we would build stations. For  
6 every 600 vehicles that were sold into a region  
7 that we would one station. That comes out to that  
8 300,000 gallon minimum throughput.

9 A question we are always asked is, can  
10 you build stations for less than \$1.5 million?  
11 And the answer is yes. We are designing smaller  
12 compressor dispenser modules down to 48 gallons,  
13 48 gallons an hour. But the economics of those  
14 get to be very dicey.

15 But generally what we see is customers  
16 can go in and build their own stations, there's no  
17 magic about that. The equipment is out there.  
18 But when they build a station they build much  
19 lower capacity, no frills. They don't have public  
20 access. They don't have a fast fill dispenser.  
21 They might have -- they have slow fill, time fill  
22 at night. And any excess capacity that they have  
23 is unusable because you don't have public access.  
24 So we certainly encourage public policies that  
25 offer infrastructure incentives for anybody that

1 makes public access available.

2 And the other question, kind of a  
3 corollary question of the first one, is it  
4 possible to build smaller stations where the  
5 investment can't be recovered economically through  
6 gas sales? And the answer is yes. If you look at  
7 the home refueling appliance, that costs about  
8 \$6,000 totally installed cost. A vehicle uses  
9 about 540 gallons of fuel a year. If you amortize  
10 that over ten years you would be paying \$1 per  
11 gallon capital recovery cost on that, even though  
12 you might be from the gas price, you might be  
13 filling it up for \$1.25 or \$1.50 a gallon.

14 So the fact is a lot of private stations  
15 that are in California are not, probably not  
16 economically viable. What we are looking at in  
17 our stations are things that are economically  
18 viable.

19 We also produce and dispense LNG. This  
20 is our Boron facility. It will have a capacity of  
21 240,000 gallons a day. In the metrics of  
22 refineries that's about \$26,000 diesel equivalent  
23 gallon barrel per day.

24 Stations cost anywhere from \$1.5 million  
25 to \$7.5 million.



1           We are building -- what you see at the  
2       bottom left is our newest station in the Port of  
3       Los Angeles. That will be operational in May.  
4       That will have a dispensing capability of about  
5       80,000 gallons of LNG per day, or about 50,000  
6       gallons a day of diesel equivalent.

7           So these stations have very, very high  
8       dispensing capability. In the order of 4 to 20  
9       million gallon, diesel equivalent gallons per  
10      year.

11          There is a four-legged for NGV industry  
12      success. Everyone wants to look at funding,  
13      vehicles and infrastructure but really policy is  
14      where it all starts.

15          California has had more success than  
16      probably anybody else in coming up with successful  
17      policies to encourage alternative fuels. There  
18      have been South Coast Fleet Rules, CARB Fleet  
19      Rules. There have been local airport taxi  
20      initiatives around airports. And you have the  
21      Low-Carbon Fuel Standard that is going to be a  
22      very notable piece of regulation.

23          But we have a lot of failings. EPACT,  
24      and I'm talking about EPACT of '92, the government  
25      set standards that they never relied on and

1 pushed.

2 But we have the NAT GAS Act of 2009. I  
3 wish we could say that that was the Natural Gas  
4 Act of 2009. But that's the New Alternative  
5 Transportation to Give Americans Solutions. That  
6 is a very, very comprehensive bill under the Obama  
7 administration that will incent alternative fuels  
8 and a variety of alternative fuels.

9 Policy is important because -- and here  
10 is an example of what's happening around the  
11 world. These are everywhere but the United  
12 States. Close to 10 million vehicles, 14,000  
13 stations. So when you look at a number of  
14 vehicles and you say, well we need, California has  
15 got 10,000 gasoline retail outlets, you know. We  
16 need 10,000 gasoline retail outlets. Here's  
17 14,000 stations servicing 10 million vehicles  
18 worldwide.

19 The other thing that is remarkable about  
20 this is the population of vehicles has gone up 1.3  
21 million in the last eight months. So world growth  
22 is really tremendous.

23 These are some of the notable examples  
24 of where that growth is. You have -- halfway down  
25 you see Iran there going from nothing to 1.2

1 million vehicles and 700 stations and everything.  
2 And you look at policy. Policy is very simple.  
3 Save the oil for the Americans and use our natural  
4 gas for ourselves.

5 So worldwide, 76 percent of all the new  
6 stations are going with public access.

7 And most of the vehicles are all  
8 consumer oriented vehicles, not heavy-duty  
9 vehicles. Where in California and the US it's  
10 mostly heavy-duty with a light spattering of  
11 light-duty vehicles.

12 And here's the products. I was  
13 interested in the, in the electric vehicle  
14 proposed vehicles. These are natural gas  
15 vehicles. Every major automobile manufacturer in  
16 the world has a natural gas vehicle. General  
17 Motors manufactures 18 models of natural gas  
18 vehicles worldwide but none in the US.

19 So as we look forward we look at light-  
20 duty vehicles. We want OEM development. We have  
21 been talking to them about focusing on targeted  
22 regional market development, not trying to go with  
23 a national deployment strategy. Look at large  
24 metropolitan areas.

