

ADVISORY COMMITTEE MEETING
BEFORE THE
CALIFORNIA ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:)
)
Implementation of Alternative) Docket No.
and Renewable Fuel and) 08-ALT-1
Vehicle Technology Program)
-----)

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

THURSDAY, JANUARY 8, 2009

9:00 A.M.

ORIGINAL

Reported by:
John Cota
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COMMISSIONERS PRESENT

James D. Boyd, Vice Chair and Presiding Member

Karen Douglas, Associate Member

ADVISORS PRESENT

Kelly Birkinshaw, Advisor to Commissioner Boyd

Susan Brown, Advisor to Commissioner Boyd

Diana Schwyzer, Advisor to Commissioner Douglas

STAFF PRESENT

Aleecia Macias

Pilar Magaña

Tim Olson

Peter Ward

AB 118 ADVISORY COMMITTEE MEMBERS PRESENT

Tony Brunello, Resources Agency

Tom Cackette, California Environmental Protection Agency, Air Resources Board

Tim Carmichael, Coalition for Clean Air

Will Coleman, Mohr Davidow Ventures

Peter Cooper, California Labor Federation (via telephone)

Carla Din, Apollo Alliance

Daniel Emmett, Energy Independence Now Coalition (via telephone)

Bonnie Holmes-Gen, American Lung Association of California

Roland Hwang, National Resources Defense Council

Dan Kammen, Renewable and Appropriate Energy Laboratory (via telephone)

Jay McKeeman, California Independent Oil Marketers Association

Patricia Monahan, Union of Concerned Scientists (via telephone)

Elisa Odabashian, Consumers Union

Jerry Secundy, California Council for Environmental and Economic Balance - represented by Kendra Daijogo, the Gualco Group, Inc.

Jananne Sharpless, Sharpless Consulting

John Shears, Center for Energy Efficiency and Renewable Technologies

Richard Shedd, represented by Kathy Hicks, Department of General Services

Jim Sweeney, Precourt Institute for Energy Efficiency (via telephone)

ALSO PRESENT

Sig Gronich, United States Department of Energy
(via telephone)

Robert Bienenfeld, American Honda Motor Company,
Inc.

Matt Miyasato, PhD, South Coast Air Quality
Management District

Dave Modisette, California Electric Transportation
Coalition

Pete Price, California Natural Gas Vehicle
Coalition

Mike Harrigan, Coulomb Technologies, Inc.

Todd Campbell, Clean Energy

Bonnie Scott, Global Cooling Solutions, Inc.

Chuck White, Waste Management

Daniel Davids, Plug In America

Danielle Fugere, Friends of the Earth

Joshua Goldman, Proterra

Dale Hill, Proterra

Rain, Source One Records

Tom Fulks, MightyComm
representing Daimler Fuel Cell Program

Judy Bishop
San Diego EcoCenter for Alternative Fuel Education

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

2 9:17 a.m.

3 PRESIDING MEMBER BOYD: Sorry for the
4 late start but we thought we would try to let as
5 many people drift in. Since the audience
6 outnumbers the Advisory Committee ten-to-one we
7 thought we would try to balance the ratio a little
8 bit here.

9 Anyway, welcome to this public meeting
10 of the Alternative and Renewable Fuel and Vehicle
11 Transportation --

12 MS. SHARPLESS: Excuse me, Jim. Are you
13 actually amplified or is it just my hearing?

14 PRESIDING MEMBER BOYD: Can you hear me?
15 No.

16 MS. SHARPLESS: You've got a green light
17 but I don't --

18 PRESIDING MEMBER BOYD: I've got a green
19 light, which means it's on, and I can barely hear
20 myself. It is on.

21 ASSOCIATE MEMBER DOUGLAS: We'll share.

22 PRESIDING MEMBER BOYD: Apparently the
23 microphone there didn't work too well.

24 I'll start all over again. Sorry for
25 the late start, we were waiting for folks.

1 Good morning. Welcome to this I believe
2 fifth meeting of the Advisory Committee for the
3 Energy Commission's Alternative and Renewable Fuel
4 and Vehicle Technology Program. Or as we like to
5 say, the AB 118 Program.

6 I want to thank all of you, particularly
7 the members of the Advisory Committee, for being
8 here today. I know it's tough to get a large
9 group of people available all at the same time.
10 And I believe there's a few Advisory Committee
11 members on the telephone, if I have been advised
12 correctly.

13 I am Jim Boyd, Commissioner of the
14 Energy Commission, Chair of the Transportation
15 Committee, to my immediate left is Commissioner
16 Douglas who is the Associate Member of the
17 Transportation Committee, and the Commissioners
18 who are overseeing this particular effort.

19 In a moment I am going to have the
20 Advisory Committee members introduce themselves.
21 I'll just mention here -- And I notice I'm getting
22 more volume every second. Now I'll have to be
23 careful not to be too loud. Did we get this one
24 back? We did, okay.

25 Anyway, the purpose of this Advisory

1 Committee, and as I indicated one of many in a
2 series, is to help this Commission formulate its
3 program really, for the implementation of AB 118.
4 The Investment Plan is the document that we are
5 looking most closely at. It will help guide our
6 future. So we thank everybody for your
7 participation. I am impressed with the size of
8 the audience and appreciate everybody being here.

9 With that I think I will just ask
10 everyone to introduce themselves and we will just
11 start on my far left here.

12 MS. DAIJOGO: Kendra Daijogo on behalf
13 of -- I am here for Jerry Secundy of the
14 California Council on Environmental and Economic
15 Balance. He apologizes for not being able to make
16 it, he had a conflict.

17 PRESIDING MEMBER BOYD: We appreciate
18 you are here as an alternate for him.

19 MR. McKEEMAN: Jay McKeeman, California
20 Independent Oil Marketers Association.

21 MR. COLEMAN: Will Coleman from Mohr
22 Davidow Ventures.

23 MR. SHEARS: John Shears, Center for
24 Energy Efficiency and Renewable Technologies.

25 MR. CARMICHAEL: Good morning. Tim

1 Carmichael, Coalition for Clean Air.

2 ADVISOR SCHWYZER: I'm Diana Schwyzer,
3 Advisor to Commissioner Douglas.

4 ADVISOR BIRKINSHAW: And I'm Kelly
5 Birkinshaw, Advisor to Commissioner Boyd.

6 MR. CACKETTE: And I'm Tom Cackette from
7 the California Air Resources Board.

8 MS. SHARPLESS: And I'm Jan Sharpless.
9 I'm a private consultant plus a former Energy
10 Commissioner.

11 MR. BRUNELLO: Tony Brunello of the
12 Resources Agency.

13 MS. DIN: Carla Din with the Apollo
14 Alliance.

15 MR. HWANG: Roland Hwang, National
16 Resources Defense Council.

17 MS. HOLMES-GEN: Bonnie Holmes, American
18 Lung Association of California.

19 MS. HICKS: And Kathy Hicks here on
20 behalf of Rick Shedd. I am the Chief of Fleet for
21 the Department of General Services.

22 PRESIDING MEMBER BOYD: Welcome
23 everybody. Peter, do we have Advisory Committee
24 members on the phone? If so I would like to get
25 them to introduce --

1 MR. WARD: I believe we do have Advisory
2 Committee members on the phone. They are having
3 difficulty hearing us for some reason but we are
4 trying to work that out right now.

5 PRESIDING MEMBER BOYD: Well, if anybody
6 out there can hear me and you are an Advisory
7 Committee member I would appreciate if you would
8 introduce yourself so we all know who is out
9 there.

10 MR. EMMETT: Okay. This is Daniel
11 Emmett from Energy Independence Now. Can folks
12 hear me?

13 PRESIDING MEMBER BOYD: Yes Daniel,
14 thank you.

15 MR. EMMETT: Great. Sorry, I wanted to
16 be there in person but my flight was cancelled
17 this morning due to Northwest weather. So I am
18 having to be here on the phone so I'll try my best
19 to participate in my capacity as a panel member.

20 PRESIDING MEMBER BOYD: Thank you,
21 appreciate your effort. Sorry about the weather.

22 MR. GRONICH: This is Sig Gronich. I'm
23 just a person listening.

24 (Laughter)

25 PRESIDING MEMBER BOYD: Sig, a lot of us

1 know you and know you are not just a person.

2 MR. GRONICH: Okay.

3 PRESIDING MEMBER BOYD: But in any
4 event, thank you for being here. A long-time DOE
5 employee/advocate for the hydrogen fuel cell and
6 other alternative fuels industries, businesses in
7 the programs of the federal government.

8 MR. WARD: Are there other Advisory
9 Committee members on the phone?

10 MR. KAMMEN: This is Dan Kammen in
11 Berkeley listening in.

12 PRESIDING MEMBER BOYD: Hi Dan. Okay.

13 With that and not seeing any other
14 arrivals. Peter, I don't know what the deal is
15 today but the sound system, which is usually very
16 reliable, is giving us difficulty. And unless I
17 am having heat flashes it is really warm,
18 unusually warm for this frigid building. Is there
19 something going on here?

20 MR. WARD: Maybe we are over-
21 compensating.

22 PRESIDING MEMBER BOYD: Okay.

23 MR. WARD: I don't know if we can get it
24 turned down.

25 PRESIDING MEMBER BOYD: But we don't

1 usually have this big an audience for any hearings
2 we have ever have in this building and so maybe
3 the heat load of the bodies is over-compensating.
4 Anyway, enough.

5 Happy New Year, everybody. Welcome to
6 2009 and this meeting. Commissioner Douglas, do
7 you have any comments you would like to make
8 before I turn it over to the staff and Peter to
9 take us through the agenda?

10 ASSOCIATE MEMBER DOUGLAS: I do not,
11 let's get started with the agenda. Happy New Year
12 and welcome everybody.

13 PRESIDING MEMBER BOYD: And welcome to
14 just confirmed by the Rules Committee,
15 Commissioner Douglas yesterday. Peter.

16 MR. WARD: Thank you. Thank you
17 Commissioners Douglas and Boyd and members of the
18 Advisory Committee, Energy Commission staff and
19 stakeholders.

20 Since we last met on July 9th, that was
21 a meeting that unified us all to a certain degree,
22 and a lot has happened since that time. We all
23 can sit back and take stock of all that has
24 happened. Fuel prices at that time were at all
25 time highs. They have since come down but I am

1 willing to predict that they will go back up.

2 The nation's economy took a tumultuous,
3 unpredictable turn, leading us to wonder where the
4 bottom truly is. Many key industries and their
5 employees are all completely uncertain for the
6 future. The nation has new leadership, or will
7 soon, and the timing is very positive.

8 The Investment Plan and the planning for
9 the AB 118 has been affected by these many changes
10 and emerges now as more important than ever.
11 Solving the climate change challenge, reducing our
12 petroleum dependence, improving our air quality
13 and using our waste and renewable resources can be
14 accomplished.

15 Developing and revitalizing our state
16 economy is now so much more important. And these
17 issues can be addressed symbiotically with this
18 grand opportunity before us, AB 118.

19 The recent changes underscore the need
20 to use, to plan and act wisely, reflects ability
21 and nimbleness, and to maximize achieving the
22 promise of the many public benefits for this
23 program.

24 This is a good plan and it is a good
25 start on a course never traveled before. I want

1 to thank the Commissioners, their advisors, our
2 Advisory Committee, the staff of the
3 transportation division and other staff of the
4 Energy Commission for their honest and honorable
5 contributions to this plan.

6 With few available resources early in
7 this process the planning, analysis, thoughtful
8 discussion, writing and rewriting and review was
9 completed with dedication to this important
10 opportunity that now presents.

11 This plan and those to follow must be
12 thoughtful, strategic and flexible to respond to
13 the rapidly changing conditions of energy, the
14 environment and the economy. We should keep in
15 mind the program must be flexible enough to
16 respond to the opportunities that will present
17 over time. These will change.

18 I want to reiterate or those who don't
19 know, we have a two year encumbrance for this
20 program and a four year liquidation. Which is
21 helpful, other programs in the past have had a one
22 year encumbrance and that makes it very difficult
23 to be flexible and nimble.

24 The temporal nature of investments and
25 investment portfolios is key. There are short-,

1 mid- and long-term investments and all are very
2 necessary.

3 This is a market mechanism program that,
4 if administered wisely, can complement and
5 maximize the potential of existing and future
6 regulations.

7 Using creative approaches and knowing
8 there are uncertainties in accepting them will be
9 key. Whatever funding allocation or bin we
10 discuss here, we can assure that the most positive
11 projects are funded. That that attract the most
12 public benefits.

13 In the prior meeting I mentioned the
14 attributes and enhancements type of evaluation of
15 projects. That's something we still would like to
16 do. And I think that serves all bins and it will
17 yield the best projects that will actually rise to
18 the top.

19 This is an unprecedented opportunity for
20 fostering dynamic, continuous innovation. I think
21 that's a segue. I just was in Disneyland and they
22 coined a new word there and it's called
23 innoventions. It's invention and innovation and I
24 think this is something that we are all looking
25 forward to.

1 I am not sure we can rely on the
2 traditional institutions to bring us new
3 technologies and fuels in the future so I would
4 like to stress the innovation aspect of this
5 program. We will be reaching out to those
6 innovections in the future in countering climate
7 change, for infusing competition in our
8 transportation fuels market and advancing vehicle
9 technologies. California will respond. And yes,
10 we know the world is watching.

11 Going over the agenda for today. This
12 is basically how it will go. We are in the staff
13 presentation mode now. I will be presenting an
14 overview of the Investment Plan. I want to skip
15 fairly quickly through the Investment Plan because
16 I know some of our Advisory Committee members have
17 time limitations this morning and we do want to
18 hear from all of you.

19 We will be having proposed funding
20 recommendations, Tim Olson will be going over
21 after mine. Stakeholder presentations and public
22 comments and the Advisory Committee comments and
23 discussion and then we will have closing remarks.

24 Just to reiterate. In July the program
25 purpose was to develop and deploy innovative

1 technologies that transform California's fuel and
2 vehicle types to help attain the state's climate
3 change policies.

4 The part of the program that we
5 considered very important is creating a framework
6 for sustainability as we go forward with this
7 program. It is ultimately important not just
8 typically as it is associated with the biofuels
9 area but for all aspects of this program.

10 We want to establish sustainability
11 goals to ensure that the alternative renewable
12 fuel and vehicle development projects on a full
13 fuel cycle assessment basis will not adversely
14 impact natural resources, especially state and
15 federal lands.

16 As I mentioned earlier, investing in
17 clean economic development has risen to the top
18 and become more important with the difficulties we
19 are having in our economy.

20 Financial incentives and private
21 investment are what we will be featuring in this
22 program.

23 We would like to encourage market
24 creation and consumer choice.

25 And leverage the innovation and use

1 renewable and waste resources.

2 The agenda for this is pretty much as I
3 just discussed. We will have a program
4 implementation schedule at the very end just to
5 see how we are going from this point on.

6 At the last meeting we received many
7 suggestions and in the intervening period as well.
8 We will be guided by the Full Fuel Cycle
9 Assessment. And we are committed to updating that
10 and that work has already begun here at the Energy
11 Commission. We are in close association with the
12 Air Resources Board as they develop their low-
13 carbon fuel standard. And the GREET modeling
14 contract that we have is, is key to that effort as
15 well.

16 We have established a goal-driven
17 methodology for allocating and guiding the
18 investment of the funds.

19 That included the reverse engineering
20 from the 2050 Vision that was presented in the AB
21 1007 Alternative Fuels Plan that was adopted a
22 little over a year ago by, jointly adopted by the
23 Air Resources Board and the California Energy
24 Commission.

25 We have performed a Gap Analysis, which

1 we are asked to do. TIAX helped us with that.
2 And that has been included into the updated
3 Investment Plan.

4 We will be continuing sustainability,
5 market and incentive studies. As a matter of fact
6 we have convened a sustainability working group,
7 which we do not anticipate dismissing at all. I
8 think that should be an active part of this
9 program for over the seven year life of the
10 program. I think it is that important to us and
11 that's the way we view it.

12 We will be continuing the market studies
13 and incentive studies. We have already struck a
14 partnership with the National Renewable Energy Lab
15 and they will be helping us with some of the
16 analysis for this program. Especially now. They
17 have made a very generous offer to help us now
18 before our funding becomes available for our use.

19 We have and will continue our strong
20 coordination with the PIER Alternative Fuels
21 Roadmap and the PIER Transportation Program.

22 We will be evaluating the incentives for
23 the capital efficiency work. I think that is a
24 very important aspect that Will Coleman mentioned
25 to us. We want to make sure that the incentives

1 we offer fit the market and fit the industries for
2 where they will be applied.

3 And again, maybe this will be kind of a
4 broken record but I can't, I really can't over-
5 stress how important it is that we emphasize
6 economic development and workforce training. That
7 has certainly risen to the top. It was key on our
8 list before. It is certainly at least as high,
9 probably higher than that now.

10 The analyses performed was, as I
11 mentioned we are updating the GREET Full Fuel
12 Cycle Assessment. That work has already begun.

13 We have performed our back-casting from
14 the 2050 Vision as was suggested by Tom Cackette
15 from the Air Resources Board. We are going to be
16 using that as guidance for us to assume the
17 correct trajectory to get from here to 2020 and
18 from 2020 and beyond.

19 The back-casting effort was initially
20 done for light-duty vehicles and fuels. We have
21 basically populated the existing 2050 Vision with
22 the CALCARS Model from the California Energy
23 Commission.

24 We have also evaluated medium- and
25 heavy-duty vehicles and fuels as well.

1 We performed a Gap Analysis, TIAX helped
2 us with that. And as I mentioned, that has been
3 incorporated into this.

4 And another large part is we have
5 evaluated partner and stakeholder inputs that we
6 have received in meetings and we have received in
7 a very extensive set of submittals to our docket.

8 That basically shows where the project
9 opportunities and ideas are out there in the
10 project market, if you will. So we are using the
11 guidance from the framework and meshing that up
12 with the opportunities that present for, for the
13 program.

14 Regulations have ben prepared and
15 submitted to the Office of Administrative Law.
16 These are the topics. I think many of you are
17 already familiar with these. I won't really go
18 into them other than they will be familiar to some
19 of you. Obviously the advisory body, member
20 selection, duties and the purpose of this
21 Investment Plan.

22 Sustainability goals and evaluation
23 criteria. We are going to be incorporating as
24 many of those we can for all of the projects. I
25 think those are useful as we anticipate getting

1 attributes and enhanced incentives or enhanced
2 scoring for new proposals.

3 A summary of the Draft Investment Plan.
4 We have determined priorities and opportunities by
5 using the AB 32 goal to reduce GHG emissions back
6 to 1990 levels by the year 2020.

7 The Governor's Executive Order S-03-05
8 goal, to reduce GHG emissions 80 percent below the
9 1990 levels by 2050.

10 And we used the 2050 Vision, as I
11 mentioned, to examine and set the necessary
12 trajectory to achieve the state's climate change
13 goals.