25 Examples of an OEM program. I think you

1       probably have seen the announcement several weeks  
2       ago that AT&T is going to buy 8,000 natural gas  
3       vehicles for their fleet. That is because of some  
4       involvement that we have had in working with Ford  
5       to activate their qualified vehicle modifier  
6       program to have Ford support natural gas from  
7       their role as an OEM, but allow access to their  
8       information. And people like BAF Technologies,  
9       which is a small volume manufacturer, could  
10      manufacture those 8,000 vehicles for AT&T.

11               We have also had companies like Mercedes  
12      that have requested meetings with the Energy  
13      Commission and CARB because they have a vision of  
14      bringing their B-series product to California.  
15      Not to the US but to California as a natural gas  
16      vehicle. And they would like to talk about ways  
17      that the Energy Commission and CARB can help  
18      support that.

19               On heavy-duty vehicles we have got a  
20      long list of truck manufacturers that are offering  
21      product. And we are really centering market  
22      development around the goods movement around the  
23      ports in California but also in the refuse,  
24      transit and airport markets.

25               And we also are talking with all the

1 major trucking companies in the United States to  
2 expand LNG into the long-haul trucking market.

3 And so our model really is to  
4 simultaneously develop profitable infrastructure  
5 and market deployment of vehicles.

6 This is a story we talk to the OEMs  
7 about. There are 94 stations, CNG stations in the  
8 greater Los Angeles area. In addition there's  
9 over 200 private stations. So California is a  
10 good market to introduce product.

11 This is hopefully where we get some  
12 OEMs, offshore OEMs and everything, to bring new  
13 products that they are offering into California.

14 And it should be noted and we told the  
15 OEMs that this infrastructure in California can  
16 already support several hundred thousand OEM  
17 products today. It isn't like we have to start  
18 building stations and then five years down the  
19 road that they can bring things in and we can  
20 start marketing them. We can sell, we can sell  
21 vehicles today.

22 This is a slide showing the goods  
23 movement in and out of the ports of California.  
24 And this is where we are starting our regional  
25 trucking. The first thing was get from the ports

1 to the, to the terminal centers, and then from the  
2 terminal centers to branch out across the US in  
3 some very well-defined paths that the trucking  
4 industry uses.

5 And nationwide, this is kind of a  
6 remarkable statistic. There are about 9,600 truck  
7 stops nationally. And we figure, and with  
8 trucking companies we figured that we can address  
9 probably address 80 percent of the needs by about  
10 1,250 LNG stops, truck stops across the country.

11 So anyway, we're starting with a  
12 regional goods movement and then expanding that.  
13 Then north-south, east-west corridors.

14 So I think that's probably my time. I  
15 appreciate it. There's additional material in the  
16 back of my presentation on our McCommas Bluff  
17 landfill in Texas and what that does to offering  
18 lower greenhouse gas blends, again CNG and LNG.

19 I'd be glad to answer any questions.

20 PRESIDING MEMBER BYRON: Mr. Eaves, I'll  
21 be brief with my questions. All of these  
22 presentations are just so rich. There's just so  
23 much information here.

24 I was on a panel with T. Boone Pickens a  
25 couple of weeks ago. And of course he claims to

1 have spent about \$58 million of his own money  
2 concurrent with the presidential campaign.

3 MR. EAVES: A little more than that.

4 PRESIDING MEMBER BYRON: Well it may not  
5 have all been his money then. But I note where  
6 you say truck OEMs are now engaged, major trucking  
7 fleets are investigating LNG. I mean, this is  
8 where he was, he was pushing was in the large,  
9 goods moving area.

10 MR. EAVES: That's correct.

11 PRESIDING MEMBER BYRON: Maybe that  
12 money prompted them. Maybe this is a T. Boone  
13 Pickens effect here we're seeing.

14 MR. EAVES: Well I think -- if we go  
15 back to last year we had every, we had every  
16 trucking company, major trucking company in the  
17 United States was contacting us about LNG for  
18 trucking.

19 PRESIDING MEMBER BYRON: Right.

20 MR. EAVES: With the high fuel prices.  
21 And that interest in LNG has not waned one bit.  
22 Mainly because they all know, they all know we are  
23 in an economic recession right now. But as soon  
24 as the world economy picks up again we are going  
25 to be right back in the same place. So there's a

1 little bit of a breather but there is still a  
2 great sense of urgency on their part.

3 PRESIDING MEMBER BYRON: I think  
4 Mr. Pickens, however, would be surprised to learn  
5 that concurrent with his efforts the real growth  
6 has been in the same international countries, the  
7 same countries that he is trying to move us away  
8 from on dependence on foreign oil. Your comment,  
9 save the oil for the Americans and use LNG for  
10 ourselves.

11 MR. EAVES: That's correct.

12 PRESIDING MEMBER BYRON: Very good.  
13 Thank you.

14 MR. EAVES: Thank you.

15 MR. SCHREMP: Thanks a lot, Michael.  
16 And we have Michael Coates next from Mightycomm  
17 with John Mough from DMS on deck.

18 MR. COATES: Thank you, Gordon. And  
19 thank you Commissioners for this opportunity to  
20 speak. I'm Michael Coates with Mightycomm  
21 representing one of our clients, Daimler AG, the  
22 producer of Mercedes Benz vehicles among others.

23 Let me give a little, a little  
24 background on Daimler's technology. They like to  
25 approach things from a portfolio standpoint. This



1 is their Technology Portfolio for Sustainable  
2 Mobility.

3 Daimler recognizes California's goals of  
4 greenhouse gas and petroleum reduction expressed  
5 in all the bills over the past several years.

6 To that end they are optimizing their  
7 current vehicles, downsizing, adding hybridization  
8 and moving to zero emission vehicles, which come  
9 in the form of battery and fuel cell vehicles.

10 Daimler also believes that we will see a  
11 portfolio of technologies that are needed to meet  
12 the different driving needs of the public through  
13 a consumer-focused sort of approach, it's not just  
14 technology focused.

15 Here's an example of some of the  
16 vehicles that Daimler has out there right now.  
17 There's a fleet of electric Smart vehicles that  
18 have been deployed. And the B-Class fuel cell,  
19 which is the next generation fuel cell vehicle.

20 However, there are some serious  
21 challenges that remain for these technologies.

22 Both battery electric vehicles and fuel  
23 cell technologies offer greenhouse gas reduction,  
24 efficient operation and freedom from petroleum.

25 But the infrastructure for both

1 technologies is lacking.

2 The cost for battery technology needs to  
3 be reduced.

4 We are also faced, as was mentioned  
5 earlier, with two different electric vehicle  
6 charging systems that the industry is looking at  
7 right now, one in Europe and one in the US.  
8 There's a lot of concerns with that dual system  
9 for commercialization.

10 The volume that is needed to drive the  
11 fuel cell vehicle costs down, which the volume  
12 production is needed to drive the fuel cell  
13 vehicle costs down. But Daimler believes that  
14 they can be brought down to a parity with the  
15 current hybrid and diesel technology.

16 Both technologies, both batteries and  
17 fuel cells, need to prove their worth in the real  
18 world with real consumers. And that's a critical,  
19 it's a critical phase that we are in right now.

20 So this is an example of some of  
21 Daimler's commitment.

22 Right now there are 100 Smart EVs in  
23 London and Berlin. Working on the second  
24 generation of battery technology with those  
25 vehicles.

1           We have 100 fuel cell vehicles on the  
2   road right now and for the past several years.  
3   Sixty of the F-cell vehicles, 36 Citaro buses and  
4   3 Sprinter vans. And they are spread over  
5   demonstration projects in three different  
6   continents.

7           We have looked to increase the volumes  
8   of both technologies in the near future.

9           Daimler is very committed to  
10   commercializing these technologies and is spending  
11   its own money to do this. Just as an example, the  
12   company has spent 1.2 billion Euros in the last  
13   decade and a half on fuel cell vehicles.

14          And the company has also participated in  
15   some of the DOE demonstration projects with fuel  
16   cells.

17          So coming to fuel cell vehicles in  
18   California.

19          Daimler's fuel cell vehicles are part of  
20   what is a growing in number fleet of fuel cell  
21   vehicles in California.

22          The growth in numbers, a further growth  
23   in the numbers is planned but it is also dependent  
24   on infrastructure.

25          The growth of the infrastructure is the

1 key to increasing the vehicle production and  
2 reducing costs.

3 Daimler, and I think the other  
4 manufacturers, recognized early in this process  
5 there is going to be a need for a disproportionate  
6 number of fueling stations compared to the number  
7 of vehicles. Just to, again, provide the  
8 appropriate consumer experience.

9 But the goal for Daimler anyway is to  
10 reduce the fuel cell cost so that the incremental  
11 cost of the fuel cell are comparable with current  
12 hybrid and diesel technology by 2015. That's an  
13 ambitious goal but their engineers are confident  
14 they can do it.

15 So here are some of the keys to the  
16 hydrogen infrastructure.

17 Daimler believes that the fueling  
18 stations, as I just said, must be there when the  
19 vehicles arrive in quantity. And the company is  
20 committed to bringing those vehicles here in the  
21 next, next couple of years.

22 Sufficient stations must be available in  
23 the targeted market areas, which were identified  
24 in the Fuel Cell Partnership's Action Plan.  
25 Primarily in the west side of Los Angeles and

1 Orange County. That's where the industry has kind  
2 of coalesced around those areas as the likely  
3 starting point for fuel cell vehicles.

4 The fueling stations also need to meet  
5 consumer expectations. They need to be like gas  
6 stations. Easy, quick to fill up. I think  
7 there's some examples already of that. The  
8 station in Santa Monica.