14 We have established -- We will establish
15 market mechanisms to complement existing and future
16 regulations. I think that is an important aspect
17 of this because we have been told we can't do it
18 by regulations alone and we can't do it by market
19 mechanisms alone. But I think a symbiotic
20 relationship between the two is going to be
21 essential here.

22 MR. CARMICHAEL: Question?

23 MR. WARD: Yes.

24 MR. CARMICHAEL: On that slide. Should
25 we read that as CEC's prioritization of these

1 elements? Is that how you set up the investment?
2 How you set up the Investment Plan?

3 MR. WARD: Well no, I don't think we set
4 it as a priority. We haven't numbered them.

5 MR. CARMICHAEL: Okay.

6 MR. WARD: The foremost one is the AB 32
7 goal. That is in statute, it is law and that is
8 our kind of overall focus. But we do want to
9 maintain and establish a trajectory to get from
10 here to there. Because if we don't, if we don't
11 meet that goal I think we are going to have
12 difficulty in 2050. And then from 2020 to 2050 as
13 the trajectory necessary to achieve that one as
14 well.

15 MR. CARMICHAEL: Thank you.

16 MR. WARD: Step 1 of the draft --
17 setting our priorities was to determine the
18 relative greenhouse gas reductions. As I
19 mentioned, this is a bit redundant because we did
20 use the 2050 Vision for light-duty vehicles only
21 and established relative contributions for each
22 fuel and vehicle category to meet 2020 and 2050
23 goals.

24 We had two public workshops in September
25 that Gerry Bemis and Malachi Weng-Gutierrez

1 presented their work on this, which was a very
2 exhaustive look at trying to populate the 2050
3 Vision. I think it has been very helpful as a
4 guide as we move forward.

5 In that we used the Energy Commission's
6 fuel demand forecast; incorporated the effects of
7 Pavley regulations, the Low-Carbon Fuel Standard
8 assumptions for the reduction of vehicle miles
9 traveled per gallon.

10 The relative greenhouse gas reductions
11 evaluate potential scenarios to meet the fair
12 share reduction targets for transportation, which
13 is roughly 38 percent of the total and those
14 targets for 2020 and 2050.

15 Works backward from the 2050 Vision and
16 populates the assumptions with the CALCARS model,
17 and extrapolates the vehicle/fuel efficiencies
18 expected in 2050. I want to point out, in the
19 investment plan we mentioned specific GHG
20 reduction percentages for the different bins.

21 And I wanted to make sure that everybody
22 is aware that those are for the 2050 time frame.
23 So they are not necessarily now and they in some
24 manner may conflict with our understanding of the
25 carbon intensities of the fuels. But we are

1 assuming that in the future efficiencies, vehicle
2 fuel efficiencies will be gained. So the actual
3 carbon and GHG reduction emission benefits are
4 considerably more, considering that these vehicles
5 will be much more efficient in the future.

6 Estimates of the necessary -- We took
7 the estimates of the necessary carbon intensity of
8 the 2050 fuels. We assumed 20 percent reduction
9 in vehicle miles traveled in 2050. Which is a
10 fairly hard assumption and will be. It has been
11 one of the most difficult areas to reduce I think
12 we would all agree.

13 It establishes three vehicle and -- fuel
14 and vehicle categories. And we have named them
15 the super-ultra-low-carbon, ultra-low-carbon and
16 low-carbon.

17 And we have established a fourth, which
18 is the additional fuel economy improvements
19 category.

20 Step 2 was the Gap Analysis that I
21 mentioned that TIAX performed for us. And we did
22 a bit of a more informal Gap Analysis as well.

23 In our interaction with our stakeholders
24 we determined where the existing public and
25 private funding is in place and adequate.

1 We determined where the gaps of needed
2 funding exist in the development and deployment of
3 alternative and renewable fuels and advanced
4 vehicle technologies.

5 And we determined which identified
6 funding gaps are anticipated already and assumable
7 by industry and stakeholders, and where additional
8 funding is not needed. We have basically taken
9 the result of that analysis and that is basically
10 where we are targeting the program.

11 Those four fuel and vehicle bins are the
12 super-ultra-low-carbon needs. And in summary we
13 see areas for the Energy Commission to support,
14 our support for fleet and retail hydrogen fueling
15 facilities, support for mixed-use hydrogen fueling
16 infrastructure with transit, CNG blends with
17 hydrogen, light-duty fleets and forklift
18 operations.

19 We have taken a decidedly pragmatic
20 approach toward the hydrogen funding. You will
21 see later we are also trying to help with
22 preparing the market for retail hydrogen as well
23 and I'll go into that in a bit. But we are trying
24 to actually help this effort in hydrogen from the
25 group up, trying to foster a low-cost renewable

1 hydrogen production market.

2 Coordinate our support with the ARB's
3 AQIP program for light-, medium- and heavy-duty
4 PHEVs and BEVs in the electric drive categories.

5 And we will support early conversions of
6 PHEVs and BEVs and charging infrastructure. I
7 will point out that those early conversions,
8 either in the demonstration mode or for later
9 deployment, we understand must and will be CARB-
10 certified and only CARB-certified.

11 The ultra-low-carbon needs that we have
12 identified are to facilitate transition from
13 existing ethanol production to lower-carbon
14 feedstock production facilities. The traditional
15 corn to ethanol is the status quo at this point.
16 We would like to see a great deal of improvement
17 for that, particularly as that fuel eventually
18 makes it into the E-85 alternative fuel market.

19 Develop new ethanol, renewable diesel
20 and biomethane production for use as
21 transportation fuels.

22 Expand the installation of E-85 based on
23 geographic distribution of FFVs. And I think we
24 can be helpful with that as we are able to locate
25 where most of the FFVs are located in the state.

1 And we can do a very efficient call-out to where
2 those vehicles are and where stations could be
3 put.

4 Develop fuel storage and blending
5 terminals support for renewable diesel
6 distribution in Northern and Southern California.

7 MR. McKEEMAN: Question.

8 MR. WARD: Um-hmm.

9 MR. McKEEMAN: Jay McKeeman, California
10 Independent Oil Marketers.

11 In looking at the detail in the spending
12 plan for this item it appears that the target is
13 one blending terminal in Northern California and
14 one blending terminal in Southern California.

15 My knowledge of the fuel distribution
16 system is that it appears to me there's ample
17 private sector dollars available to work between
18 the major oil companies and the terminals, Kinder
19 Morgan or the other major terminal companies.
20 Basically it's an economic situation where if the
21 major oil companies need additional storage they
22 basically pay Kinder Morgan transportation rates
23 to take care of that investment.

24 Where I see the gap is in the
25 distributor fuel system, the smaller companies

1 that want to provide fuel blending. And there's a
2 little bit of a danger here in the sense that we
3 are taking a look at the Low-Carbon Fuel Standard.
4 And the danger is that I think there's a
5 possibility of locking out smaller firms from
6 doing fuel blending.

7 There are actually lawsuits on the East
8 coast where independents have challenged major oil
9 companies for basically that they will not provide
10 a blendable base fuel stock. They only thing that
11 they are going to provide is fuel blends. And I
12 would argue that it is important to have all
13 cylinders firing in the transition. That you want
14 the smaller companies as well as the larger
15 companies to be participating in the fuel blending
16 process.

17 And if the target of the spending is
18 just for major terminals that certainly doesn't
19 help our members and I think it provides some
20 funding that really isn't all that necessary.

21 (Whereupon, Ms. Odabashian entered
22 and joined the panel.)

23 MR. WARD: I would basically agree with
24 you, Jay. We didn't necessarily specify that it
25 would be for major terminals or major suppliers.

1 We were thinking it made prudent sense to have at
2 least one -- at least one in the north end and at
3 least one in the south.

4 We also have to be careful about how we
5 proceed because we are restricted from funding
6 obligated parties under rules and regulations and
7 ordinances in the state so the Low-Carbon Fuel
8 Standard may enter into that equation as well. So
9 we will proceed carefully. We have -- And this
10 has really been identified to us by the smaller
11 companies, not the larger ones at this point.

12 MR. McKEEMAN: Okay, I just wanted to
13 make sure you weren't suggesting --

14 MR. WARD: It's a good point.

15 MR. McKEEMAN: -- that you should give
16 some money to Kinder Morgan to help them. Because
17 I think that financial incentive is already there.

18 MR. WARD: Okay. Thanks for your
19 mention of that.

20 The low-carbon needs. We see a need to
21 provide purchase incentives for light-, medium-
22 and heavy-duty vehicles coordinated with the Air
23 Resources Board, local air districts and the
24 ports. And other entities I might add.

25 We support the development of advanced

1 medium- and heavy-duty natural gas and propane
2 engines, and fueling and fuel storage
3 technologies.

4 We support the new and refurbished
5 natural gas and propane fuel infrastructure, in
6 proximity to existing and planned vehicle fleets
7 and populations.

8 It has come to our attention as an
9 example of the refurbished natural gas
10 infrastructure is that many of the school bus
11 fleets that operated natural gas vehicles are
12 facing a dilemma at this point. Some of their
13 fueling stations have gone into disrepair and they
14 are anticipating leaving the alternative fuel to
15 go back to diesel-operated school buses and we
16 would like to avoid that as much as we can.

17 We want to help with the refurbishment
18 of those stations and investments that both the
19 Air Resources Board and the Energy Commission and
20 others have made over time. To protect those
21 investments and make them viable going forward
22 into the future as well.

23 Another issue is on some of these school
24 buses some of the storage tanks on the buses are
25 reaching their term of certification and may well

1 need to be replaced as well. So that is another
2 issue that we would like to address in maintaining
3 the existing investments that have been in
4 alternative fuels up to now.

5 The improved vehicle efficiency needs.
6 We will support development and demonstration of
7 new light-duty engine design and vehicle component
8 efficiency improvements. And support the
9 coordinated, and this is coordinated with ARB's
10 AQIP program. They have at least preliminarily
11 designated a fair amount of funding to the
12 development and demonstration of medium- and
13 heavy-duty hybrid technology with diesel and
14 alternative and renewable fuel engines as the
15 component that we would like to add to that.

16 This is at least an important first step
17 that will take place next year in ARB's AQIP
18 program. We hope to develop this as a broader
19 category to cover hybrid, hydraulic hybrids and
20 other advanced vehicle technologies as they come
21 along. This is an area that I think is one of the
22 most exciting areas that we see.

23 We see a small bit of funding can bring
24 a lot of these new technologies along. And bring
25 them through the Valley of Death, so to speak, and

1 bring them into commercialization. We want to do
2 what we can to help with bringing those along.
3 Many are, many are much lower GHG, better air
4 quality and reduce petroleum benefits, among the
5 many public benefits that these can offer.

6 These are the non-greenhouse gas funding
7 categories that we have developed. Some are in
8 statutes, some are ones that we have recognized as
9 strong needs. Our number one is the continued
10 sustainability studies and continuing the work of
11 the sustainability working group that is headed up
12 by our fantastic Jim McKinney on our staff. He
13 has been diligent in taking us, taking us through
14 that issue, which is fairly new and relatively
15 undefined. And he has put a kind face on the
16 effort and I really appreciate his work in doing
17 that.

18 Some of the work that we plan with NREL
19 may help us in continuing our sustainability
20 studies in addition to the analytical and program
21 support that NREL and others can help us with in
22 partnership.

23 Workforce training/economic development.
24 Yes, there I said it again. The economic
25 development is key, it has risen to the top. I

1 think we all can recognize the importance of that
2 now.

3 A new area is the support for standards
4 and certifications. We see needs. There are two
5 examples but I'm sure there are many more. And
6 two that I would like to mention: One is we
7 recognize the need for -- the hydrogen arena would
8 support our pragmatic approach to the hydrogen
9 infrastructure and hydrogen funding.

10 To help with the Division of Measurement
11 and Standards and the Department of Food and
12 Agriculture to help them with the type approval
13 for a retail type of a dispenser. One does not
14 exist at this point. And so it becomes a fairly
15 problematic business case to attract investment
16 into the hydrogen infrastructure business if you
17 can't sell the fuel through an approved retail
18 dispenser. We want to help with that work and we
19 have already begun discussions with them on that.

20 Another area is with the Water Resources
21 Control Board for the underground storage tank
22 issues with biodiesel and ethanol. We want to
23 help with their efforts to establish standards and
24 certifications for those storage, for those
25 storage tanks.

1 And there undoubtedly will be others
2 that we would uncover. I think this is,
3 particularly for me, I know when I worked in the
4 ethanol program these are, these are kind of key,
5 on the ground issues that are pragmatic, that are
6 important and that are essential as far as I am
7 concerned, to readying the market for alternative
8 fuels. Without them we will bump into them
9 continually and we will not take the most value
10 out of the incentives and funding that we will
11 provide.

12 MR. McKEEMAN: Comment.

13 MR. WARD: Yes.

14 MR. McKEEMAN: Jim McKeeman, California
15 Independent Oil Marketers. Appreciate the
16 recognition of this important area. We would like
17 to work with you on identifying other issues that
18 are coming up. I think you need to do a pretty
19 good Gantt chart of ideas or things that we are
20 going to need to look at. And with the
21 underground storage tank issue, we are being told
22 that we can't store biodiesel in underground
23 storage tanks right now. And that is a strong
24 disconnect from the message you are trying to use
25 for biofuels in the state.

1 So to the extent that we can identify
2 standards issues well in advance and get some --
3 And I think this is a leveraged funding
4 opportunity as well. There's private sector
5 interest in doing this as well so it is a matter
6 of just assisting with I think fairly small
7 amounts of dollars and commitment from state
8 agencies to take on these, you know, additional
9 burdens in an effective manner.

10 MR. WARD: I appreciate your willingness
11 to partner with us on that. I think your help
12 would be essential. You are the feet on the
13 ground and we want to hear from you. And as we
14 turn the page from the Investment Plan to program
15 planning we should set up meetings and try to get
16 to the bottom of all the issues that you can
17 identify for us.

18 The last two items are public education
19 and outreach. I really think that these are very
20 important for a market mechanism program. We are
21 hoping to infuse competition in California as a
22 transportation fuels market. As far as I am
23 concerned I really can't see that there is much
24 now. The consumers must be educated. These are
25 the people that will be making the decisions that

1 we -- and those that we need to provide choices
2 to.

3 Even prior to the introduction of fuels
4 and vehicle technologies I think we can prepare
5 and ready the market for those changes and the
6 infusion of competition. And I think that is
7 going to be absolutely essential. It is key
8 because the operative party is the consumer in
9 many cases. To the extent we can ready that
10 market with these two particular funding areas I
11 think we will be well-suited for rolling out new
12 technologies and fuels in the future.

13 Here are the -- Here is a table of the
14 funding recommendations that we established. I
15 apologize if it is a bit of an eye chart. It
16 looks like you can see it bigger and better than I
17 can on the screen. But this basically goes to the
18 relative GHG categories for low-carbon, ultra-low,
19 super-ultra and efficiency improvements.

20 Here is the '08/09 funding allocated and
21 guided by the relative GHG. This is the
22 percentage of the total funding for, for that
23 year. And the following for '09/10.

24 Below here we have non-GHG categories,
25 which are just basically the percentage of those

1 totals as well.

2 I don't think I mentioned in the
3 beginning that our first year allocation is \$75
4 million. That is the year we are in now. We are
5 anxious to turn the page and start the program
6 planning and solicitation. I will go through the
7 schedule for the implementation of the program at
8 the end of Tim's Presentation.

9 Next year we have a preliminary
10 allocation of \$101 million so those are the
11 numbers we have used to basically budget for the
12 next two fiscal years.

13 Any questions on that so far?

14 MS. HOLMES-GEN: I have a question. I
15 know we are -- First of all I appreciate the
16 tremendous amount of work that you have done. And
17 really this is a much more comprehensive report
18 than we certain had before.

19 I am just wondering. I know we are
20 going to get into this more later but you talked
21 about some of the over-arching priorities and the
22 need to work backward from 2050 Vision and to do
23 the back-casting, as you put it. And I just
24 wondered if you could give us a little more
25 background on how you see the back-casting

1 reflected in the funding priorities for the next
2 few years. With regard to the 2050 Vision, yes.

3 MR. WARD: Okay. We used, we were asked
4 to use the 2050 Vision to cast. It is the cast
5 out and then back-cast from there back to the
6 present. We basically tried to, as I say,
7 populate it. We had the two staff workshops in
8 September that filled out all the 42 years out to
9 2050. So that is basically the trajectory that
10 would populate in that, in the plausible scenario
11 of the 2050 Vision.

12 And then we have focused on the AB 32
13 law goal mandate, if you will, to make sure that
14 we have funding that adequately meets the time
15 frame for this program, which is seven years, to
16 the year 2020. And we want to make you mindful of
17 the trajectory that will be necessary to from
18 there on. But the existing regulation is, the law
19 is the AB 32 20 percent -- or back to 1990 levels.

20 MS. HOLMES-GEN: I guess it just seems
21 that the allocations are based more on what you
22 are projecting as data for 2020 rather than for
23 2050. That's how I understand this.

24 MR. WARD: That's correct.

25 MS. HOLMES-GEN: And then you will get

1 into more detail in the next presentation.

2 MR. WARD: Um-hmm.

3 MS. HOLMES-GEN: But I have some
4 questions and concerns about that.

5 MR. WARD: I also want to point out that
6 the precision, if you will, of this analytical
7 framework is, it may or may not be useful because
8 there may or may not be opportunities to fund with
9 the funding that would be designated by those
10 percentages. So that's something I need to point
11 out. If there are present opportunities we want
12 to take full advantage of those.

13 As I mentioned, through the attributes
14 and enhancements. We want to make sure that we,
15 that we have projects that we show either in the
16 evaluative criteria or additional funding that
17 enhance those projects that provide greater GHG
18 beyond the norm, greater air benefits, greater
19 petroleum reduction and greater use of waste
20 resources.

21 MS. HOLMES-GEN: Okay.

22 MR. WARD: That's how we would score
23 these in any bin and in any year. So that's kind
24 of a safety net, if you will. So we're hoping to
25 see the most dynamic projects come forward.

1 We actually expect that the projects
2 that are proposed will reflect these public
3 benefits to a greater degree year to year to year
4 as we go forward. Except we are focused and we
5 were totally focused on the 2020, which is AB 32
6 critical year.

7 MR. CARMICHAEL: Can I jump in on this?
8 Just one, a couple additional thoughts. Tim
9 Carmichael, Coalition for Clean Air. I think we
10 all recognize that we are not talking about a 20
11 or 30 year funding stream here. We are talking
12 about seven years and there are limits to that.

13 And we also recognize that we are going
14 to have to -- We and/or CEC staff and the
15 Commissioners are going to have the opportunity to
16 revise that over time as we learn, you know,
17 what's working, what isn't working.

18 MR. WARD: And within a fiscal year I
19 should point out.

20 MR. CARMICHAEL: Thank you. But I think
21 what Bonnie is touching on is something that I
22 know several of us on the Advisory Committee are
23 wrestling with and even feeling some tension
24 around is the balancing act between setting up an
25 investment plan that, as you just responded to

1 Bonnie, really prioritizes 2020 reductions versus
2 sowing seeds, if you will, for benefits that are
3 going to be longer term.

4 I know personally I look at the
5 Investment Plan and I have some judgments about
6 different fuels and different technologies that
7 have formed over time. In some cases I see them
8 as near or mid-term solutions, in other cases I
9 see, oh, I can see the stepping stones to 2050
10 technologies. Or at least what I project will be
11 2050 technologies.

12 I think several of us, I don't know that
13 everybody, but I think several of the Advisory
14 Committee member are wrestling with this. I just,
15 I want to call it out, emphasize Bonnie's question
16 that that's where I think we are coming from.

17 And the more CEC staff today and going
18 forward can inform us on your thinking about --
19 You have just answered very directly, 2020 is the
20 priority in the way you set this up.

21 But the more you can, if you will, give
22 us comfort or explain your thinking about where
23 the elements that you were proposing to invest in
24 or that we invest in as a state in the near-term
25 are really going to pay off in the near-term

1 versus going to pay off over the longer term.
2 And to the extent you see that you can lay out the
3 stones going forward, that would really be helpful
4 I think to a number of us.

5 MR. WARD: I would like to mention that
6 because many of the fuels in all of the bins have
7 not truly been commercialized yet they have not
8 had an opportunity to be optimized, to be improved
9 over time. And I do expect and we have already
10 seen through the docket there are many
11 improvements in each particular bin. So the bin
12 is not a ceiling for any of those fuels. In other
13 words they can go and actually jump into the next,
14 into the next higher GHG reduction bin, for
15 example.

16 One good example is natural gas vehicles
17 are a bridge technology I think to the future.
18 They are a 20 percent reduction now, which is
19 certainly I think a benefit but it can be a bridge
20 to future technologies including hydrogen and
21 others. But it can also be and there is a strong
22 movement to have biomethane replace to a large
23 extent the natural gas that is going into
24 transportation. So that one could jump from low-
25 carbon to ultra-low-carbon. I have even heard

1 from some of the proponents that that could go to
2 super-ultra-low-carbon as well. We'll hear some
3 more from other presenters today on that.

4 MR. CARMICHAEL: Thank you, that's
5 helpful.

6 MR. WARD: Yes, Roland.

7 MR. HWANG: Roland Hwang from National
8 Resources Defense Council. I'm sorry to belabor
9 this point but I think I am going to echo Bonnie
10 and Tim's concerns or issues about short-term
11 versus longer-term tradeoffs and funding
12 priorities.

13 But my questions have to do with the
14 thinking of the Energy Commission staff about
15 gearing the 118 funding specifically around 2020
16 versus say 2050. From my perspective the state of
17 California has AB 32 goals clearly spelled out for
18 2020. But it also has climate change policies
19 geared around the 2050 Vision of the 80 percent
20 reduction. So I think that there are climate
21 change policy goals which are for 2020 and for
22 2050.

23 You know, from our perspective at least
24 those two goals are equally important. You could
25 attain your 2020 goals but undercut yourselves in

1 terms of setting yourselves up for longer term
2 2050 goals. I think we all recognize AB 32 is
3 just a first step towards attaining a longer term
4 2050-type goal. AB 32 is intended to put us on
5 the trajectory to achieve 2050. So from that
6 perspective it seems to me that the 2050 goal is
7 equally as important as the 2020 goal if not more
8 important.

9 I thought I heard that you, that for the
10 Energy Commission staff 2020 is the primary goal.
11 And I just wanted to try to clarify what your
12 thinking there is. Whether that was something you
13 felt was being directed by the AB 118 statute or
14 was that a staff decision or assessment?

15 MR. WARD: Well as I mentioned before,
16 it is the, it is the goal, if you will, that is in
17 statute. It is one that we want to pay particular
18 attention to. The duration of this program is
19 seven years and I think we can have a more
20 profound effect on the 2020 goal, we reach for
21 that an exceed it. This is in combination with
22 regulations.

23 So these are benefits that we hope and
24 expect to exceed the minimal. Each one of these
25 bins is not a ceiling. We hope that they can jump

1 -- We hope that some of these fuels -- And we will
2 be basically setting that type of a reach agenda
3 in the solicitations that we, that we release.

4 As I mentioned before, in the attributes
5 and enhancements we want to state a more
6 competitive playing field for those public
7 benefits. GHG isn't a primary. So those projects
8 that have GHG reductions beyond the norm for that
9 particular category we will be favoring, either
10 through evaluative points or additional funding
11 for those projects.

12 We recognize the need to reach and have
13 continuous innovation over time and that is our
14 goal to start with. We do recognize that we do
15 need to meet 32. But that's why we went out to
16 2050, because we want to make sure that we send a
17 message to those people that are closing projects
18 that our, our focus is on 2050 as well.

19 And those, those projects that are
20 proposed to us, I think the message is starting to
21 get through to those folks that to the extent that
22 they can propose a higher GHG reduction than the
23 norm for that fuel or vehicle technology, they
24 will be benefited either in evaluation or in
25 additional funding awards.

1 I would also mention that we are also
2 mentioning this was not just a framework and
3 trajectory established by this analytical
4 framework. But we also have to pay attention to
5 those projects that are available to us for
6 funding right now. Those people that have
7 proposed projects. That we have a very extensive
8 docket. We are meshing the two. But
9 coincidentally we have many more opportunities
10 that have presented in some categories than in
11 others.

12 So we are trying to do this balancing
13 act. We are mindful though that the climate
14 change potential is one that can doom our entire
15 way of life and, and our planet. So it is not
16 off, off the page for us, it is certainly foremost
17 in our mind. I don't think there is any more dire
18 concern for us at this point. And when we state
19 that we really do mean that in the Investment
20 Plan.

21 PRESIDING MEMBER BOYD: I want to --
22 Peter has made his case, we have heard the issue
23 from several folks. I want to suggest we move on
24 and then we will return to this even more during
25 the stakeholder and public comment period. Really

1 during the Advisory Committee comments and what
2 have you. I think some points have been very well
3 made.

4 I want to do a couple of housekeeping
5 things here that I didn't do at the beginning as
6 we transition over to Tim and let Tim maybe finish
7 that part of the discussion.

8 First, I have been advised that two more
9 Advisory Committee members have joined us who had
10 a little bit of difficulty. Jim Sweeney of
11 Stanford and Patty Monahan of Union of Concerned
12 Scientists. Am I correct that the two of you are
13 out there?

14 MR. SWEENEY: Yes, Jim Sweeney. And I'm
15 here listening after I finally figured out how to
16 get on the Web-Ex.

17 PRESIDING MEMBER BOYD: Sorry about that
18 Jim. Patty?

19 MS. MONAHAN: Yes, this is Patty, I'm
20 also on. Thanks to all who helped.

21 PRESIDING MEMBER BOYD: Did any other
22 Advisory Committee members who didn't get to
23 introduce themselves before happen to join in?

24 MR. COOPER: Yes, this is Peter Cooper
25 from the California Labor Foundation.

1 PRESIDING MEMBER BOYD: Thank you.

2 MS. ODABASHIAN: And I came late. Elisa
3 Odabashian from Consumers Union.

4 PRESIDING MEMBER BOYD: Thank you, thank
5 you. Okay, the other -- Now that the room
6 temperature has gotten to the point where my brain
7 functions totally properly I want to talk about
8 process here a little bit here just before Tim
9 starts.

10 What you are hearing today is the
11 staff's presentation of their herculean efforts to
12 date in their interpretation of what they have
13 heard all along. We, Commissioner Douglas and I
14 and the Committee, are sitting here like the rest
15 of you listening to all of this. We may have had
16 a slight advantage over some of you of having seen
17 some of this paper in various forms earlier on.

18 But nonetheless what we are here to do
19 today is to listen to the staff presentation,
20 listen to the exchange of questions and concerns,
21 before we ultimately formulate what will be our
22 committee recommendation to our Commission as a
23 whole. So we very much appreciate the discussion
24 that we have heard today.

25 Quite frankly we have been tempted to

1 jump in a couple of times. But my fear is, that I
2 have learned from all the years I have been here,
3 is when you jump in and say something or try to
4 throw a life ring to somebody you sound like you
5 are trying to defend a particular position. And
6 since we are here adjudicating and listening we
7 are just going to let you all sink or swim on your
8 own and take it into account.

9 MR. WARD: Thank you, Commissioner.

10 (Laughter)

11 PRESIDING MEMBER BOYD: With that, just
12 to let you know that this is not a tablet of stone
13 that we are looking to rubber stamp. This has
14 been a very difficult task for the staff as we sat
15 and watched.

16 And I appreciate the demeanor in which
17 this dialogue is taking place and we do appreciate
18 the exchange. I guess the one thing we are really
19 in trouble on is time here so I'll shut up and let
20 Tim present and then we'll get to additional
21 discussion.

22 One last housekeeping comment. On the
23 agenda the fourth item is Stakeholder
24 Presentations and Public Comment. We here at the
25 Commission use a blue card process in order to

1 identify who would like to speak to us during
2 public comment or stakeholder presentation
3 periods. Learned people have already sent up blue
4 cards.

5 But any of you in the audience who wish
6 to during that period of the agenda, say
7 something, we invite you to do that but would you
8 find a blue card out on the table in the lobby
9 area and fill it out and see that one of the staff
10 members hanging around on the edges gets it and
11 can bring it up to us. And that will facilitate a
12 more quick identification of who wants to speak
13 and move us through that process.

14 After that the Advisory Committee
15 members are free, of course, to dialogue at will
16 as we sit and soak up things. So with that, Tim,
17 I think it's your time.

18 MR. WARD: Thank you, Commissioner. I
19 just want to reiterate we do welcome your
20 comments, we will take them to heart, we are
21 interested in this. It is probably one of the
22 most important things that the Commission has done
23 from my perspective and probably one of the most
24 important things that I have seen going forward in
25 the world actually. I think this could have

1 landmark effects not only in our state but other
2 states, the nation and the world as well. The
3 world is watching, as I say, and we want to take
4 your comments to heart.

5 Okay, I wanted to introduce Tim Olson
6 who has worked long and hard to come up with the
7 funding recommendations, proposed funding
8 recommendations for AB 118. Tim.

9 MR. OLSON: Thank you, Peter.
10 Commissioners, Advisory Committee members, I would
11 like to kind of walk through a section in this
12 Investment Plan that we refer to as the funding --
13 the recommended funding allocation, the funding
14 recommendation and try to address as we go through
15 this some of those connections to the 2020, 2050,
16 how we think that might work.

17 I am just going to briefly reiterate
18 some of the kind of key factors here and go back
19 and touch on this connection to the 2020 time
20 frame, what we call the fair share of achieving
21 those greenhouse gas emission reductions. That's
22 one of the key priority factors.

23 Remember that the 2050 Vision was
24 created out of the Alternatives Fuel Plan. If you
25 go back to that plan of 2007 it has a very direct

1 connection to 2007, 2012, 2017, 2022, 2030. We
2 went through a series of plausible scenarios,
3 interactions. Not just kind of our own models,
4 our own work internally but ground truth with over
5 100 different entities in that 18 month process we
6 went through to do that.

7 So 2020. And maybe one way to look at
8 it is 2020 is really a foundation of growth of
9 these alternative fuels to reach the 2050. You've
10 got to go through 2020 to get to the 2050
11 objectives and those outcomes. And 2050 also we
12 looked at as ideal conditions, ideal
13 circumstances.

14 It also means that where you get the
15 most greenhouse gas emission reductions from about
16 2025 on from all that analysis is really massive
17 numbers of vehicles converting from gasoline and
18 diesel to electric, hydrogen and other alternative
19 fuels and that the fuel economy is improving
20 drastically. It is very difficult to bring all
21 that 2050 result to today without going through
22 some of these early steps and we are going to try
23 show them.

24 So that is our main driving factor here
25 is how do you get those greenhouse gas emission

1 reductions and trying to match that ideal future
2 to what is the practicality of getting to that
3 point step by step. And when we started out on
4 this we were looking for, what can we do. Asking
5 this question of the people we talked to. What
6 can we do to bring that 2050 as early as possible?
7 And we think we are trying to get as close to that
8 as possible but there are a lot of transitions, a
9 lot of steps we have to go through to get to that
10 point.

11 The second factor that we also looked at
12 is this -- We'd like to -- If we are going to have
13 this change in the fuel system, the number of
14 vehicles, the type of -- How we deal with
15 transportation in a pretty challenging change over
16 time, and we do this in a way that improves
17 economic development, we are going to have to see
18 more development of those projects in California.
19 Meaning the fuel production facilities,
20 manufacturing plants, that's another challenge.
21 And we are trying to address that in this first
22 couple of years and probably will be a theme in
23 future years as we go through these other
24 investment plans.

25 Just again pointing out the practical

1 near-term. What can we do in the near-term to
2 accomplish that 2050 objective. If 2020 is a
3 near-term foundation that we think will -- If we
4 go to where we are in 2020 and what we described
5 in Malachi's work and Gerry Bemis's work then we
6 are going to be on a very good pathway to reach
7 the 2050. Very challenging in 80 percent below
8 1990 levels. So we are emphasizing as many
9 practical near-term things that maximize getting
10 greenhouse gas emission reductions at the earliest
11 point in time.

12 Some of those other factors we looked
13 at. What's the government roles in trying to make
14 this happen? And of course providing funding is a
15 key part. That's the thrust of all this money, of
16 all this program. However we think we can combine
17 that. You'll see it doesn't really show up in the
18 tables, the funding tables, but we think we can
19 combine that with some technical troubleshooting
20 as new projects come on-line. Every new project
21 is going to have some kind of problems. We are
22 expecting to have troubleshooting attached to
23 that.

24 We think that \$176 million for the first
25 couple of years seems like a lot of money. And if

1 you add it up it's a billion dollars over seven
2 and a half years. We are also estimating we need
3 a \$100 billion market investment. So we are
4 looking at how do we leverage our small amounts of
5 money and attract other capital. And we think we
6 are going to be in the business of not only
7 providing funding but the facility to where that
8 other funding might come from.

9 We also know that a key part of the
10 decision-making, the criteria, is centered around
11 the Full Fuel Cycle Analysis. We are upgrading
12 our work effort there and our capabilities to
13 provide that not only analytical development but
14 also the ability to apply that at various levels.

15 We quite often get comments right now
16 from fleet managers saying the county government
17 has just told us to green our fleet and to use the
18 Full Fuel Cycle Analysis as the methodology unit.
19 What is that and where's the easy way for me to
20 understand how to do that? There is no easy way
21 right now and that could be one of these workforce
22 training challenges that we use. So we are
23 attaching a lot of our additional staff skills and
24 some contract skills to augment how we spend this
25 money.

1 I just want to summarize just quickly
2 the -- When you step back and take a look where we
3 are allocating the money it is really on these
4 four major areas, vehicle component development.
5 Whether it's deployment or development work.
6 Development of the fuel infrastructure if it's
7 needed attached to that vehicle rollout. Some
8 additional fuel production, preferably in
9 California. Manufacturing incentives to locate
10 plants here. And the whole range of workforce
11 training and education outreach.

12 The legislation describes it that way.
13 The legislation also requests that we focus on
14 deployment for the most part. That we can look at
15 things that are in the whole range of research,
16 deployment and development. And we are going to
17 have proposals I think in all of these areas.

18 How do we -- How were the
19 recommendations developed? There is no secret
20 model in the back room that spits out the analysis
21 and says -- It's taking all of the scenario
22 analyses into account. It takes the Gap Analysis
23 done by TIAX into account and for a large part is
24 based on over 100 meetings with entities that have
25 told us and verified that they have real projects

1 ready to go within the next few years. So you are
2 going to see that as we go through each step by
3 step.

4 That Gap Analysis gave us a pretty good
5 picture of what's going on nationally, a little
6 bit internationally on government funding, private
7 sector investment. It was done late summer. A
8 lot of changes have occurred in the financial
9 market since.

10 One of the criticisms of the analysis is
11 it's still kind of shallow on what is the
12 relevance of all that to California. And you'll
13 see in areas that one of the findings of that Gap
14 Analysis is \$23 billion has been spent by the
15 federal government on biofuel production
16 incentives. How much of it really came to
17 California in terms of where projects are and
18 advances in technology. Not much.

19 A large part of that Gap Analysis refers
20 to other funding programs, primarily from the
21 state level. The Air Resources Board, Prop 1B,
22 the Carl Moyer school bus programs. And we are
23 trying to factor that in. We factor that in in
24 our analysis, where not to spend money, where they
25 are putting money in certain places. Their

1 existing AQIP program, their AQIP program.

2 We have frequent meetings with the Air
3 Board staff and we will continue to do that to
4 come to conclusions about how we, how we
5 coordinate our funding. We have some common
6 interests. We have some common interests in
7 implementing programs where we have joint
8 activities.

9 Just to touch on the informal
10 discussions. This goes back six months. A lot of
11 the recent meetings. We had to repeat a lot of
12 recent meetings with financial institutions,
13 primarily because of the down-turned economy and
14 what has happened in just the last couple of
15 months. Who is willing to invest in projects.
16 There's a lot of change going on and this state
17 funding is more critical now than probably five
18 months ago in terms of meeting these objectives.
19 This is a list of kind of summarizing those
20 categories.

21 What I would like to do now is kind of
22 now walk through each of the, each of the areas on
23 the recommended, recommendation table, starting
24 with the electric drive. What I have done is try
25 to in that table go one by one. In many cases I

1 consolidated several things into one bullet here.
2 If you have questions I'll show you how I, how I
3 did that.

4 What we are seeing with electric drive
5 for light-duty, medium-duty and heavy-duty that
6 there's a need for two types of funding. One for
7 deployment in the form of rebates, grants,
8 whatever you want to call it. Vehicles that are
9 ready to go with relatively mass numbers. Mass
10 numbers are hundreds and above, not ones and twos.

11 So there's a -- We kind of divided this
12 by you've got a deployment rebate type of thing.
13 What's the rationale for that? There is a
14 differential cost between the alternative fuel
15 vehicle and a gasoline and diesel vehicle that we
16 can calculate and it is in an affordable work
17 range for us. It is really kind of a pre-mass
18 market but vehicles are ready to go in the time
19 frame that we are talking about.

20 And also to repeat, the time frame is
21 from now to June 30, 2010. That's what we are
22 looking at in terms of how we are spending this
23 money. On July 1, 2010 the beginning of another
24 \$120 million starts rolling in. Excuse me. I'm
25 trying to recover from a two week cold that's not

1 doing well. Thank you.