9 The quality of the fuel also must be  
10 assured and there must be a stable supply  
11 available. The vehicles are very sensitive to the  
12 quality levels in the fuel.

13 And all stations must be available to  
14 all fuel cell vehicles. It may seem like a  
15 natural thing but up to this point that has not  
16 been the case.

17 So we urge that the Energy Commission  
18 continue to support hydrogen infrastructure as it  
19 has been doing through the AB 118 process. It's  
20 critical to continued success and progress in fuel  
21 cell vehicles.

22 Any questions?

23 PRESIDING MEMBER BYRON: That's it?

24 MR. COATES: That's it.

25 PRESIDING MEMBER BYRON: It's easy.

1 MR. COATES: Short and sweet.

2 (Laughter.)

3 PRESIDING MEMBER BYRON: I think the  
4 commitment that Daimler has to reducing costs  
5 within a six year time frame is rather  
6 extraordinary and something that will happen in my  
7 lifetime.

8 There's a lot in your presentation. And  
9 I'll just ask -- maybe a question if you have  
10 thought this through, I have not. The fueling  
11 stations. I was struck by Mr. Eaves' presentation  
12 that the LNG refueling stations are like mini  
13 refineries. Is there some linkage here perhaps  
14 with the LNG and the production of hydrogen fuel?

15 MR. COATES: It doesn't have to be.  
16 Interestingly, with hydrogen fuel it could be  
17 reformed on site or it could be just shipped in in  
18 compressed form. So there's a little more  
19 flexibility I believe in the deployment of the  
20 stations. Hence there's a great range in the cost  
21 of the stations as well.

22 There has been a big push, I believe, in  
23 the state to do a lot of on-site reforming, which  
24 raises the cost of the stations significantly.

25 PRESIDING MEMBER BYRON: Do you have any

1 idea of what those costs are?

2 MR. COATES: I think they were outlined  
3 in the Fuel Cell Partnership report. My  
4 recollection is they are, the tube-type stations  
5 are in the neighborhood of \$1 million to \$1.5  
6 million. And the on-site re-forming takes that up  
7 to \$5 million or more.

8 PRESIDING MEMBER BYRON: Thank you very  
9 much. That's a hefty price tag.

10 MR. COATES: Yes.

11 PRESIDING MEMBER BYRON: Thank you.

12 MR. COATES: Thank you.

13 MR. SCHREMP: Thanks, Michael.

14 The next speaker is John Mough from Food  
15 and Ag.

16 MR. MOUGH: Good afternoon,  
17 Commissioners, it's a pleasure to be here. My  
18 name is John Mough, I'm a chemist for the  
19 California Department of Food and Agriculture,  
20 Division of Measurement Standards. And I am here  
21 to talk about hydrogen retail infrastructure  
22 issues.

23 I won't bore you to tears with all the  
24 mission statements for the Division, where we get  
25 our authority, what our responsibilities are for

1 alternative fuels. Except for two points here.  
2 We want to ensure consumers get what they pay for.  
3 That's incredibly important at the retail level.  
4 And we want a level playing field in the  
5 marketplace.

6 Commercial measuring devices.  
7 Type Evaluation and device compliance in  
8 the Petroleum Products Program.

9 And our relationship with the county.  
10 What we do in the National Standards  
11 Organizations. We foster fair competition, which  
12 is incredibly important. And we facilitate  
13 economic growth and trade. That's incredibly  
14 important here in California that we can grow the  
15 hydrogen economy.

16 Some of the standards organizations we  
17 work with are SAE, ASTM International, NIST and  
18 ISO.

19 And now we get to the meat and potatoes,  
20 hydrogen.

21 PRESIDING MEMBER BYRON: Mr. Mough, do  
22 all of the CDFA presentations start with those  
23 same eight slides?

24 (Laughter.)

25 MR. MOUGH: Yes they do.



1               PRESIDING MEMBER BYRON: Thank you.

2               MR. MOUGH: I tried to go through them  
3 quickly though.

4               PRESIDING MEMBER BYRON: You did.

5               MR. MOUGH: Yes. Here is a typical  
6 hydrogen refueling station.

7               California leads the nation in hydrogen  
8 refueling stations. According to the National  
9 Hydrogen Association and the California Fuel Cell  
10 Partnership there's currently 62 hydrogen fueling  
11 locations in the United States, 29 of which are in  
12 California. California has more hydrogen fueling  
13 stations than any place in the nation.

14              With active support from Governor  
15 Schwarzenegger and multiple legislation and  
16 initiatives, clearly California is leading the  
17 nation in the hydrogen market and cannot wait for  
18 national retail standards to be developed.

19              National standards have not yet been  
20 developed for fuel quality, device specifications,  
21 test methods, sampling techniques, the method of  
22 sale or the unit of measure.

23              Now some of these are being addressed by  
24 the National Institute for Science and Technology.  
25 The method of sale and unit of measure is being

1 addressed there.