2 So in this area what we are thinking is,
3 based on comments from auto makers, utilities,
4 looking at the ZEV mandate targets, looking at
5 reports and meeting with people who did, for
6 example, the Bernstein Analysis, EPRI Analysis.
7 What kind of -- Comparing our market penetration
8 analysis with other parties and other regulatory
9 factors. What really could happen in this area in
10 that short time frame, which will be for us maybe
11 about 15, 16 months.

12 And we think that in addition to OEM and
13 upfitting for electric drive that we could be in
14 the range of maybe at the maximum end of 1,000 to
15 1,500 vehicles. And if we are providing a, if we
16 are providing a vehicle rebate the CARB staff is
17 estimating they think that might be \$5,000. We
18 think it is going to vary by vehicle model. So
19 this is for light-duty, light-duty vehicles. We
20 think that is going to define what the practical
21 introduction of those vehicles in the marketplace
22 is. So you do the math and it comes out to maybe
23 four or five million dollars.

24 We think in the heavy-duty area, medium-
25 duty, that these new technologies in electric

1 drive, the hydraulic hybrid, the hybrid truck,
2 medium-duty, heavy-duty, the market really can
3 absorb about 1700 new vehicles a year. The cost,
4 differential cost ranges. What's in the
5 marketplace now? Well there are some hybrids.
6 There's the beginning of the hydraulic hybrid
7 parallel series.

8 A lot of the feedback we are getting is
9 what is the production potential from engine
10 manufacturers, truck chassis people. It's about
11 1700 a year. And that's if there are -- And
12 that's for the first three, four or five years.
13 And that's if incentives are there to cover the
14 differential costs.

15 When I mention differential costs we are
16 also factoring in what's available from the
17 federal government for tax credits, subsidies.
18 Then we calculate from there what's the additional
19 differential. The while point is trying to make
20 the vehicle at parity with the gasoline or diesel
21 costs.

22 There's a demand, there may be a greater
23 demand than supply capability. There are quite a
24 few local governments, air districts, that are
25 interested in these new technologies. In fact

1 with light duty we had several counties saying
2 that if they -- they would order the PHEV today if
3 it was available. But if they have a Prius is it
4 eligible to be converted to a plug-in hybrid. We
5 think that should be eligible.

6 MR. EMMETT: May I ask a clarifying
7 question?

8 MR. OLSON: Sure.

9 MR. EMMETT: I'm sorry, this is Daniel
10 Emmett. The incremental costs you're referring
11 to, the 5,000 estimated. Do you have a -- Is that
12 a combined number for plug-ins that are EVs or is
13 there a distinction there? It seems to me there
14 probably should be.

15 MR. OLSON: That's a number that the Air
16 Board has come up with as an average. We are not
17 sure we are going to use that. We think it might
18 have to be negotiated and might differ by vehicle
19 models. And by the way, part of the negotiation
20 is what are the automakers for these early
21 options, what are the automakers willing to do to
22 offset, to absorb some of that differential cost
23 themselves. That is a negotiation we think.

24 MR. SWEENEY: This is Jim Sweeney
25 speaking. Have you been working at all with the

1 people from Project Better Place? At least in
2 what they articulate publicly, they believe that
3 the system they are setting up that will involve
4 fully electric vehicles, shorter range, a lot of
5 recharging stations and the ability to swap out
6 batteries, actually can get to be relatively
7 competitive with conventional vehicles once they
8 get a system in place. Is that -- Rather than
9 subsidizing and creating the technology themselves
10 have you thought of a strategy that works with an
11 organization such as Better Place?

12 MR. OLSON: Thanks, Jim, for that
13 comment. I haven't gotten to that point in my
14 presentation. But we think that it is a combined
15 number of things. Remember, this is still infant
16 stage technology and we think combined incentives
17 are going to be needed. Not only with vehicle
18 buy-down but also in the infrastructure
19 development. And I agree, there is a definite
20 competition that could occur here.

21 Let me just summarize just briefly in
22 the heavy-duty. We also think that there are
23 several applications that we would like to see
24 these hybrid electric technology go into. And
25 these application markets are responding, the

1 refuse industry, the transit, school bus, utility,
2 package delivery. These are highlighted areas.
3 There are in some cases formal or informal work
4 groups set up. People are positioned to go into
5 this. There appears to be more traction and more
6 potential to move more quickly in the medium-duty,
7 heavy-duty area than we think in the light-duty.

8 I want to go to the next slide just to
9 address what Jim Sweeney had raised here about the
10 public access. We think that this trend of
11 getting new vehicles in the marketplace also will
12 need fuel and infrastructure, in this case charge/
13 recharge infrastructure. It could be -- And we
14 are not defining that in a lot of detail.

15 It could be the kind of idea that Better
16 Place raises, which is a battery change-out type
17 of installation, it could be a fast charge
18 installation, it could be a whole range of
19 different things. It could be municipally owned,
20 it could be private.

21 We think that some of this deserves some
22 subsidy. The costs of this are not really
23 extraordinary. We are estimating in this area
24 that we could, we could spend an affordable amount
25 of money and get 100 to 250 installations

1 established in this time frame. And there's, as
2 Jim Sweeney has pointed out, there's competition
3 for this. There's not a lot of capital
4 investment. There might have been six months ago.
5 That's drained away from venture capital.

6 We also think that this next area, the
7 non-road or off-road, that there are quite a few.
8 Even though there might be ones and twos, tens,
9 not thousands, hundreds of thousands, there are
10 applications here that have some near-term
11 benefit. They may be considered small niches but
12 in essence we are looking for as many greenhouse
13 gas emissions in any place.

14 We think that with the funding we are
15 suggesting here you can achieve anywhere close to
16 500 truck refrigeration unit conversions, about 50
17 truck stop electrification projects, and probably
18 a handful, maybe four or five cold ironing. Now
19 some of this is, well, aren't regulations
20 requiring some of this? This would all be early
21 action or surplus in addition to those regulations
22 or time frames of those regulations.

23 We also know that the Air Resources
24 Board has an interest not only in the light-duty/
25 medium-duty rollout of vehicles but some interest

1 in this area in the demonstrations. So we are
2 exploring with them how we manage that. We are
3 not going to have two separate programs. We will
4 have one program for the state of California. We
5 will work out how we manage those details.

6 We also think in this area, well gee,
7 some of these projects will be a lot of money. We
8 think some of these, some of these projects are
9 pretty close to commercialization. They may be
10 suited for loans or loan guarantees if we want to
11 explore them. We have the capability internally
12 to do that. We think there is a potential
13 leveraging of eight to one or ten to one through
14 our loan guarantee, two loan guarantee systems in
15 the state of California and we will explore them.

16 PRESIDING MEMBER BOYD: Tim, could I ask
17 you a question?

18 MR. OLSON: Sure.

19 PRESIDING MEMBER BOYD: My understanding
20 is you have met with Project Better Place and you
21 are aware of that project.

22 MR. OLSON: Yes. We have met at least
23 half a dozen --

24 PRESIDING MEMBER BOYD: At least for
25 Jim's sake, Jim Sweeney's sake, acknowledge that

1 we are aware of it and the staff has met with
2 those folks.

3 MR. OLSON: I would say there are at
4 least a half dozen entities that have proposed
5 something very similar, different business models.
6 We think there's room for all of them. And we
7 also know that they have talked to buyers of
8 vehicles on co-locating infrastructure, either
9 fueling infrastructure owners or local governments
10 or fleets that are definitely interested in this
11 too.

12 MR. SWEENEY: This is Jim Sweeney. I
13 appreciate you doing that because one of the
14 things we have got to be somewhat careful about as
15 you are going through and funding public charging
16 stations, that you don't, you aren't creating a de
17 facto standard on how public charging goes about.
18 Whether you have just recharging versus battery
19 swap-out stations. So that you don't
20 inadvertently create a de facto standard which
21 squeezes out some other more promising
22 technologies. That's just an issue that you have
23 got to just be sensitive to, which I am sure you
24 will be.

25 MR. OLSON: And revisit that every year

1 we are doing this Investment Plan.

2 MR. SWEENEY: Here here.

3 MR. OLSON: So going back to this
4 question about how is this connected to the 2050
5 Vision? All of these projects definitely are a
6 part of that 2050 Vision and electric drive. You
7 are going to get at least with the hydraulic
8 hybrid trucks at least a 30 percent efficiency
9 improvement.

10 And by the way, there's some additional
11 demo work, demonstration development going beyond
12 just the hydraulic parallel with the series
13 technology, the electrifying accessories on
14 trucks. The hybrid version of that, the battery.
15 There's a sequence over time. Each step gives you
16 an additional efficiency improvement. You are not
17 going to get -- And that's kind of the ultimate
18 where you are at 2050. You have got to go through
19 those stages to get to that point.

20 And some would be, what can we do to
21 accelerate it? We're asking that question, what
22 can we do to leapfrog some of these areas? We
23 think there are going to be some parallel things
24 going on, some mergers and some technology
25 advances and we think there's room for all of

1 them.

2 The hydrogen area I want to just --

3 MS. HOLMES-GEN: May I ask a quick
4 question?

5 MR. OLSON: Sure.

6 MS. HOLMES-GEN: Bonnie Holmes-Gen. I'm
7 just curious. On the electric drive I didn't see
8 that you included recommendations for funding
9 electric drive technology development just battery
10 development and I was curious why?

11 MR. OLSON: That's a mistake if that's
12 what it says. It is, it is not only -- It is
13 technology development. There's also another
14 category for vehicle technology efficiency where
15 electric drive shows up again and that's a later
16 slide. It covers the whole range of components,
17 engines, batteries. We are very flexible, we are
18 open to lots of things. We just need to have
19 people show that it can make a difference and
20 there is some improvement.

21 So I would like to go back to, continue
22 on with hydrogen. And I guess the --

23 PRESIDING MEMBER BOYD: Smartly, Tim.

24 MR. OLSON: Smartly. I think the thing
25 we want to make a point here is we are not

1 proposing to cover vehicle rebates from the Energy
2 Commission. This is an area that we are -- in
3 essence the Air Resources Board said this is an
4 area they want to concentrate on. If they have
5 more demand we are open to back-filling that
6 demand with our incentive money. But for the most
7 part we are not spelling that out particularly on
8 hydrogen.

9 What we are willing to do is focus on in
10 hydrogen is the fueling infrastructure. This is
11 the feedback we had from several entities,
12 including looking at the ZEV mandate. Also the
13 Fuel Cell Partnership. Interviews with virtually
14 every automaker, interviews with every major
15 energy company and quite a few small, new
16 companies that produce hydrogen.

17 And what we have concluded is this: We
18 think we set aside money. We think we can fund
19 two different types of fueling infrastructure.
20 One designed mainly for the OEM kind of retail
21 experience. And we also want to introduce a new
22 idea and that's multiple uses combining multiple
23 users and mixed use into individual sites and
24 locating those sites where it makes sense.

25 And those mixed and multiple uses could

1 include what might be off-road. The kind of
2 forklift, big box distribution centers where we
3 think hydrogen makes the most economic sense now.
4 We would like to see whether we can combine that
5 with some of the OEM uses and things like transit.
6 In essence get the most through-put and the most
7 greenhouse gas emissions for the amount of money
8 we are spending on the station. We think there
9 are locations where that makes sense.

10 And we think we could be in the range in
11 Southern California with this funding of eight to
12 ten of those stations in this round of funding.
13 They are not going to be \$5 million stations.
14 They are going to be more portable, looking at
15 appropriate design and appeal to the users and
16 locations where the users -- For the most part
17 these are going to be the more affordable, able to
18 move to other locations if needed fueling systems.

19 MR. EMMETT: Question again.

20 MR. OLSON: Yes.

21 MR. EMMETT: This is Daniel Emmett. So
22 is this another area where you will be working
23 with the Air Resources Board? Because this is
24 very similar to what they have doing and honing
25 for the last few years, the Air Board staff on the

1 Hydrogen Highway deployment of stations.

2 MR. OLSON: Yes, yes.

3 MR. EMMETT: Is this a different process
4 or the same process?

5 MR. OLSON: Well as maybe some of you
6 don't know the Air Resources Board in their part
7 of AB 118 is restricted or cannot fund this kind
8 of infrastructure. Historically they conducted
9 those programs. And from what I understand their
10 last amount of money for that program was just
11 recently put out as an RFP.

12 So in essence we think we are going to
13 see a shift over to the Energy Commission as the
14 funding source. We definitely want to take
15 advantage of the knowledge and all the background
16 the Air Board staff has in this area and they are
17 part of our strategy team in deciding those
18 locations.

19 MR. McKEEMAN: Comment, Jay McKeeman,
20 California Independent Oil Marketers Association.
21 Especially for fleet fueling you might want to
22 take a look at independent fuel distributors
23 because that's our business. We have had some
24 discussions with people about basically the
25 portable fueling stations and they certainly fit

1 in a, in a bulk plant/card lock kind of scenario.
2 So I would be interested in talking with you
3 further about that.

4 MR. OLSON: Appreciate your interest.
5 We have talked to some of your members already. I
6 think it would be good to elevate that.

7 In addition to that we are interested in
8 supporting the cost of the codevelopment of these
9 facilities that can produce the renewable sources
10 of hydrogen and there are quite a few proposal
11 ideas come to us. Feedstocks, biomethane, a
12 wastewater treatment facility, biogas. And some
13 of these are not farfetched. They are some good
14 ideas that help us achieve this requirement, state
15 requirement that people don't know. Thirty-three
16 percent of hydrogen fuel that the state of
17 California funds in its infrastructure, 33 percent
18 has to be a renewable source.

19 So this is an area where -- Bonnie, you
20 asked this question, what can you bring forward to
21 2050. This is definitely one of those areas that
22 we would want to fund and that we think could,
23 could accelerate this potential.

24 In addition we think there is some R&D
25 work, research on various component parts. And we

1 had a couple of different meetings on very-near-
2 term, getting some of the component costs down
3 from \$100,000 to \$10,000 with some improved
4 performance. We need some verification tests,
5 some performance tests. We think these are not
6 real high-cost things. We think we can break down
7 a project and see where we can make improvements.

8 MS. SHARPLESS: May I ask a question?

9 MR. OLSON: Yes.

10 MS. SHARPLESS: While you are talking it
11 occurs to me that it is going to be a little bit
12 difficult but maybe you will figure this out.
13 Where the line between research and the line
14 between deployment is going to be drawn. In some
15 of these cases it does sound sort of like research
16 and development that you are suggesting, and it
17 was my understanding that AB 118 was directed more
18 toward deployment and commercialization of things
19 that could take off.

20 MR. OLSON: Right.

21 MS. SHARPLESS: Could you elaborate on
22 how you are going to make those kinds of judgment
23 calls.

24 MR. OLSON: That's a good question and
25 it needs to be looked at annually. Maybe even

1 more frequently than that because there are some
2 breakthroughs that are occurring that change the
3 trends and the nature of the technology.

4 For the most part if you kind of
5 generalize, we are not likely to be involved in a
6 lot of basic research. But we are going to be
7 involved in some of the application research and
8 we are going to be involved in demonstrations. So
9 a demonstration would be, you have got a prototype
10 that's developed, that's worked on the road. Now
11 it really needs to be demonstrated in the various
12 market applications.

13 So in the electric drive hydraulic
14 technology, hydraulic diesel electric parallel
15 projects are ready to go into a near-term, early
16 mass production. They have been proven at various
17 sectors like refuse truck, proof of concept,
18 package delivery, utility bucket trucks, transit.
19 It needs some deployment money, differential cost
20 money to get into assembly line production where
21 you are going to get cost reductions in the three
22 to five year time frame. And they are going to
23 compete better in the marketplace with just a
24 diesel, a diesel vehicle alone.

25 Some of these other areas like series

1 hybrid accessorize -- electrify the accessories on
2 trucks. Plug-in hybrid trucks, battery electric
3 trucks in some cases haven't gone entirely through
4 that prototype stage or they are at the point of
5 needing to have proof of concept in these
6 different market applications.

7 So is that research? It is really kind
8 of a demonstration of something that is already
9 proven. But the utility companies want to see
10 them in operation. They don't want thousands all
11 at once, they want one or two. And so the concept
12 is there to early market. The ones and twos for
13 each market application, once proven, then can go
14 into the hundreds of thousands. And the beauty of
15 these medium-duty, heavy-duty areas, you don't
16 need millions of vehicles. The markets tend to
17 be, like I said, 1700 turnovers per year for a new
18 technology. And you can quickly get some advances
19 into those sectors.

20 MS. SHARPLESS: So you see this issue
21 coming more to the surface in the medium- and
22 heavy- than you do in the light-duty?

23 MR. OLSON: In the near-term yes, yes.
24 With the light-duty there are other factors
25 involved and they have to do with behavior and why

1 people buy vehicles. Whereas the medium-duty and
2 heavy-duty it tends to be what is the function
3 for. Does this vehicle meet my function and what
4 is the bottom line cost.

5 MS. SHARPLESS: And the PIER
6 transportation program is also dealing with
7 similar issues?

8 MR. OLSON: Dealing with similar issues
9 and probably -- We haven't decided internally but
10 we may be directing some of our money into their
11 programs or CARB's programs or others if we think
12 they have better capability to manage it and get
13 the results. So this has to be revisited often to
14 know where we are in that market jump-off point.
15 If the advances don't occur in the time frame
16 expected then we are going to have to adjust for
17 it.

18 Okay, so I think that covers what we
19 wanted to discuss on hydrogen. On biofuels --

20 MR. CARMICHAEL: Tim.

21 MR. OLSON: Yes.

22 MR. CARMICHAEL: A quick question.
23 Again, you are still focusing on the time frame
24 2009, 2010.

25 MR. OLSON: Right.

1 MR. CARMICHAEL: So when you say eight
2 to ten stations in Southern California, it's in
3 that time frame?

4 MR. OLSON: Yes.

5 MR. CARMICHAEL: Thank you.

6 MR. OLSON: Now will all those be
7 constructed? No, that's when the money flows.
8 And there are some permit time frames and other
9 things in there too.

10 MR. CARMICHAEL: Okay.

11 PRESIDING MEMBER BOYD: A quick comment.
12 I want to encourage -- We're running long here but
13 I am seeing the value of having these questions
14 occur during the discussion so this is really kind
15 of a combination of Advisory Committee comments
16 and what have you. So I advise you to jump in now
17 and at the end later on that's kind of your over-
18 arching, concluding views or something. But get
19 into the particular issues as they come along now
20 rather than save them, they'll slip away as the
21 time -- Of course your memories may be better than
22 mine.

23 MR. OLSON: For biofuels we have a
24 couple of things. Biofuel production is an area
25 that we think we would like to spend some money on

1 as the biofuel E-85 infrastructure. Going back
2 to, I can't remember whose comment it might have
3 been originally. The biodiesel terminal, the
4 blending terminals.

5 So this first bullet here, if you are
6 trying to find it in the report, I combined
7 several of the production things into one bullet.
8 In essence we are looking at, should we provide
9 funding? And we are recommending to the
10 Commissioners that we should provide some money
11 for production facilities.

12 And covering some areas that are
13 described here. How do you shift transition from
14 the corn to lower GHG feedstocks. How do you get
15 more waste stream feedstocks into the marketplace.
16 And biomethane, biogas. And then with -- So this
17 covers both biodiesel, renewable diesel and the
18 biofuels.

19 The question is, these projects, they
20 could be \$50 million, \$100 million, \$200 million
21 projects. What is our money going to do in this
22 area? I am suggesting, Commissioners, that we
23 look at this from a -- you break these projects
24 into stages and you look at what is the
25 appropriate role for us in the various stages.

1 What is the riskiest stage? It is
2 really the earliest. It also tends to be the
3 cheapest amount of money that goes in, the
4 smallest amount of money that goes in.

5 What are those key things? It's really
6 the feasibility. Is this really going to be
7 feasible. This feedstock, this configuration.
8 I'm thinking of doing not only an ethanol project
9 but also a power production with it. We think
10 this is an area worth spending money on from a
11 feasibility standpoint.

12 What is the technical, economic, and
13 probably as important as the other two, what is
14 the environmental impact of this project. From
15 not just a CEQA standpoint but from the Full Fuel
16 Cycle pathway and how does it, how does it stack
17 up. Does it meet our sustainability criteria.

18 And why am I also suggesting this? This
19 is what financial institutions are asking for
20 right now too. And so I think there's a definite
21 role to kind of break these projects down.

22 Now there's also another stage where I
23 think this goes out after that. That stage may be
24 in six months to a year. There's another stage
25 that's after that and it's really this kind of

1 construction stage. We have to decide whether our
2 amounts of money can make a difference. I think
3 they will make -- I think the cash grant or cost-
4 sharing, even if it is a million, two million,
5 three million dollars, could be effective, even
6 for these bigger projects.

7 I think it could be even more effective
8 if we, if we can create a debt financing pool from
9 those, those equity sources, either directly from
10 this agency or through the state treasurer's
11 office with loan guarantees or possibly an
12 infrastructure bank. The issue will be how timely
13 is that process to get that money available.

14 One of the reasons I am recommending
15 this is this entire debt market has dried up for
16 private funding. And that we think government
17 money can help jump start this again and stimulate
18 bigger -- offset the risk so that private merchant
19 banks and commercial banks will make these
20 investments. There's a lot of facilitation and
21 coordination in that process and it will involve
22 at least one other government agency. It's an
23 area where if we want to go into this area that's
24 the way I'd approach it.

25 With that said, to meet the goals that

1 -- If you want to see these projects, you want to
2 see the ethanol and the biofuels produced in the
3 state we are going to need 30 to 60 plants to
4 provide what we propose in our scenarios,
5 otherwise it is going to be imported. And we know
6 that the more you build the plants in-state the
7 bigger the economic benefits. But there are also
8 challenges possibly with the environmental CEQA.
9 And we think that with this funding we have here
10 we can stimulate, at least the early stages of
11 five to six projects.

12 MR. SHEARS: Tim.

13 MR. OLSON: There's a question I think.

14 MR. SHEARS: Tim, John Shears with CEERT
15 on the Advisory Committee.

16 I just want to clarify that when you are
17 talking about transitioning from traditional corn
18 feedstocks over to the more dense feedstocks that
19 we are not actually talking about facilities that
20 currently process corn for ethanol.

21 (Whereupon, Mr. McKeeman exited the
22 meeting room.)

23 MR. SHEARS: Because the engineering, my
24 understanding is from talking to engineers that
25 help develop these projects, is a completely

1 different engineering scenario and it is not
2 really feasible to retrofit, you know, to totally
3 retrofit. So when you are using transitioning you
4 are just talking sort of the path to new
5 facilities that are, you know, second and third
6 generation or advanced biofuels facilities.

7 MR. OLSON: Well I generally agree with
8 you but I'd like to see what's out there and
9 whether there are proposals that can do that. And
10 if it means you can take an existing facility and
11 reduce the environmental footprint through either
12 added on technology or -- and it is shifting use
13 to develop other feedstocks.

14 MR. SHEARS: Yes. I just wanted to
15 qualify because the engineers I talk to that are
16 involved in the world of these projects, it seems
17 to be a misunderstanding about how easy that is.

18 The other thing is I just wanted to take
19 the opportunity to put in a plug for the January
20 13 workshop, the IEPR-Joint Transportation
21 Committee workshop. Where it might be a good
22 opportunity to not only talk about the potential
23 for meeting the bio-action plan targets but also
24 delve into some of these issues that you raised in
25 terms of the financing environment, et cetera.

1 PRESIDING MEMBER BOYD: Thank you for
2 the plug.

3 MR. CARMICHAEL: Tim, another point. I
4 appreciate your comments acknowledging that there
5 are going to be needs throughout the fuel sector
6 where CEC is going to conclude it is not the best
7 use of the funding. I think it is really
8 important to see this report Investment Plan as an
9 opportunity, if you will, as an opportunity to
10 communicate to a very broad audience, the globe if
11 you will, where CEC sees needs for additional
12 funding, even if in the near-term you are making a
13 strategic decision not to, to fund. Or feeling
14 that a million or 100,000, whatever it is, isn't
15 enough to make a significant difference.

16 That said, I would caution you in the
17 report to reach a conclusion in any category that
18 no additional funding is needed. What caught a
19 number of Advisory Committee members' attention
20 was a statement in the report that says that
21 battery development is basically covered or
22 there's sufficient funding in that sector.

23 And that, you know, especially given the
24 recent change in the economy and the number of
25 funders pulling back what they were planning to

1 do, we don't believe that is true, period. I
2 expect we'll hear more from others on that point.
3 But it's a caution in general not to be too quick
4 to conclude that any of these technologies has
5 sufficient funding right now.

6 MR. OLSON: Good point. In fact, that
7 triggers another comment. I don't know if it is
8 in our report but a conclusion, it might have been
9 in the TIAX Gap Analysis. About six months we had
10 heard, no need for the state of California to do
11 anything in the cellulosic development.

12 That now has changed completely around
13 and that needs to be revisited. There is plenty
14 of venture capital money, there is plenty -- in
15 fact I wish I could show you. I don't actually
16 have this in writing but it is a comment from,
17 comments from two billionaires who stated, we are
18 changing our minds. There's definitely a problem
19 that financial markets aren't addressing. Let's
20 see.

21 MS. SHARPLESS: If I may, may I ask a
22 question about your assessment on the need for a
23 number of biofuel stations.

24 MR. OLSON: These are production
25 facilities.

1 MS. SHARPLESS: Production facilities.

2 So your assessment is that the need is there now
3 for that level; is that correct?

4 MR. OLSON: I guess the scenario was if
5 we go to E-10 and we want to see expansion to E-85
6 over a 20 year period to begin with, the 2020 time
7 frame, that you are going to need 50, 100-million
8 gallon per year projects or 100, 50-million
9 projects. And no matter where the fuel comes
10 from, if you want it in California then that's
11 what -- if you want that development in California
12 that's the number of projects. If you are going
13 to rely on imports then someone else is producing
14 it.

15 MS. SHARPLESS: So this is based on an
16 assessment that OEMs are going to be manufacturing
17 vehicles that will require that volume?

18 MR. OLSON: Yes.

19 MS. SHARPLESS: Or is this production
20 for blended or -- I'm missing something.

21 MR. OLSON: It is a combination earlier.
22 It is a combination that is going to the E-10
23 blend. So that means you are raising to 1.6
24 billion gallons of gasoline equivalent. And then
25 from there growing that for the E-85.

1 MR. SHEARS: But those numbers of 30 to
2 60, those are the numbers that came out of the AB
3 1007 analysis.

4 MR. OLSON: Right.

5 MR. SHEARS: The 1007 report work. So
6 all of the analysis and everything that went into
7 deriving those numbers is, you know. So if you
8 want to troll through all of the documentation it
9 is all part of the AB 1007 report documentation.

10 MS. SHARPLESS: Thank you. I just, you
11 know. As we look at the world as it is now, as
12 opposed to what it was then, we see what's
13 happening to the manufacturing companies here in
14 the states and abroad. I'm just wondering. I am
15 not into gloom and doom on those scenarios so I'm
16 wondering if the changes now affect those
17 scenarios by offering different opportunities.
18 So, you know, are there going to be car
19 manufacturers out there manufacturing vehicles
20 that will use a flex fuel or is it an opportunity
21 to leap ahead?

22 MR. OLSON: Good comment.

23 PRESIDING MEMBER BOYD: To me it's a
24 good point. The only thing that goes through my
25 mind is the E-10 is just for the existing fleet so

1 we don't need to produce any new. And some E-85,
2 a lot more E-85 is needed to meet the existing
3 fleet of flexible fuel vehicles out there, so
4 that's kind of phase one.

5 I guess phase two would be a question of
6 the fate of -- Basically the domestic
7 manufacturers are the only ones who produce flex
8 fuel vehicles so you're right. Their fate and are
9 they going to be around and do they want to
10 produce flex fuel vehicles as part of their
11 portfolio of vehicles in the future. It's a good
12 question.

13 MS. SHARPLESS: Well you know they are
14 restructuring now so whether or not they have got
15 three models that they are going to be
16 manufacturing or one model or five models I think
17 that is still up in the air. But I think the
18 opportunity for California and certainly the CEC
19 and the Air Board is that whatever message we send
20 out in terms of what the needs are going to be for
21 the state, you know, this is like a stimulus
22 package. It's an opportunity.

23 So do we basically use the assumptions
24 that were well thought out and proposed and lots
25 of public input and lots of industry input? But

1 things have changed. Do you we use that as a
2 basis for what we do now or do we, you know, take
3 an opportunity to look broader?

4 PRESIDING MEMBER BOYD: Well I think
5 implicit in this whole process now, I don't think
6 there's anybody in the room who doesn't recognize
7 the world has sure changed since we started this
8 process so this is going to become a very dynamic
9 plan. I guess the way I look at it, since this
10 plan is really just 2009-10 and we will all be
11 looking at this, looking at this continuously. I
12 mean, your point is a good one and I think we have
13 to look to what's the future going to be.

14 But I surmise that what the staff has
15 projected right now, an investment in the '09-10
16 time frame, probably just meets the needs of the
17 existing fleet. And the manufacturers are still,
18 I mean, 2009 models are still pushing flexible
19 fuel so we'll have a fairly decent number of
20 vehicles out there that could use this if only
21 they had it.

22 But you are exactly right with regard to
23 where are they going in the future. So as we sit
24 and assemble continuously to look at the future
25 years' Investment Plan we will be in a position to

1 say yeah, they're still making them or no, they
2 have abandoned that whole thing and so we won't
3 want to go beyond the point necessary to take care
4 of the existing E-85 fleet.

5 On the other hand, any internal
6 combustion engine in the future is going to be
7 able to handle E-10 so there will always be that.
8 That need for that much ethanol or whatever.

9 MR. COLEMAN: Will Coleman from Mohr
10 Davidow. I was going to hold this point for the
11 next slide but it's feeding on what you're saying.
12 I noticed that just in general there weren't any
13 goals at all on the biofuels side but there were
14 things like retrofits for electric drive. Is that
15 because the assumption is that there's enough
16 vehicles out there to, you know, trial demand for
17 an E-85 infrastructure that we can build or is
18 that some other assumption?

19 MR. OLSON: No, that's right. Close to
20 400,000 vehicles. We haven't gotten to that point
21 there but our next -- let me see. The next slide
22 was support for E-85. The amount of funding we
23 are recommending would add about 50 additional
24 stations, building on what the Air Board has done
25 with their AQIP projects. So there's not enough

1 out there to service the 400,000 that many people
2 don't even know that they own.

3 MR. COLEMAN: And have you really looked
4 at that density of those vehicles and where they
5 are? Because I think one of the big questions for
6 any fueling station is am I really going to put a
7 tank in the ground when there's ten vehicles in my
8 neighborhood that are actually going to buy?

9 MR. OLSON: Not only have we looked at
10 that density through databases we have access to
11 but there are at least four companies out there
12 that have done their own density studies and they
13 were concurring that there is a need for these.
14 And there's some pretty logical places for them.

15 MR. COLEMAN: Okay. I suggest that it
16 may be worthwhile, considering more rapid
17 deployment of FFVs, or consideration of that, as
18 one option as well in the Biofuels section, given
19 that there's probably a small number of areas out
20 there. But broader acceptance or broader demand
21 for biofuels will support a lot of these others.

22 MR. OLSON: And Jan, your comment I
23 think holds true on all the others. How OEMs see
24 their development of all these other vehicles,
25 whether it's electric drive, hydrogen, FFVs.

1 We're having to have lots of frequent meetings
2 with them to find out and pin them down and learn
3 some things, a little arm twisting. Under what
4 condition, what does it take?

5 Knowing that we are not going to provide
6 incentives for this directly to an automaker, we
7 are not allowed by law. But we can provide the
8 incentive rebates to customers. And we have got
9 more demand than we have supply. That's what is
10 going on. We have got greater interest from --

11 So it is not limited to Detroit, it's
12 really worldwide. Where we want, we think -- In
13 essence what we want to say is we want to reward
14 early adopters, it doesn't matter where you come
15 from. It's got to meet CARB regulations, it's got
16 to meet NHTSA rollover.

17 MS. SHARPLESS: Yes. That's why I think
18 this is so difficult because it is an opportunity
19 to turn this behemoth ship that we have been
20 driving in one direction around. We've got a
21 little bit of money. What I hear in the
22 Investment Plan is sort of spreading this little
23 bit of money around in a lot of different areas
24 taking advantage of innovations. But do we do it
25 that way or do we try to --

1 I understand about the winner/loser
2 thing and I think it is really good that we are
3 able to begin to look at our transportation system
4 somewhat like we look at our electricity system.
5 And that there be multiple sources so that we
6 don't put all of our eggs in one basket.

7 But, you know, I guess maybe I have been
8 in this business too long. As I drive by stations
9 where I remember them, you know, there being M-85
10 pumps. And as I drive by different public
11 charging stations and there are no electric
12 vehicles for which we spent a lot of public money.
13 That was then. And I think we have learned a lot
14 from the lessons of --

15 I see the synergies being greater now.
16 I see the opportunities being greater. That the
17 message that we send, and I think that's what I
18 hear you all saying, it's going to be really
19 important. And I don't know if it is like the
20 gunshot that will be the important thing or the
21 more targeted message that is going to be the
22 important thing. And I think that is what the
23 Commission is going to have to grapple with.

24 MR. OLSON: Thank you. This last point
25 on the biofuels is going to go back to the diesel,

1 the biodiesel/renewable diesel storage/blending
2 terminals. We think with the modest amount of
3 money that we are recommending that we can
4 stimulate two to three of these terminals. I
5 think it was Jay McKeeman who raised this comment
6 about Kinder-Morgan, Shell, the big major energy
7 companies.

8 Yes, they are interested in some of this
9 but not real interested. It's really a group of
10 small or independent companies. The financing is
11 not there completely. Most of these companies
12 have made pretty good arguments and verified their
13 source of lending. Again I am recommending that
14 we go through a step-by-step feasibility
15 construction and final financing. What role we
16 play in each one of those.

17 And right now what is going on is there
18 is a definite logistical problem of having
19 Northern California/Southern California blending
20 for biodiesel/renewable diesel. What these
21 projects will go is get us to the point of close
22 to 500 million gallons of blended -- blend stock
23 in a two year, a two to three year time frame.
24 That's a pretty significant step to --

25 And as a result of that, despite the

1 fact that it will be a blended fuel that will give
2 us the most cumulative greenhouse gas emission
3 with going into the existing marketplace that this
4 would service. So we think it's a good idea.

5 How many of these would we have to
6 build? I'm not sure if there's any more beyond
7 this. There might be one or two more after that.
8 But it is a contributor. We need contributions
9 from all of those different sources and we think
10 this is a very good one from the medium-duty,
11 heavy-duty, possibly the light-duty.

12 MS. HICKS: I have a question. Kathy
13 Hicks from Department of General Services with the
14 Advisory Committee.

15 Will you be investing in improving the
16 permitting process to speed up the installation of
17 infrastructure and reduce permitting costs?

18 MR. OLSON: We will help facilitate that
19 where it makes sense. We also want to make sure
20 that all the different factors are taken into
21 account.

22 MS. HICKS: Okay and then one other
23 question. I don't remember who, somebody here
24 mentioned that the independent oil producers, the
25 action that the Water Board took to halt the

1 biodiesel underground storage tanks. Will the
2 Advisory Committee commit to fixing these sorts of
3 policy and practice misalignments?

4 MR. OLSON: Well I think that needs some
5 discussion with those agencies. There some other
6 forums where we can do that. And they may have
7 very good reasons for them, we just need to find
8 out more about it.

9 MR. EMMETT: I'd like to flag that, this
10 is Daniel Emmett, Energy Independence Now, for
11 perhaps later discussion during the end of the
12 program here. But I think that is a key area that
13 should probably be discussed a little further into
14 the whole notion of barrier removal. There's non-
15 greenhouse gas-related items for funding, there is
16 some reference to that, but it seems to me that
17 there could be more that would really help to
18 remove, remove some barriers as do currently exist
19 in a real way to some of these technologies,
20 playing a real role in the time frames you were
21 talking about.

22 I would like to make one other offer of
23 support here for something I have seen in this
24 biofuels category that seems a little different
25 than what is in the Investment Plan.

1 So I'm hoping that what we are seeing
2 here in terms of biodiesel, renewable diesel being
3 included here with ethanol E-85 as an ultra-low-
4 carbon fuel, it looked to me almost like
5 biorenewable diesel is being treated as a low-
6 carbon with natural gas and propane and I am
7 seeing very clearly that it is included here with
8 the E-85. That makes a lot more sense to me and I
9 want to advocate for seeing that reflected more
10 clearly in the Investment Plan.

11 And one last point with regard to the
12 expansion of E-85 fueling stations. Similarly you
13 have got user groups that are quite significant in
14 number up and down the state of biodiesel users
15 that are facing some of these, you know, process
16 barriers, but also could use more fueling stations
17 for use of D-100. And so I just would hope that
18 similarly D-100 would be included in terms of
19 expanding these low-carbon fuels in places where
20 they are actually being used by segments of the
21 marketplace.

22 MR. OLSON: I think a general comment
23 overall is recommending to the Commissioners here
24 and the Advisory Committee. You know, there are
25 systems in place for the most part for a lot of

1 these permits. We are not trying to restructure
2 that. And there are different ways of addressing
3 where there are problems or barriers to clear.

4 If there are barriers then that's
5 working within those existing systems, maybe even
6 facilitating, expressing what the -- It might even
7 be an education or training process. We know that
8 quite a few fire marshals are not familiar with
9 these new technologies and they have to be at some
10 point to permit them.