2 Sampling techniques and test methods are  
3 being addressed both by SAE and ASTM.

4 The fuel quality specification is being  
5 addressed by SAE, ASTM and ISO.

6 But the device specifications are kind  
7 of up in the air. The National Institute for  
8 Science and Technology is currently working on  
9 them but they haven't adopted them yet.

10 The lack of national standards are  
11 clearly an impediment to paving of the Hydrogen  
12 Highway.

13 PRESIDING MEMBER BYRON: Are there  
14 safety standards that need to be developed as  
15 well?

16 MR. MOUGH: Yes there are. But most of  
17 the safety standards have to do with permitting  
18 issues in locating of the service stations.  
19 That's being addressed by the National Fire  
20 Protection Agency under the new NFPA Code 55, I  
21 believe.

22 The SAE has taken a lead in designing  
23 the interfaces both for the nozzles for the  
24 refueling stations and for the automobiles. And  
25 they have standardized interfaces there.

1           The metering of hydrogen is very  
2       complex.

3           To date no approved commercial devices  
4       are available for reference standards. So out of  
5       those 29 refueling stations in California, zero  
6       can sell fuel today because none of them have an  
7       approved commercial device to be used for  
8       hydrogen. Sorry, I lost my train of thought  
9       there.

10          The existing data for the fueling  
11       dispensers is proprietary and is held by competing  
12       dispenser or flow meter manufacturers. This lack  
13       of data is preventing development of test  
14       equipment and procedures.

15          The Department is currently evaluating  
16       or will be evaluating three potential reference  
17       methods and test procedures that show promise for  
18       use during type evaluation field testing. They  
19       are the gravimetric, the volumetric and master  
20       meter. The gravimetric is a, take an empty  
21       cylinder, weigh it. Take it to the station and  
22       fill it. Measure how much you have and measure  
23       the accuracy there.

24          Unfortunately there are no currently  
25       established tolerances or specifications for

1       hydrogen dispensers. The Department does have the  
2       ability to grant on a case-by-case basis approval  
3       for devices. So they could do this for any of the  
4       existing 29 stations currently in California.  
5       None of them have applied to this time for  
6       approval of their dispensers.

7                Touching on the hydrogen fuel quality  
8       issue. Fuel cells require high quality hydrogen  
9       to prevent maximum performance -- to provide  
10      maximum performance and prevent premature  
11      failures.

12               As the quality is increased so does the  
13      cost of production and distribution.

14               And hydrogen fuel really must be, it  
15      must provide performance and be economically  
16      competitive to be a viable fuel.

17               California is the first state to  
18      establish hydrogen fuel quality specifications.  
19      The national and international quality standards  
20      do not exist.

21               Both SAE, ASTM and ISO are taking a lead  
22      in development of these specifications and test  
23      procedures.

24               And the Division is participating  
25      actively in this process.

1                   And here is my contact information. If  
2                   you have any questions feel free to call me. And  
3                   I'd be happy to entertain any questions.

4                   PRESIDING MEMBER BYRON: No, but I thank  
5                   you very much for being here. This is also very  
6                   informative. Thank you, sir.

7                   MR. MOUGH: Thank you.

8                   MR. SCHREMP: Thank you very much, John.

9                   And last but not least, as they say.  
10                  Jay McKeeman from CIOMA has some comments from the  
11                  dais.

12                  MR. McKEEMAN: Thank you. I'll sit down  
13                  if that's okay.

14                  MR. SCHREMP: All the mics are live.

15                  MR. McKEEMAN: All right.

16                  PRESIDING MEMBER BYRON: Mr. McKeeman,  
17                  remind us what CIOMA stands for.

18                  MR. McKEEMAN: It is the California  
19                  Independent Oil Marketers Association.

20                  PRESIDING MEMBER BYRON: Right.

21                  MR. McKEEMAN: We represent fuel  
22                  distributors in the state.

23                  Thank you very much for having me at  
24                  attend. I know the topic of my discussion is the  
25                  Enhanced Vapor Recovery issue and how that is

1 affecting fuel supply or potentially affecting  
2 fuel supply in the state and I will get to that  
3 very shortly.

4 But having the advantage of sitting  
5 through a number of presentations I think from the  
6 fuel distributor viewpoint there are some issues  
7 that I would like to raise or at least address in  
8 terms of the pertinence to the discussion of  
9 getting new fuels into the supply chain in  
10 California. So it will be a short presentation,  
11 no slides.

12 One thing I promise not to talk about is  
13 fuel temperature.

14 (Laughter.)

15 MR. McKEEMAN: In the -- I think the  
16 thing that struck me the most in the discussions  
17 today, and something that is obviously high on our  
18 radar screen as well as the state's radar screen  
19 is the Low-Carbon Fuel Standard that's going to be  
20 discussed later this -- or is supposed to be  
21 discussed later this month by the Air Resources  
22 Board.