11 And if it makes sense to put money into
12 it, then do that if it makes sense. And where
13 might it make sense? Well, performance. If you
14 are looking at certification or standards,
15 performance tests, analysis. You know, basically
16 work within the systems but do some additional
17 background work that might help address where
18 there's a barrier problem.

19 MS. HICKS: One last barrier that I
20 wanted to point out. That there is a need for
21 funding updates to the commercial fueling station
22 coding apparatus so that we can accurately track
23 how well we are -- well, starting with the
24 benchmarking and then how well we can accurately
25 report back on the successes of these fuels being

1 used.

2 MR. OLSON: Appreciate it. I'll raise
3 some others a little later in this presentation.

4 In addition one thing on biofuels that
5 we are also recommending, and it comes up in our
6 category called sustainability is, we think it is
7 worth spending some money in the verification
8 process for some of the feedstocks of whatever
9 project that we are funding here.

10 And that that could be attached to each
11 proposal or it could be known as an independent
12 analysis but there really has to be an
13 independent, verifiable process of any feedstock
14 that -- in essence I think we are going to be in
15 that business anyway of tracking back to the
16 origin. I think we are suggesting that we spend
17 some money in that area.

18 MS. HOLMES-GEN: Can I may a comment?

19 MR. OLSON: Sure.

20 MS. HOLMES-GEN: Bonnie Holmes-Gen with
21 the American Lung Association. I just, I just
22 wanted to make a comment. I appreciate that this
23 category is focused on a transition to low-GHG
24 feedstocks. But I just wanted to make a comment
25 that I was hoping or would suggest a stronger

1 focus on allocating the funding now to the lowest
2 carbon -- to the fuels, biofuels with the lowest
3 carbon intensity and a focus on cellulosic and
4 waste residues.

5 And I know you have that in part here
6 but I think that a stronger focus is warranted,
7 especially given the 2050 Vision, which cites the
8 need for biofuels with an 80 percent reduction in
9 carbon intensity. And if we are trying to match
10 up to that vision that we may need to push a
11 little faster and a little harder and focus the
12 funding now to try to get, develop those
13 technologies more quickly.

14 MR. OLSON: Thank you very much. I kind
15 of grouped natural gas and propane together.
16 Propane is a very small element of this, this
17 funding program. Natural gas, we feel that --
18 This is an area that we feel has the potential for
19 some significant deployment, particularly in the
20 medium-duty, heavy-duty.

21 With this funding we are suggesting both
22 deployment of vehicles in light-duty, medium-duty,
23 heavy-duty. Light-duty, as many people know,
24 Honda is the only maker of a dedicated vehicle.
25 Medium-duty, heavy-duty, limited to one engine

1 platform, Cummins Westport, but lots of
2 applications of those engines over various vehicle
3 classes. It has the most growth in the
4 alternative fuels.

5 Still more expensive than a
6 diesel/gasoline if you are comparing. It still
7 needs help in some of the infrastructure in some
8 of these other areas. It still needs development
9 of new technologies, particularly our interest of
10 combining the new, the different fuel, non-diesel
11 fuel, natural gas, with these hybrid technologies
12 and kind of merges with other things that have
13 additional greenhouse gas reduction benefits.

14 So we are suggesting that with the
15 natural gas, propane, that we are looking at this
16 development, demonstration deployment area. That
17 we are looking at a range of probably less than
18 500 light-duty vehicles, again in a rebate type of
19 program. Medium-duty, heavy-duty could be in the
20 range of 1,000 to 3,000 vehicles. That's what the
21 demand is, that's what --

22 You've got, you've got instances
23 throughout Southern California. Various classes,
24 whether they are drayage trucks in ports, refuse
25 truck applications, package delivery. Some of

1 this is in the marketplace now. There is an
2 additional demand for this and there is a
3 differential cost.

4 So we think that -- What kind of
5 greenhouse gas benefit you get out of that? Well
6 compared to diesel, probably 20 percent. And if
7 you can use that as a transition or bridge to the
8 electric drive, hydraulic drive with a natural gas
9 fuel base you are going to get even more. And we
10 see this as a definite additional option. not the
11 only option but an additional option that is worth
12 looking at.

13 We also think that in the prototype
14 development we would like to get at least one
15 other engine manufacturer producing. What would
16 stimulate that? Well we think that the Port of LA
17 Long Beach desire to create basically a transition
18 of 7800 vehicles, drayage trucks, to LNG, is going
19 to create a demand for more engine manufacturing
20 to create another platform. We think that adds to
21 this diversity that we are looking for.

22 There are quite a few people we talked
23 to in this area. A lot of users, a lot of the
24 industry people, the manufacturers. There is
25 definite interest in this area. There is definite

1 interest in doing, combining the natural gas with
2 electric, electric hybrid, hydraulic hybrid type
3 of systems.

4 And we think that there's a need for the
5 infrastructure. With this funding we are not
6 proposing a lot of projects but there are quite a
7 few that have been in operation. Natural gas, CNG
8 particularly, have been in operation for 10 to 12
9 years and there's some aging systems, particularly
10 school district, the school bus districts need
11 some retrofits. So in essence we are suggesting
12 that the primary amount of money in this area
13 would go to those retrofit upfitting on existing.
14 And because they are supplying existing natural
15 gas systems now, buses and transit.

16 If you want to spend more money in this
17 area I wouldn't recommend a grant approach, I
18 would recommend some kind of loan guarantee. What
19 we projected from this was with a small amount of
20 money we can create from about a \$5 million
21 investment, a cash investment, we can create close
22 to a \$100 million debt pool. How many projects
23 would that fund? Maybe 15 or 20. We're not,
24 we're not the main funder.

25 (Whereupon, Ms. Daijogo exited the

1 meeting room.)

2 MR. OLSON: So that's kind of the thrust
3 of that. There are a handful of refurbishments
4 that could occur with propane. There's a couple
5 of companies, what we call delayed OEM companies
6 that work with OEMs. They have CARB
7 certification. We think those projects are going
8 to go forward and there's a greenhouse gas
9 emission reduction.

10 What happens after 2020? Those vehicles
11 will probably transition to hydrogen or electric
12 drive at some point. Otherwise they are going to
13 be gasoline or diesel until 2020. So we're
14 saying, you can get at least 10, 15 percent
15 greenhouse gas reduction from those in the early
16 years. And it is not a significant number in
17 terms of vehicle, numbers of vehicles.

18 I want to go now to vehicle engine
19 efficiency. This is a little bit of a crossover
20 back to the electric drive, hydraulic hybrid.
21 What we envision here is our money primarily going
22 into -- This is an area where there is not a lot
23 of deployment potential jam. It's really new
24 technology. Things like camless motors and new
25 changes in components and early prototype

1 development.

2 We are not proposing a lot of money in
3 this area but we know that there are quite a few
4 areas that could, could accelerate advancement
5 with some research money. And we think that these
6 are in the prototype kind of demonstration,
7 addressing -- We think we can get out of this
8 funding about 14 demonstration applications.

9 And for the electric drive, again,
10 exploring the series. Electrifying accessories,
11 plug-in battery electric. This is an area where
12 we can accelerate the 2050 objectives but it is
13 not going to be deployment to start off. It
14 really is a, it's a kind of near to market
15 research or demonstration. Quite a bit of input
16 from engine manufacturers. Small universities
17 have real strong interest in this area and some
18 inventors that had some good ideas.

19 We also have this category, as Peter
20 mentioned, these non-GHG reduction categories. I
21 kind of summarized most of them. Peter went
22 through pretty good detail on this. We are
23 proposing a pretty robust investment in this area.
24 We think it is important having that skilled
25 workforce available as these products, new

1 products and new fuels come into the marketplace.

2 And we are looking at both statewide
3 tech programs. Some that exist at other agencies
4 that exist now. Some regional types of programs.
5 And then over on the next page some education, K
6 through 12, community college. We think this
7 deserves attention.

8 It really, really responds to what's the
9 transition of the marketplace given our economic
10 problems and the expectation that the energy
11 transportation area is going to be the source of
12 green jobs. So we just don't want to do this in a
13 vacuum. We want to work with manufacturers and
14 different entities that are closer to the ground
15 on this and likely to do several co-funded
16 projects.

17 (Whereupon, Mr. Brunello exited the
18 meeting room.)

19 MR. SHEARS: Tim, John Shears. I'm John
20 with CEERT. I just wanted to stress, and I
21 appreciate the discussion about work training and
22 public outreach education. But I would like to
23 see, and I think it is important, a stronger link
24 made between how the K through 12 component of
25 public outreach and education can serve as a ramp

1 to motivating, you know, a lot of students to
2 consider taking on an education profile that would
3 lead them into the technical careers.

4 You know, Peter participated in a forum
5 that we held down in the Valley in late October
6 and it was clear from the discussion and the
7 audience there that there is a huge hunger in the
8 community to have support for, you know, green
9 tech, clean tech types of components in the K
10 through 12 curriculum.

11 We need to, you know, help assist in
12 leveraging that workforce training goal when we
13 use that. So I would like to encourage a stronger
14 link. Because also I noticed they are kind of
15 separated out in how the report is structured. So
16 I just want to draw stronger linkage there.

17 MR. OLSON: Just to touch on briefly and
18 remind you that we are, we would like to spend
19 some money on the sustainability metrics,
20 verification. That needs some further development
21 and kind of brainstorming. But it really is a
22 critical part of this whole. How we select
23 projects, how we monitor, how we measure. And we
24 need some methods in place.

25 Peter mentioned and added some detail on

1 the standards certification. A question about
2 what kind of levels are we planning. Again, we
3 see things like in the hydrogen area where you
4 can't sell the fuel until you get, you get a
5 certification, a standard set up to define what it
6 is. And each one of these has some, may have a
7 step involved where you have got to go through
8 some certification process.

9 We are not -- In essence we are
10 suggesting where it makes sense we spend, we spend
11 money on things like performance tests, some of
12 the development of criteria. If it's a Air Board
13 certification we definitely want -- we are not
14 trying to bypass or undercut it, it really is how
15 do we make this work with the Air Board. Can we,
16 can we accelerate some of these tasks that then
17 meet the compliance for the Air Board. And of
18 course they definitely have to have a role in
19 that. And we talked about some of the public
20 outreach.

21 We have a category just on technical
22 assistance. This is more kind of contract experts
23 hired to support our staff. We see some key
24 areas. Continual refinement of the Full Fuel
25 Cycle Analysis. We have already committed money

1 there.

2 Revisiting the financing mechanisms I
3 think is going to be a key thing in the next
4 couple of years. We are going to have to do that
5 more than once. We spent a lot of time on where
6 private money might come into this and whether or
7 not the government has a role in it. I think we
8 are going to see some changes over time and we are
9 willing to, we are recommending that we spend
10 money on some of the areas just to track, report
11 and facilitate.

12 So I think that -- oh yeah. Then a key
13 area is also this manufacturing and production
14 incentives. So many of you may know about the --
15 there's a notable sales tax exemption for
16 manufacturing equipment that Tesla received from
17 the state of California to kind of retain that
18 company here in California.

19 And we want to build on that, those
20 kinds of ideas possibly with this money. In
21 conjunction with these other tax incentives in
22 conjunction with integral or enterprise zones in
23 conjunction with other local incentives. That
24 economic development we think is important and
25 things like manufacturing. Whether it's a system,

1 a component.

2 We also think it's important for keeping
3 and retaining businesses in California that are
4 producing, retaining, expanding, recruiting.
5 Those are things we propose to do with this.

6 And I one final conclusion from this is
7 that these are the key factors we are looking at
8 as reflecting how we are making our decisions. It
9 definitely starts with the greenhouse gas emission
10 reduction potential. Keeping an eye on that, how
11 do we increase that, how to expand it over time.
12 How do we, what can we do to bring that 2050
13 earlier?

14 It's matched with the practical
15 standpoint of, do we have the production out there
16 to provide the products to get to that point? Do
17 we have to go through transitions and do we have
18 the demand? I think for the most part the demand
19 is there for the products.

20 We are also recognizing that some of
21 these things may not materialize or we may have
22 bigger demand in some areas than others and we are
23 flexible to changing and revising these allocation
24 numbers to reflect that interest.

25 And the key thing is we do not want to

1 make an allocation and have the money sit and then
2 it is taken from this agency for some other
3 purpose because we couldn't move it. So we are
4 trying to reflect the real world, who is going to
5 submit a proposal, who is serious, who can provide
6 matching funds, who can build the project. Who
7 can get these vehicles in the marketplace.

8 So that's the -- Sorry for the -- I
9 didn't intend to take this long to do this but I
10 think it was good to have the comments as we went
11 through.

12 PRESIDING MEMBER BOYD: I won't
13 comment --

14 MR. OLSON: Any questions?

15 MR. COLEMAN: Can I ask one more
16 question?

17 PRESIDING MEMBER BOYD: I won't comment
18 on your estimates of time, staff.

19 MR. COLEMAN: One more question in
20 there?

21 PRESIDING MEMBER BOYD: Go ahead, Will.

22 MR. COLEMAN: In terms of your last
23 point. In terms of the recommendations for the
24 different technology buckets and in the Investment
25 Plan there are actual dollar allocations. How

1 rigid do you see those over the course of the next
2 year, two years? And how would those change
3 depending on where you see opportunity or where
4 there is a lack of demand for various buckets?

5 MR. OLSON: Well from our staff view
6 they are not rigid. They are reflecting our best
7 guess at how to achieve the maximum greenhouse gas
8 emission reductions in a time frame that had
9 practical projects. In some of those where you
10 have a bigger potential like electric drive or
11 hydrogen, bigger per unit greenhouse gas reduction
12 potential can you get, get the products in the
13 marketplace? Are they going to be there to sell?
14 Are there buyers? And we are trying to reflect
15 that.

16 So if we have automakers coming in and
17 saying, as a result of your announcement that you
18 are going to provide these rebates we are going to
19 accelerate by two years to have our PEV in the
20 marketplace. Great, we should provide the
21 incentive for it. But we are not hearing those
22 kind of comments.

23 MR. COLEMAN: So if there is an
24 excessive demand in one bucket versus another are
25 you willing, are all of the proposals coming in

1 the door going to be evaluated relative to each
2 other or are they going to be evaluated within the
3 buckets?

4 MR. OLSON: I don't think we have really
5 decided on that. And from a workload standpoint
6 it is going to be difficult to do it all at once.
7 So we may be staggering some of these over time.
8 So for example, coordinating with CARB on the
9 vehicle rebate. We want to do that in a time
10 frame when they can do it too.

11 But if it comes down to you have got
12 more demand, it is going to be kind of managing
13 that over about a two to three, four month time
14 frame of, did we put too much money in one area,
15 can we shift some to another. And it is going to
16 be a challenge managing all of them for this first
17 round because we are compacting two years into
18 about 15 months.

19 PRESIDING MEMBER BOYD: Will, I think
20 it's safe to say, I think I can speak for
21 Commissioner Douglas and myself, the Commissioners
22 on the Commission are going to be very sensitive
23 to what is going on in the world out there and how
24 things may have to change. I mean, I think coming
25 into this project a long time ago we all were

1 looking at a fair degree of rigidity. But the
2 world has turned on its head so I think we are
3 very sensitive to how things can change very
4 dramatically depending upon what happens to
5 people.

6 And always would change as we entice
7 more knowledge into the public arena about
8 technology, as we are hoping to do in our workshop
9 on biofuels next week. That's a good question,
10 that's a good point. Plus, you know, how many 24
11 hour working days can the staff handle. I think
12 Carla and then Tim.

13 MS. DIN: Carla Din, Apollo Alliance.
14 Thank you so much to the staff for your very hard
15 work, and especially in terms of your flexibility
16 to respond to the changing societal factors.

17 I am very pleased to see and hear that
18 economic development has been elevated as a high
19 priority. I think we have an incredible
20 opportunity here to direct funds in a way that
21 will boost the economy. And I think there are
22 other additional ways to embed that into the
23 program.

24 Overall I think it would behoove us to
25 assess each approach in terms of its potential for

1 positive, economic benefit to the state. And when
2 it comes time to report on the deliverables of AB
3 118 we could point to specific data points such as
4 industrial growth in California, such as high-
5 quality job creation.

6 So I would really recommend using a
7 weighting formula, all things being equal, where
8 we could place a higher value on projects with a
9 strong potential for long-term business growth and
10 high-quality job creation in California.

11 Another thing that is important to us is
12 to apply high standards to financial incentives,
13 because those are public incentives which should
14 go to public good. The greater Phoenix area, for
15 instance, has a program that provides higher tax
16 credits for higher wage levels, for instance, for
17 higher job creation potential. So I would
18 recommend those two approaches.

19 On the workforce training side the
20 Investment Plan references AB 3018, which is the
21 establishment of the job training -- excuse me,
22 the Green Jobs Council. And while I think that is
23 a good program there's no funding attached to it.
24 So I wouldn't rely on that council in terms of
25 trying to identify where the skills that are going

1 to be needed, where there is training required. I
2 think this body is really, is the body to actually
3 determine what those skills might be that we will
4 need to address in terms of workforce training
5 programs.

6 The Investment Plan also focuses on new
7 programs. Excuse me, on existing programs for
8 funding. And I would recommend that since we
9 don't really know what the skills and training
10 requirements are going to be that it be expanded
11 to new programs as well.

12 And finally in terms of assessing what
13 are the economic benefits of the entire program.
14 I would recommend expanding the summary of the
15 funding recommendations to a new column of
16 economic benefits. And that would include, again,
17 industrial growth and a potential for job creation
18 in each category. Thank you.

19 PRESIDING MEMBER BOYD: Tim, did you
20 have a -- I do want to -- excuse me. I want to
21 get to some stakeholders who have indicated they
22 need to leave.

23 MR. CARMICHAEL: Thank you, I just have
24 a question, not a whole bunch of comments. To
25 Peter and Tim. I very much believe in a diverse

1 portfolio approach. I very much still see 75 or
2 120 million as a significant amount of money.

3 But back to Jan Sharpless's point
4 earlier. Even your summary presentation has 20
5 different action categories. And you went through
6 each of those and highlighted not only types of
7 projects but, you know, enumerated potential
8 projects for each of those action areas. And so I
9 guess I am curious how much the staff has thought
10 about, is this a reasonable amount, too many, you
11 know. Or possibly too many project areas to be
12 funding with this amount of money.

13 MR. OLSON: Well, we wanted to break
14 that down to show you where, where individual
15 money might go. However, when you sum it up we
16 think it is about seven, at the most seven
17 programs. That it really is a vehicle rebate
18 program. Different things can qualify under it,
19 electric drive, natural gas, refurbishments.

20 It's an infrastructure, another program
21 is an infrastructure program. E-85 infrastructure
22 would fall under that, natural gas maybe to a
23 lesser extent.

24 So when you sum it up and how would we
25 manage this we think it's workable. But we would

1 like to keep the door open for these options if
2 they can show significant greenhouse gas emission
3 reductions and it can be done in a time -- this
4 two year time frame or 15 month time frame.