23 And I think today's discussions bring a  
24 lot of focus onto what we think is a fairly  
25 significant omission from the Low-Carbon Fuel

1 Standard. And that is making sure that fuels are  
2 ready to be introduced into the stream of commerce  
3 before they are certified. It's a fairly --

4 We believe it's a fairly simple  
5 checklist approach to make sure that the fuel,  
6 number one, has an appropriate certification.  
7 That certification branches out into a variety of  
8 other regulatory requirements such as storage,  
9 such as tank compatibility, such as dispensing  
10 devices, et cetera. Division of Measurement  
11 Standards requirements. So you have to have the  
12 appropriate certifications for the fuel.

13 You also have to have the appropriate  
14 certifications where that fuel can be stored and  
15 distributed from. The B5 example was brought up  
16 today. Obviously that's putting the cart before  
17 the horse.

18 And we think that as part of the fuel  
19 standard there needs to be a simple checklist  
20 requirement inserted into the Low-Carbon Fuel  
21 Standard that says, these certifications have been  
22 taken care of. Once those certifications have  
23 been taken care of the fuel is truly ready to be,  
24 you know, distributed and inserted into the stream  
25 of commerce. There is no requirement for that in

1 the Low-Carbon Fuel Standard right now.

2 And we anticipate that by designating or  
3 encouraging fuels that frankly are still on the  
4 lab bench right now such as biodiesel from algae  
5 and waste oil and cellulosic ethanol. Those  
6 aren't even close to being certified. I mean,  
7 they are not even into production yet. They are  
8 still on the lab bench. That means that they  
9 aren't even close to being certified or in the  
10 radar screens of the appropriate third-party  
11 testing agency.

12 So some way we have got to push that  
13 whole discussion much earlier into the  
14 conversation. Maybe at the lab bench time. To  
15 make sure that those fuels are ready to be  
16 distributed at the time that they are anticipated  
17 to be needed or required into the, into the  
18 fueling system.

19 So we certainly encourage the Energy  
20 Commission to engage in that conversation. You  
21 have heard a lot today about the issues, you know,  
22 from the time that it gets from the manufacturer  
23 to the time that it gets to the customer. There  
24 are issues, especially for the liquid fuels. To  
25 make sure that as we move into alternative liquid



1       fuels that the sequence is set up appropriately.

2               Another issue that was I think brought  
3       home today, especially by the first speaker, is  
4       that the service station infrastructure in this  
5       state has changed dramatically in the last five to  
6       ten years. When I first started working for CIOMA  
7       the basic back of the envelope was 70 percent  
8       major oil companies, 30 percent independents.  
9       That's completely flipped. I think it's an 80/20  
10      now, 80 percent independents, 20 percent major oil  
11      companies.

12             So the ownership capability or the  
13      ownership inventory of the service stations has  
14      changed, as has the ability to put in very  
15      expensive requirements. So that may be a very big  
16      stumbling block as we move forward in terms of how  
17      to get some of this very expensive architecture  
18      and fueling infrastructure implemented into the,  
19      into the, into the fabric of our society.

20             And we are certainly, our members are  
21      interested in participating. It's just when you  
22      have to go to a bank and get the loan, especially  
23      right now, it is a proposition that is not easy to  
24      do, especially for the more esoteric types of  
25      fuels.

1                   One of the things that was mentioned  
2           about the B5 problem with the Water Board. that  
3           there are some emergency regulations being  
4           developed. We are interested in those regulations  
5           but we understand that the emergency regulations,  
6           one of the provisions is that whoever decides to  
7           store above B5 in an underground storage tank is  
8           not going to be allowed to be part of the  
9           underground storage tank fund. That's a fund that  
10          helps you remediate leaks.

11                   So an emergency regulation that  
12          recognizes that you can store above B5 in an  
13          underground storage tank without that important  
14          provision is probably not going to mean anything  
15          because people, frankly, aren't going to have the  
16          insurance or the assurance to store the material  
17          in underground storage tanks. So that's another  
18          important factor that all these certifications  
19          have is the insurability or the liability of  
20          people to handle these materials. So that's just  
21          another part of the checklist that needs to be  
22          covered.

23                   Another issue that kind of was not  
24          touched on but is really a fresh policy issue is  
25          as you heard the Division of Measurement Standards

1 is putting a lot of time and energy into the  
2 development of regulations and certifications and  
3 Type evaluations for alternative fuels. Right now  
4 that is handled through their Petroleum Program.  
5 And their Petroleum Program is funded by a two  
6 cent a gallon fee on lubricants, motor lubricants.

7 I think it poses a question of whether  
8 that is the appropriate funding mechanism,  
9 especially if we are looking at the type of  
10 certifications that are going to be very expensive  
11 and complicated and whether the alternative fuels  
12 need to participate for the regulatory burden that  
13 they, they happen to place on various regulatory  
14 agencies for taking care of the certifications and  
15 evaluations of their, of their fuels in the stream  
16 of commerce.

17 There is a bill SB 260 by Senator  
18 Wiggins that is addressing an increase in the two  
19 cents a gallon fee on lubricants. And we would  
20 certainly invite the Energy Commission to join us  
21 in a discussion with the author and others on  
22 whether it's time to start looking at whether the  
23 alternative fuels need to pay their fair share of  
24 the regulatory burden. Putting it all on  
25 transportation and lubricants that may or may not

1 be used in the vehicles that are using the  
2 alternative fuels I think is an appropriate policy  
3 question.

4 Finally on the subject of Enhanced Vapor  
5 Recovery. There are a lot of numbers out there,  
6 and I don't claim to be the expert on the numbers  
7 in terms of exactly what the impact that  
8 particular regulation is going to have on service  
9 stations but I think it is going to be fairly  
10 significant.

11 Just to bring you up to speed, it's an  
12 Air Resources Board vapor recovery requirement.  
13 The deadline was April 1. And I think even in  
14 ARB's own estimate less than half of the service  
15 stations in the state were actually equipped to  
16 meet that April 1st deadline.

17 Beyond that the question is, how many  
18 service stations are not going to be able to do  
19 the upgrade because of economic reasons?  
20 Primarily because of economic reasons. There's a  
21 variety of estimates out there. Some people think  
22 two percent of the service stations, other people  
23 think ten percent of the service stations.

24 It's a guessing game right now. And  
25 really until we see, you know, probably another

1 couple of months into the post-deadline compliance  
2 situation people understand what the penalties are  
3 for not being in compliance. Understanding if  
4 there is going to be any loosening in the credit  
5 situation. Whether they can afford to make the  
6 upgrades. Whether they are going to be given  
7 alternative compliance because they haven't been  
8 able to get financing. There are still a lot of  
9 questions out there.

10 But I would submit that even at two  
11 percent that's a fairly significant number.  
12 Because basically what is getting cleaned out  
13 there are the lowest -- the smallest service  
14 stations and probably the lowest price service  
15 stations. The ones that are really operating at  
16 the bottom of the price structure. The small  
17 independents that people are literally living in  
18 their service stations and operating -- they have  
19 skinned the cost of operation back to the minimum.

20 So I think it's important for the Energy  
21 Commission to continue to monitor this situation  
22 and understand what kinds of ramifications this  
23 may have in terms of supply, service availability.  
24 And especially in terms of pricing because there's  
25 been quite a number of studies that show we need

1 to start taking out the bottom of the market. Of  
2 course that has an upward increase on price.

3 But more importantly I think it takes  
4 out a lot of the very convenient service stations  
5 in the state and hopefully not too many of the  
6 rural service stations. Because in that situation  
7 you have motorists traveling significant distances  
8 just to get their cars or trucks refueled.

9 So no solid numbers right now but we are  
10 monitoring it. Basically the Air Resources Board  
11 -- the Governor sent a letter to the Air Resources  
12 Board saying, we need you to be observant of the  
13 problems that are happening out there.

14 The Air Board sent a letter to the  
15 California Air Pollution Control Officers  
16 Association saying, we hope that you will be  
17 observant of the problems. The Air Pollution  
18 Control Officers has written a letter back to the  
19 Legislature saying, we are paying attention to  
20 those issues but now we need to take a look at and  
21 see exactly, you know, the demographics of what is  
22 happening with the service stations and how many  
23 are being penalized or how many are actually going  
24 to choose to shut down.

25 That's the end of my presentation. I am

1 here to answer any questions.

2 PRESIDING MEMBER BYRON: Very good. It  
3 sounds like a lot of letters are being written on  
4 the issue.

5 MR. McKEEMAN: That's true.

6 PRESIDING MEMBER BYRON: Of course we  
7 are not heavily involved in that process at the  
8 ARB. I probably know most of what is going on  
9 there through what I have read in the news. But I  
10 did make some notes based on your comments that  
11 we'll look at for recommendations.

12 And of course for the Low-Carbon Fuel  
13 Standard I think you need to be at that ARB.  
14 Someone made reference it is in about nine days.  
15 Because they certainly need to hear from you if  
16 they have not already.

17 MR. McKEEMAN: They have.

18 PRESIDING MEMBER BYRON: The ownership  
19 that has flipped in service stations here in the  
20 state of California. Is that consistent  
21 throughout the rest of the United States?

22 MR. McKEEMAN: Actually it is I think  
23 modeled, now California most closely models  
24 ownership trends in the rest of the, the rest of  
25 the nation. I mean, basically what happened in

1 California is that the service stations were so  
2 close to the refineries that it just made economic  
3 sense for the major oil companies to own and  
4 operate the service stations and transport the  
5 fuels directly to the service stations. Kind of  
6 that was the history of the development of service  
7 stations in the state.

8 But what's happened now is that the  
9 major oil companies have found that operating  
10 service stations is not a particularly profitable  
11 exercise and that -- so they basically bailed out  
12 and sold off their service stations to independent  
13 operators.

14 PRESIDING MEMBER BYRON: Of course your  
15 comments tend to indicate we are making them even  
16 less profitable.

17 MR. McKEEMAN: There's an argument to be  
18 made there.

19 PRESIDING MEMBER BYRON: Mr. McKeeman,  
20 thank you very much. Thank you very much.

21 Gordon, I don't have any more  
22 presentations on today's agenda, do you?

23 MR. SCHREMP: No I do not. Would you  
24 like a couple more?

25 (Laughter.)