5 You know, it's hard to -- Are all of
6 those things going to come forward? Don't know.
7 We may in the screening process, some E-85 will
8 fall on the table, it might be higher priority
9 than the others. And as you are suggesting we may
10 get better demand in some areas than others so it
11 might shift our priority in that way.

12 MS. SHARPLESS: You just mentioned if it
13 can be accomplished in two years. And obviously a
14 vehicle rebate program is what it is. But when
15 you are talking about construction of production
16 facilities or something that has a longer time
17 frame, when you use the two year measurement what
18 are you talking about in terms of longer term
19 projects? You got the funds out the door and they
20 have taken a shovel of dirt and turned it over?
21 Exactly how do you define accomplishing the longer
22 term projects in two years?

23 MR. OLSON: I would recommend we break
24 it into stages and determine what our role is in
25 each one. In early stages, which I am using the

1 term feasibility but it could cover that. Going
2 to the point where you are ready for construction.
3 It could easily be within a one year or two year
4 time frame.

5 And the point of do we want to have a
6 role in the next stage, which might be some
7 construction and development, that's a decision
8 that I think has to -- But we know from the past,
9 other kinds, other programs, that a government
10 role in that early stage offsets a lot of risk and
11 puts that project in a position to go forward. So
12 yes, if it's a longer term construction project,
13 look at those time frames on what can be done in
14 the first couple of years.

15 MR. HWANG: Tim, I have a question for
16 you. I'm just trying to think through how the
17 mechanics of the process is going to be for
18 project proposals.

19 The Investment Plan provides a vision of
20 large bins, categories of technologies and fuels
21 and other projects. But as the projects come in
22 how is the Energy Commission staff going to score
23 or prioritize the projects? And how are you going
24 to make sure that which, you know, the projects
25 which are being prioritized, how do we make sure

1 that the incentive level, the amount of public
2 support is provided in a manner which is scaled to
3 the amount of public benefit, including job
4 creation, including carbon benefits in 2020,
5 including carbon benefits in 2050.

6 So in some ways I see that this
7 Investment Plan provide somewhat of a large vision
8 or aspiration of where we want to see the 118
9 program head. But some, I think as you suggest,
10 is going to be driven by what projects come into
11 the door. What projects may be shovel-ready.
12 What projects we can actually get going.

13 And how do we make sure that the
14 projects that are lined up to go earlier are not
15 going to be prioritized just because they are more
16 closer to the market, versus the projects which we
17 really do need longer term? Large that, you know,
18 would make a difference in terms of public
19 support.

20 MR. OLSON: Good question. We are not
21 quite there. We are in the process of developing
22 those kind of criteria. The solicitation
23 packages, of course, have to go, have to have a
24 lot of internal discussion with the Air Board and
25 our Commissioners about that.

1 We are likely to have some public
2 workshops in the near-term here where we can get a
3 better feel for that. Who is serious and then
4 kind of overlay that with, okay, how does that fit
5 with the priorities from the public policy
6 standpoint. A little bit of an organic process
7 but I think that's happening over the next couple
8 of months.

9 MR. HWANG: And is the intention in
10 terms of scaling the incentives per project to the
11 public benefits? The projects that have greater
12 public benefits will qualify for a greater level
13 of incentives. Is that also the intention of the
14 staff?

15 MR. OLSON: I think we need, we need to
16 have more discussions internally over that. We
17 have lots of ideas on that. We haven't come to
18 conclusions yet. But it is definitely a key thing
19 to look at and a key driver for this.

20 MR. COOPER: Is this --

21 MR. COLEMAN: Sorry. Is this group
22 going to have the ability to weigh in on that
23 selection process at some point or is that outside
24 the scope of what this group is set up to do?

25 MR. WARD: I was going to answer

1 Roland's question first. Yes, first. I think I
2 mentioned a couple of things. The attributes and
3 enhancements. We definitely are of a mind to
4 think of the benefits.

5 The preparations of the solicitations.
6 We haven't anticipated. We always are looking for
7 your advice. But I think it's an Energy
8 Commission preparation of the solicitations and we
9 are working hard to do that. We would like to get
10 your input and I don't want to close it off.

11 Because this is the Advisory Committee
12 meeting on the Investment Plan we don't want to be
13 set adrift from you folks. We want, we want to
14 hear from you whenever you, you have something to
15 provide to us.

16 MR. COOPER: This is Peter Cooper. I'd
17 like to make a comment when appropriate.

18 MR. WARD: We have some stakeholders
19 that are going to be making presentations. Can
20 you hold it, Peter, for awhile?

21 MR. COOPER: Yes.

22 PRESIDING MEMBER BOYD: I think what I
23 want to do first, Peter, is while Tom Cackette and
24 ARB are members of the Advisory Committee they are
25 really our partners in multiple respects in this

1 whole thing and I know Tom has a presentation.
2 And I think it would be appropriate for him to do
3 his presentation then turn to the stakeholders.
4 And the first stakeholder I am going to call on is
5 Honda because I know they have a problem then
6 we'll work our way through.

7 In fact I am going to ask if any
8 Advisory Committee members have time constraints
9 or any stakeholders have time constraints if they
10 could let us know that. Otherwise, you know, we
11 are going to go a little while then take a lunch
12 break and come back and keep going. And I would
13 try to get those folks who can't stay handled, I
14 can't guarantee it.

15 MS. ODABASHIAN: I do.

16 PRESIDING MEMBER BOYD: So be it. So
17 anybody -- Let's hear from ARB.

18 MR. CARMICHAEL: Commissioner, keep
19 going until when, do you think? I mean, time
20 constraints. I have a, I have a 2:30 time
21 constraint.

22 MR. SWEENEY: And this is Jim Sweeney.
23 I had understood this was going to end at noon and
24 I have got about, I have got about a dozen
25 appointments this afternoon starting at right

1 after noon so I will just have to sign off.

2 PRESIDING MEMBER BOYD: Okay. Well
3 we'll do the best we can to get some concluding
4 remarks from those who are going to have to leave
5 us. Tom, do you want to --

6 MR. CACKETTE: I made this a little
7 click intensive so that's why I needed to come up
8 here and present where I can control it.

9 Commissioners Boyd and Douglas, I know
10 you know that our staff's have been working very
11 closely together and many of our comments and
12 inputs have been adopted in the plan as you see it
13 today. So what I wanted to do was focus on some
14 overall comments on the plan and raise some of the
15 larger policy issues that I think will ultimately
16 be left at your doorstep.

17 First of all, you know, we think this is
18 a really good framework for establishing
19 priorities and funding allocations. The staff has
20 done a good job of putting something together that
21 I think will be durable for a significant period
22 of time through this seven-year-plus of funding.

23 We really agree with the goal-driven
24 approach. You will see a bit of a difference here
25 in that we do think, as many of the other people

1 have indicated today, that the 2050 goal should be
2 the goal of primacy over the 2020 goal. And
3 fortunately the paper lays out, Gerry here really
4 lays out well what the greenhouse gas reduction
5 needs are and what is possible all the way through
6 the 2050 time frame. So it gives you a good way
7 of seeing what are the fuels, what are the
8 technologies that we will need to attain that
9 goal.

10 So one of the first comments is that
11 what is needed to meet the 2050 goal, and that's
12 the 80 percent reduction goal, we think should
13 drive the funding decisions sort of first and
14 foremost.

15 In looking at that I think you have to
16 ask yourself some questions like what is the
17 greatest market potential? And we think that the
18 technologies and fuels that have the lowest carbon
19 footprint, those are the ones that have all the
20 super-ultra names in front of them for example,
21 and that also have a big market potential is where
22 funding priorities should, should go.

23 We asked ourselves a question also of
24 where is the greatest need for government funds?
25 And the GAP analysis I think shed some light on

1 that. But it is not always where there is a lack
2 of federal or lack of funds being spent. I mean,
3 it's entirely possible that there's not a lot of
4 funds being spent because that technology or fuel
5 doesn't have much potential. People don't see a
6 market for it.

7 So we think that one factor that needs
8 to be taken into consideration is spending the
9 state's money in some of the higher risk
10 propositions. Those are places where people are
11 not willing to invest without some help from
12 government and that's an appropriate government
13 role.

14 Another one is the removal of barriers.
15 I think somebody mentioned that earlier. Those
16 barriers can be a make or break, a make or break
17 point and they can occur very early for a
18 technology or fuel. And therefore I think we have
19 to carefully look at those. And infrastructure is
20 a classic one. Without infrastructure great
21 technologies, great ideas could never get out of
22 the gate. So that's another one that needs, I
23 think, a little separate priority put on it.

24 And where are the opportunities to
25 leverage our funds. Again, we think the leverage

1 opportunities are generally in the area where
2 industry has a willingness or a desire to invest.
3 And if we put a little bit more money in, we
4 multiply the overall effort that is being spent
5 there substantially. So we look to, you know, the
6 assessment and all the meetings you have had with
7 companies to see whether they are really willing
8 to invest. Is this a sustainable product and
9 investment strategy or not?

10 So what are the fuels and vehicles that
11 are most likely needed to meet the 2050 goal? We
12 think this is the list. Now there probably will
13 be other ones in the future and maybe some of
14 these will drop off.

15 But right now the kinds of vehicles that
16 are needed in achieving the 80 percent reduction
17 are things like plug-in hybrid electric vehicles,
18 which is in your super-ultra-low-carbon category,
19 battery electric vehicles in your super-ultra-low-
20 carbon category, fuel cell, hydrogen fuel cell
21 vehicles in your super-ultra-low category, and
22 biofuels in the ultra-low category.

23 So these are the categories that should
24 be getting the preference because they have the
25 technologies that are essential to get from the

1 2020 gateway to 2050. So we think the highest
2 priority funding should obviously go to these.

3 And now I am going to offer a few
4 specific comments on each of the categories or
5 some of the categories.

6 In the super-ultra-low category, which
7 was the electric drive category and is categorized
8 in the report as greater than an, an 82 percent or
9 greater carbon footprint reduction.

10 We think that there's insufficient
11 funding in that category to support the rollout of
12 fuel cell vehicles. And that is important because
13 manufacturers are on the precipice right now of
14 putting vehicles into place. And I think you will
15 see a presentation from Honda today that sows that
16 in the very near future there's going to be a
17 disconnect where there is not enough fuels for the
18 vehicles they want to put out there.

19 And that essentially -- the lack of
20 money in this category, since it's the only game
21 in town for hydrogen infrastructure, could
22 essentially kill hydrogen vehicles in California
23 right now. It could just stop. It would either
24 go elsewhere or manufacturers would move away from
25 it, simply over your decision on whether to fund

1 hydrogen infrastructure.

2 So we think a solution to this is to add
3 at least \$10 million per year more into the super-
4 ultra-low-carbon category. And that would provide
5 the ability to fund what we think the needs are
6 for hydrogen infrastructure while maintaining the
7 other good things that Tim and the staff pointed
8 out could be funded under that category.

9 Right now there's just simply not enough
10 money to do both. In fact, if you were to fund
11 what we think the need is for the hydrogen
12 infrastructure it would probably take up the whole
13 category right now or very nearly all of it,
14 leaving the other good ideas unfunded. So that is
15 our recommendation there.

16 One thing where we do have sort of a
17 technical difference, and ultimately the policy
18 call on your part is that we really don't support,
19 ARB doesn't support the idea of retrofit vehicles.
20 We think the retrofit vehicles such as in this
21 case this category of plug-in hybrid electric
22 vehicles or battery electric vehicles simply don't
23 support the OEM efforts to put vehicles in the
24 marketplace.

25 They are actually not needed because we

1 know that there's very good quality BEVs and PHEVs
2 coming out in the next two or three years. And so
3 the technology learnings from this are not there.
4 And so these retrofits are really limited to niche
5 products that are not sustainable.

6 So yes, each one of them will produce a
7 greenhouse gas reduction but I think this is more
8 supportable if you believe that 2020 is the
9 ultimate goal. If you believe that 2050 is the
10 goal we don't think this is a good way to spend
11 the money.

12 In the biofuel and ultra-low-carbon
13 category, which is the greater than 60 percent GHG
14 reduction, we think that was pretty well laid out.
15 There's one thing that we are learning from the
16 Low Carbon Fuel Standard though is that it is not
17 clear that ethanol or alcohols or fuels that are
18 separate from gasoline are necessarily the
19 biofuels that we'll get.

20 The other option is biofuels that
21 produce longer chain hydrocarbons that can be
22 blended into gasoline and still looks -- or diesel
23 and it still looks like gasoline or diesel.

24 And given that that's not certain right
25 now we would emphasize more of the money being

1 spent and sending a signal to the people who are
2 bidding to spend more of the money on these
3 production processes or the ones that have the
4 lowest carbon footprint. And see how this all
5 plays out before we spend a lot of money expanding
6 the infrastructure. And I heard for the first
7 time that it is only 50 stations, which to me is
8 not a lot of stations.

9 I think we need to be clear to the
10 people who want to spend money and take the time to
11 bid for these funds that they have some surety
12 that they are bidding in an areas where there will
13 be favorable consideration by the Commission.
14 More specificity in this area would be helpful.

15 In the low-carbon category, which is the
16 greater than 40 percent reduction. We think
17 there's too much funding in this category. It is
18 the highest carbon footprint category. Strictly
19 hypothetically, if all of this was successful, we
20 spent all of our money and we ended up with a
21 natural gas and propane and biodiesel world out
22 there, it would guarantee failure of our 2050
23 goals because they just don't achieve enough
24 reduction.

25 So there needs to be a balance here

1 between the really effective but typically longer
2 term projects like in the super category, the
3 super-ultra-low category, with this category,
4 which admittedly is sort of ready to go, a little
5 bit more ready to go. So we would suggest
6 decreasing this by at least \$10 million a year,
7 which would essentially allow the first category,
8 the super-ultra-low, to be increased by \$10
9 million a year.

10 And once again, we would not be
11 supportive. I think we should take out so you
12 don't send the wrong signal to those who bid for
13 the development of advanced natural gas or propane
14 engines. I know EPA and ourselves funded as part
15 of a settlement, development of a couple of
16 engines a few years ago and those engines are
17 sitting in a box somewhere and they are not being
18 produced. And the reason they are not being
19 produced is because there is not a market for
20 them. So it's better I think to spend money on
21 incentives that might create the market and then
22 see if the manufacturers feel it is worthwhile to
23 invest in the engine development and technologies.

24 And also in the Plan we about a greater
25 than 40 percent greenhouse gas reduction for this

1 category but the propane and natural gas, as you
2 have heard today, are more like 20, maybe
3 optimistically 30 percent reduction. So there is
4 some I think correction or adjustment or
5 explanation needed in the Plan to explain how a 20
6 reduction in fuel ends up getting 40 percent of
7 the GHG reduction.

8 In summary, this is a great start. I
9 think it is really going to be a good backbone for
10 the final plan and to guide us through the first
11 few years. The improvements should be that the
12 funding allocations should be based on 2050 or at
13 least much more heavily on 2050 than on 2020
14 goals.

15 I can put it sort of bluntly is we have
16 a plan in place adopted by the ARB that shows how
17 to meet the 2020 goal with no alternative fuels.
18 So, you know, the question has to be, that that
19 creates generally a lower priority for achieving
20 that goal and it is not needed per se to achieve
21 the goal. It is clearly needed to meet the 2050
22 goal. And so we need to focus a little bit more
23 on that long term.

24 The allocations again should favor the
25 riskier technologies which have greater potential

1 and also have large market potential. And those
2 are the four that I laid out earlier, the electric
3 drive and the biofuels.

4 And we should increase funding in that
5 first category to at least \$10 million a year in
6 order to support the rollout of hydrogen light-
7 duty vehicle fuel cells.

8 That's our comments and we thank you
9 very much for the opportunity to present them.

10 PRESIDING MEMBER BOYD: Thanks, Tom.
11 Now there is mass confusion up here as to whether
12 or not we told folks this meeting would be over at
13 noon or not. The notice doesn't say it would be
14 over at noon. We have gone far longer than we had
15 hoped to but this is a rather, if not the ultimate
16 meeting, the penultimate meeting. I think maybe
17 it's the ultimate meeting.

18 I would like to just press on as much as
19 we can. However, if there are any Advisory
20 Committee members who truly have to leave, and
21 leave shortly, I would invite you to make
22 comments. If you can stay a little longer we'll
23 try to make our way through some of the
24 stakeholder comments until I pass out up here of
25 hunger or something or maybe we can just press on

1 as long as possible. But based on the number of
2 cards I have I think some of you are going to want
3 to probably take a break at some point in time.

4 I'm hearing you. Excuse me for not
5 remembering your name.

6 MS. ODABASHIAN: Elisa Odabashian.

7 PRESIDING MEMBER BOYD: Elisa,
8 certainly.

9 MS. ODABASHIAN: From Consumers Union.

10 We have been seeing a real drop in the
11 purchasing of hybrids since the gas price has gone
12 down so much so I am really interested in
13 incentives to create a market. Because if
14 consumers don't, you know, want to buy it all of
15 this is for naught. So it seems to me that a
16 substantial --

17 PRESIDING MEMBER BOYD: Do you want to
18 start a pool on when the gas price is going to
19 turn around and go back up?

20 (Laughter)

21 MS. ODABASHIAN: A substantial -- I
22 mean, consumers don't necessarily care about
23 lowering, you know, carbon problems. I mean, most
24 consumers don't frankly and they don't buy that
25 way. So my interest would be in seeing a of money

1 invested in education, incentives and outreach in
2 turning people's minds about the importance of
3 this.

4 MR. SHEARS: I just had a process
5 question. I'm wondering and I imagine some of the
6 other committee members are wondering. The next
7 step would be to organize some public workshops
8 around the state over the next four, six, eight
9 weeks. And then is the idea to come back with an
10 updated draft of the Investment Plan and to have
11 another meeting of the Advisory Committee? Or is
12 this being viewed as the last meeting of the
13 Advisory Committee? Before the other Committee
14 members have to shuffle off.

15 PRESIDING MEMBER BOYD: What is the
16 staff's view?

17 MR. WARD: At this point we have, we
18 have workshops scheduled to take the Investment
19 Plan out for review. This is a draft, we are
20 receiving comments now on this draft plan.

21 (Whereupon, Ms. Odabashian exited
22 the meeting room.)

23 PRESIDING MEMBER BOYD: Well, that's a
24 half an answer. I think, my understanding was
25 that we would take into consideration all we hear

1 today, both from the staff and from you all.
2 There would be a staff, there would be a Committee
3 Draft that would be publicly workshopped.

4 I am hoping it's not -- Well, I am
5 struggling with the time left to have yet another
6 meeting of this Committee and our ability to spend
7 the money that has been appropriated this year
8 versus for the next two years, it disappearing in
9 light of what is going on across the street. I
10 think we need to talk about it, I need to talk to
11 Commissioner Douglas.