1               PRESIDING MEMBER BYRON: No. I am eager  
2 to be back here tomorrow.

3               MR. SCHREMP: Okay. Bright and early.

4               PRESIDING MEMBER BYRON: Yes.

5               MR. SCHREMP: Not 9 o'clock but actually  
6 8:30.

7               PRESIDING MEMBER BYRON: Are you going  
8 to try and do some public comment today or  
9 tomorrow?

10              MR. SCHREMP: We would like to do some  
11 public comment today. We have finished a couple  
12 of different sessions. We don't know if there are  
13 any folks who were planning on speaking during the  
14 public comment period but you are certainly  
15 invited to do so now.

16              I'll have to ask if there are any  
17 questions that have come in on-line or any people  
18 who have hung in there this whole time with their  
19 hands up?

20              Seeing none.

21              MR. JANUSCH: We have John Shears. Go  
22 ahead, John.

23              MR. SHEARS: Can people hear me okay?

24              MR. JANUSCH: Yes.

25              MR. SHEARS: And for the transcription

1 service, John Shears with the Center for Energy  
2 Efficiency and Renewable Technologies.

3 I just wanted to update that the Low-  
4 Carbon Fuel Standard is the fourth item on the ARB  
5 Board's agenda for Thursday, April 23rd.

6 And then also I just wanted to caution,  
7 although I note that it was acknowledged that  
8 California wouldn't likely be moving beyond E10 in  
9 the general fuel mix. That an important  
10 ramification that comes from including more  
11 ethanol in reformulated gasoline, both in  
12 California and without, has to do with the large,  
13 shall I say, huge emissions that can come from  
14 off-road use.

15 And even with E10 under the California  
16 predictive model, there is a lot of work that ARB  
17 and the other stakeholders still have to undertake  
18 with regards to how to mitigate the off-road  
19 emissions with the use of E10 in California.

20 PRESIDING MEMBER BYRON: Okay, thank  
21 you, Mr. Shears.

22 MR. JANUSCH: That's all.

23 PRESIDING MEMBER BYRON: Okay, any other  
24 comments on the phone? Are we on WebEx, is that  
25 what it is?

1 MR. JANUSCH: Yes.

2 PRESIDING MEMBER BYRON: On WebEx?

3 Okay. Commissioner Boyd I know wanted  
4 to come back but that's okay because we have  
5 another half day to go. He got pulled into a  
6 meeting in the Chairman's office and that is why  
7 he is not with us right now.

8 But I found this to be just  
9 extraordinary. I thank you all so very much for  
10 an enormous amount --

11 Commissioner Boyd, come on in here.

12 For an enormous amount of information  
13 that you have communicated to all of us today.  
14 And we will certainly be back here tomorrow.

15 I don't know if you all will be back or  
16 if it is a different set of folks. But I want to  
17 make sure that you get a big thank you from this  
18 Commission for being here and for the time and  
19 effort that you made in these presentations that  
20 you gave. It will have a lot of influence  
21 certainly in my thinking as we go forward in  
22 preparing the Integrated Energy Policy Report for  
23 this year.

24 Commissioner Boyd, I'm sorry you missed  
25 the last couple of presentations. Did you want to

1 say anything today? We will be back tomorrow.

2 VICE CHAIRMAN BOYD: I'm sure you said  
3 it all. I apologize for not being here but I got  
4 called out by the Chair for an issue we had to  
5 deal with.

6 Susan will catch me up on what I missed.  
7 I'll see you all -- or see some of you, as you  
8 said, tomorrow morning.

9 PRESIDING MEMBER BYRON: Correct, 8:30  
10 tomorrow morning.

11 VICE CHAIRMAN BOYD: It's been  
12 fascinating so far. But unfortunately it means  
13 more work for us. Such is life.

14 MR. SCHREMP: Yes, Commissioner, it will  
15 be 8:30 tomorrow instead of a 9 o'clock start.

16 And you're right, it's a different  
17 crowd. It will be a cruder group of people  
18 because --

19 (Laughter.)

20 MR. SCHREMP: I'm sorry, that's a crude  
21 oil group of people, sorry.

22 PRESIDING MEMBER BYRON: Not as refined  
23 as this group was.

24 MR. SCHREMP: Quite. And also petroleum  
25 pipeline issues.

1           PRESIDING MEMBER BYRON: All right.

2           MR. SCHREMP: So look forward to that.

3           PRESIDING MEMBER BYRON: Thank you all  
4           very much.

5           (Whereupon, at 5:09 p.m., the Joint  
6           Committee Workshop was adjourned.)

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## CERTIFICATE OF REPORTER

I, JOHN COTA, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Joint Committee Workshop; that it was thereafter transcribed into typewriting.

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 29th day of May, 2009.

  
JOHN COTA