12 I guess it is somewhat dependant on how
13 much disharmony we think we have heard today and
14 what kind of changes we think we want to
15 recommend. How fast we can make it available to
16 you and whether we can do another, whether we can
17 just receive your comments in writing vis-...-vis
18 holding yet another one of these committee
19 workshops.

20 Frankly I enjoy them, they are
21 interesting, but I am getting quite concerned
22 about the time line. People love to sweep money
23 away that you haven't spent and this program
24 doesn't run infinitely. So I think I'm struggling
25 a little bit with my years of experience in

1 government. And with that totally confusing
2 answer to your question.

3 MR. SHEARS: I recognize the urgency.
4 It's just a matter so everyone, all of the
5 stakeholders and Advisory Committee members can
6 sort of have at least a mutual vision, some vision
7 as to how we are going to proceed. So whether
8 it's as an Advisory Committee or there will be
9 another public workshop process after the
10 traveling road show brings back another draft, I
11 think that would help. Get clarification on that.
12 I respect what you are saying though.

13 MS. SHARPLESS: Not to put you on the
14 spot, Commissioner, but when would you propose to
15 take the Investment Plan to the Commission?

16 PRESIDING MEMBER BOYD: Peter or Mike?
17 We have a time table. We've got the road show
18 dates set. What's the current --

19 MR. WARD: We haven't actually set the
20 road show dates but we are saying --

21 PRESIDING MEMBER BOYD: My calendar has
22 got them on it.

23 MR. WARD: We are saying January and
24 then February adoption by the Energy Commission.

25 MS. SHARPLESS: Okay.

1 MR. WARD: I wonder if we can now move
2 to the stakeholder presentations.

3 MR. SWEENEY: Before you do that I would
4 like to just sign off. This is Jim Sweeney. I've
5 run out of time. But in signing out I just want
6 to throw a rifle shot across the bow a little bit.

7 I think what Tom Cackette was saying is
8 very, very important. I see an awful lot of
9 things focusing on reducing carbon dioxide
10 emissions in the short run and I frankly don't
11 believe that most of those are very important. I
12 think that the ones that are going to reduce
13 emissions over a long time are really where the
14 jugular should be.

15 That means in my mind, it seems like
16 moving towards -- I agree that retrofits are just
17 a short-term drop in the bucket which will make no
18 significant difference to long-term fixing the
19 problem. Whereas moving towards either hydrogen
20 or battery electric or plug-ins can make a lot of
21 difference. I actually believe that hydrogen is
22 not going to make it in the competition but that's
23 a market judgment at the end.

24 So I really hope that there will be re-
25 emphasis towards those that make a real large

1 difference in the long run and almost forget the
2 things that may be good in the short-term but will
3 not ultimately make a lot of difference. And then
4 I'll have to -- After doing that shot off the bow
5 unfortunately I just have to sign off at this
6 moment.

7 PRESIDING MEMBER BOYD: Thanks, Jim,
8 appreciate it.

9 MR. SWEENEY: Okay, bye-bye.

10 PRESIDING MEMBER BOYD: Appreciate your
11 participation.

12 All right. Well the first blue card I
13 have happens to be Honda. The first one in the
14 door.

15 MR. WARD: Robert Bienenfeld from Honda.

16 MR. BIENENFELD: Thank you Commissioner
17 Boyd and Commissioner Douglas for the opportunity
18 to share Honda's view on hydrogen infrastructure
19 needs with the Advisory Committee. We have been
20 out sharing this information with DOE, some
21 universities, the Fuel Cell Partnership, the Air
22 Resources Board and the Energy Commission and we
23 were asked and encouraged to share it with the
24 advisory group here, publicly. So I want to thank
25 you for the opportunity to do so.

1 Actually the last couple of days we had
2 the FCX Clarity here in Sacramento for some ride
3 and drives. We have introduced our first
4 deliveries this last year. We have delivered four
5 so far. We are focusing on the retail market as
6 you may have heard. Obviously we are trying to
7 create retail communities where there's access to
8 infrastructure where driving patterns permit it.

9 We have established three Clarity
10 dealerships in Santa Monica, Torrance and Costa
11 Mesa and they have full responsibility for sales,
12 service, parts and customer relations. They are
13 the people who are actually making the deliveries
14 of the car, who are meeting with customers and
15 explaining the technology. These are all really
16 important steps in this pre-commercial effort.

17 And just as important we have a fuel
18 cell production factory in Japan. It is
19 exclusively producing the Clarity, formerly
20 produced the Insight and NSX and is now producing
21 the Clarity. And we have some mass-production-
22 type technology producing our fuel cell stacks and
23 their components. And all of these are very
24 important innovations.

25 What we are trying now is shift our

1 infrastructure paradigm from chasing hydrogen
2 infrastructure to making it more market driven.
3 What we are faced with right now is we have cars
4 that are being produced and coming into the market
5 in the next few years. And we are trying to find
6 out where there are good stations and then build
7 communities around them.

8 And that's a little bit backwards. What
9 we really need to do is be building hydrogen
10 communities where we have target customers with
11 the demographics, the mind set, the emotional
12 appeal to adopt this vehicle and make it
13 sustainable. We found from years and years of
14 experience with alternative fuels that it really
15 is important that neighbors can tell neighbors
16 that they can see in their community where they
17 can refuel and drive the car. And when more and
18 more people see the car it becomes more familiar
19 and less foreign.

20 Our concept for market driven
21 infrastructure is something we call the Cluster
22 Concept where we have identified the communities,
23 key corridors, highways between communities and
24 destinations like work centers, resorts and
25 airports.

1 The Cluster Concept, what is important
2 in that is that we establish some redundancy and
3 backup. We can't have one station in Santa Monica
4 and one station in Torrance and one in Irvine. If
5 there's some repair or some down time then our
6 customers in Santa Monica are dead in the water.
7 They need to see that there's a station within
8 five minutes of their residence and a backup
9 within 15.

10 We think that within a community it is
11 important to have an image or marquee station
12 where as we have with the Santa Monica station,
13 where interested groups go on field trips and
14 actually get some education. They create quite a
15 positive image for the community. And then maybe
16 some smaller convenient community stations which
17 can, which can be scalable and grow as demand
18 grows. It is also important that we have a mix of
19 35, stations for 35 and 70 max pressure when full.
20 And diverse technologies and sizes.

21 As I mentioned we have identified
22 through consumer interest on our website some key
23 markets. Santa Monica, Torrance and Costa Mesa,
24 the Irvine, Newport Beach area.

25 And this is Honda's private forecast of

1 estimated industry volumes. We think that it is
2 consistent with what has been published recently
3 by the California Fuel Cell Partnership. And they
4 are also doing a study which is in process now and
5 we think we will be close to this.

6 So we see really hundreds of new
7 vehicles in the next few years. And each year
8 being introduced to the market leading to
9 thousands on the road in 2012. And possibly as
10 early as 2014, 1,000 cars introduced in a year.

11 But when we combine this with the
12 infrastructure that is available we see that we
13 are out of capacity by mid-2010. And with a
14 station lead time of one and a half to two years
15 this really puts us at a critical moment right
16 now. We need publicly accessible retail-oriented
17 stations in clusters, as I mentioned. We think we
18 need one, new 100 kilogram per day station per
19 quarter, that's per quarter, coming on-line from
20 mid-2010 on. And we think that that will keep up
21 with the supply that we expect.

22 I'm sorry, let me go back to that and
23 just say that we really concur with what Tom
24 Cackette just said about the need for
25 infrastructure. We think it's eight to ten

1 stations. As staff said, eight to ten stations.
2 Staff mentioned that as a mix of retail as well as
3 fleet oriented. We think that's eight to ten,
4 that we need eight to ten retail oriented stations
5 alone. And at a, at a price of anywhere from two
6 to four million a station that follows the
7 estimates very closely, which Tom Cackette and the
8 Air Resources Board have, have just proposed.

9 We think the well to wheel emissions for
10 fuel cell vehicles is very, very positive. This
11 is an analysis we just published based on the most
12 recent GREET analysis. And it shows that even
13 with the US average electricity mix, and even the
14 cleaner California energy mix, that methane/steam
15 reforming fuel cell production can achieve
16 emission reductions of 52 percent. And with
17 renewables that can be driven even further. So we
18 think the story is quite promising.

19 So in addition -- I have heard a lot of
20 discussion about where does government put their
21 money? Do they put money -- How do we leverage
22 it? Do we put money where industry is or do we
23 put money where industry isn't?

24 And the good news is that with hydrogen
25 fuel cells you actually are doing both because

1 there is a tremendous investment by the vehicle
2 industry to build hydrogen fuel cell vehicles and
3 that's where industry is putting money. But there
4 isn't money being put in, certainly not enough
5 industry money being put into the infrastructure
6 side. So whichever side of that equation you fall
7 out the role of government, it really fits -- both
8 issues fit the needs for fuel cell vehicles.

9 So thank you very much and I am happy to
10 answer any questions.

11 PRESIDING MEMBER BOYD: Questions?
12 Will.

13 MR. COLEMAN: I just have a quick
14 question. How much do these vehicles actually
15 sell for?

16 MR. BIENENFELD: We are leasing them on
17 a three to five year lease for \$600 a month.

18 PRESIDING MEMBER BOYD: Any other
19 questions from Advisory Committee members?

20 MR. BIENENFELD: Thank you very much.

21 PRESIDING MEMBER BOYD: Thank you,
22 Robert. Next I have Matt Miyasato with South
23 Coast District. Dr. Miyasato.

24 DR. MIYASATO: Thank you, Commissioners
25 Boyd and Douglas for allowing South Coast to

1 present our comments, our staff comments on the
2 Draft Investment Plan. I would also like to thank
3 the Advisory Committee members here, in person and
4 on the phone. If you can't see me I'm behind the
5 monitor, just to let you know where that voice is
6 coming from.

7 (Laughter)

8 DR. MIYASATO: But this is the AQMD
9 staff's input to the AB 118 Investment Plan that
10 your staff has put together.

11 We first want to acknowledge the
12 monumental effort that has been placed before the
13 staff, the Advisory Committee and the
14 Commissioners in that you have got to balance all
15 these challenges in terms of having to distribute
16 the money. What the priorities are, what year are
17 you going to pick, 2020 or 2050.

18 But specifically looking at
19 opportunities for expending the funds in an
20 efficient manner, especially if you're looking at
21 these first two years and what mechanisms you are
22 going to use to expend those funds.

23 And then the two key areas really, to
24 develop and deploy innovative technologies, I
25 think is interesting because it plays into the

1 things that we think as a local air district can
2 help the state and the CEC with that task.

3 Specifically we wanted to start off with
4 our support for the staff's Draft Investment Plan
5 and their contributions in the different
6 categories. We thought it was a difficult task
7 for them to balance these near term opportunities,
8 which is really the deployment aspect that has
9 been recognized, with also putting some funding
10 toward long-term technologies in super-ultra-low-
11 carbon technologies, which we also support.

12 So we have a similar challenge as the
13 Energy Commission in that we are looking at both
14 near-term and longer-term technologies and we
15 think they have struck a balance. Specifically in
16 looking at natural gas, electric and hydrogen for
17 the longer-term technologies and efficient, energy
18 efficiency with hybridization.

19 We think also as AQMD, because these
20 align well with many of our programs, we would
21 like to demonstrate how we might be able to help
22 the Energy Commission and the staff in achieving
23 an efficient administration of those funds.

24 Particularly we have two programs so we
25 like to think of two different tips of the spear

1 to advance the commercialization of pre-commercial
2 technologies, that's going to be our research
3 program. And also the administration of incentive
4 funding that we get through the state to advance
5 or deploy a great number of commercial
6 technologies.

7 But we would like to demonstrate our
8 capabilities in that respect and then at the end
9 of the presentation quickly, as you have in the
10 handout, some project ideas. And these ideas and
11 suggestions are based on what we believe are
12 things that we could execute very rapidly based on
13 our discussions with technology providers but also
14 based on our experience in working with the
15 different entities.

16 Many of you know the South Coast Basin
17 and I won't draw on this but we have the largest
18 air district in the nation. But with all of the
19 different factors conspiring against us we also
20 have the worst air quality in the nation.

21 This is just a map of ozone showing that
22 the poor folks out in San Bernardino on many hot
23 days of the year are suffering from very unhealthy
24 air quality.

25 On top of that if you look at the cancer

1 risk estimates based on our multiple air toxics
2 exposure study, the cancer risk is actually
3 increasing in some portions of the basin, most
4 notably down by the ports and also in the inland
5 regions. And that is mostly due to uncontrolled
6 diesel sources and also increased diesel traffic
7 in and out of that region.

8 So as we look from an air quality
9 perspective how do we transition to the
10 sustainable future and mobility we are also tasked
11 with looking at near-term and longer-term
12 technologies. We need to balance that. And we
13 have been tasked by our Board to look for
14 technologies that offer co-benefits. And we found
15 that many of the technologies do offer these co-
16 benefits in terms of reduced air quality, improved
17 air quality, but also reduce greenhouse gas
18 emission reductions as well as reduction of
19 petroleum dependence.

20 So if we look at our research program
21 and our incentive program through the lens of AB
22 118 we found -- and this is a bit of an eye chart
23 but it is in your handout. We found that many of
24 the projects and priority areas that our board has
25 identified aligned well with the so-called buckets

1 or technology areas that have been identified in
2 the Investment Plan.

3 So we are noting here the fuel economy
4 improvements. There's a multitude of projects.
5 You can look through low-carbon vehicles, ultra-
6 low-carbon and then super-ultra-low. So all of
7 these projects in technology areas that we have
8 outlined here are identified in our plan, in our
9 research plan as well as part of our incentive
10 program.

11 To go into more detail about those two
12 specific aspects. The incentive program that you
13 all are familiar with. The Carl Moyer program,
14 our School Bus program and the Proposition 1B.
15 And again, these are for commercial technologies
16 and for deployment and these are things that can
17 happen rather quickly.

18 Our research program is things that are
19 more concerned with the super-ultra-low-type
20 technologies, plug-in hybrids, fuel cell hydrogen,
21 et cetera. And those are for longer term
22 reductions. What we do, what we want to stress
23 here is that these are multimillion dollar
24 programs that we administer concurrently.

25 I liked really what Tim Carmichael said

1 is the technology approach. We try to adopt that
2 and then balance the need for near-term and
3 longer-term reductions. But also looking for
4 pathways and also transition strategies. How do
5 we get from where we need to be in 2020 or 2030
6 with what's available today.

7 And we like to leverage what's the
8 existing infrastructure, what we call sub-costs,
9 in geographic locations. So we have an
10 opportunity in our region to really amplify the
11 natural gas infrastructure and existing fleets
12 that are using trucks and are actually over-
13 subscribed with potentially using natural gas or
14 CNG.

15 Just to give a highlight in terms of the
16 volume of work that we produce in the region.
17 This is five year contract totals. It shows the
18 number next to the title. For example, School Bus
19 is 106 contracts during that five year period, Car
20 Moyer 237, and Clean Fuels 236, with the total
21 dollar amounts that were expended. And just to
22 show that we had the resources and staffing and
23 wherewithal to handle a large number of projects
24 and multimillion dollar contracts.

25 And so what we are offering to the

1 Commission is that we have staff resources and the
2 processes experience, et cetera. But also the
3 stakeholder network to help administer some of
4 these programs if that's, if that's the
5 Commission's desire. Embedded in all of this is
6 also outreach and education and workforce
7 training. Things that we do on a regular basis as
8 our outreach to local municipalities and
9 communities.

10 And then the final few slides are
11 showing what we believe are things that could be
12 executed rather quickly, certainly within the time
13 frame that's given in the two to four years of
14 the, these first two years of grant funding.

15 Heavy-duty natural gas incentives. We
16 believe that there's a large number of fleets,
17 especially down at the ports, where they could
18 take advantage of that. We found and worked very
19 closely with the ARB in the Prop 1B early grant
20 process to do 132 natural gas drayage trucks. And
21 there are more opportunities in that regard so we
22 believe that we could do more of that type of
23 vehicle.

24 (Whereupon, Ms. Hicks exited the
25 meeting room.)

1 Tim also mentioned natural gas school
2 buses. That is something else we would like to
3 incentivize. And then we are going into other
4 types of activities where we would be able to use
5 some of our research funding to also complement
6 what other entities such as the CEC through the AB
7 118 process could provide.

8 Getting on to the super-ultra-low-carbon
9 technology projects. We have been strong
10 proponents, as you know, for plug-in hybrids, fuel
11 cells and hydrogen. And we are simply saying that
12 co-funding by the CEC could help amplify some of
13 these projects, especially within our region.

14 For hydrogen infrastructure we agree
15 with all the comments. That really needs to be
16 assisted in order to get more vehicles out on the
17 road and in particular in our region because we
18 know that's where there is going to be a target
19 market.

20 And then finally fuel economy
21 improvements. We have already started some
22 hydraulic hybrid demonstrations in terms of
23 parallel and series. And again more funding would
24 help to do more fleets, more demonstrations and
25 get that commercialized more quickly.

1 So finally I just wanted to wrap up
2 knowing that there's probably stomachs growling as
3 loud as mine. We support these early reductions,
4 especially the low-carbon category, because we
5 believe that's a bird in the hand. You can get
6 some emission reductions immediate rather than
7 putting money on the shelf or waiting for
8 something to materialize.

9 We believe there's synergies in both of
10 our programs, even though ours is specifically
11 targeting criteria pollutant emission reductions.

12 There's certainly enough greenhouse gas
13 emission benefits and petroleum reduction in many
14 of those technologies that it makes sense to
15 partner and we offer our experience and resources
16 to do that.

17 And finally, we would like to
18 collaborate, obviously, with the CEC to help
19 implement your goals and our goals concurrently.

20 And then finally, this is just a vote of
21 confidence. Together I think we all can do it so
22 let's get it started.

23 PRESIDING MEMBER BOYD: Thanks Matt.
24 Any questions for Matt? All right.

25 Dave Modisette, California Electric

1 Transportation Coalition.

2 MR. MODISETTE: I'm Dave Modisette with
3 the California Electric Transportation Coalition.
4 I want to thank the Commissioners and the Advisory
5 Committee for this opportunity. I am going to cut
6 my presentation short just in the interest, in the
7 interest of time. There are some hard copies
8 there if you want to see the, if you want to see
9 the whole thing.

10 Some people have also made the main
11 comment that I am going to make. What happened,
12 you know, to us. I am going to focus my comments
13 on the super-ultra-low-carbon fuels category.

14 These two tables are right out of the
15 Investment Plan, pages six and ten. And what
16 happened while we were reading the Plan is that we
17 looked at these percentage reductions here for the
18 super-ultra-low-carbon fuels and they seemed much
19 lower than what we have seen in the past both from
20 the Energy Commission staff and from the TIAX
21 presentation that was presented to the Advisory
22 Committee last July.

23 So you can see on the top is light-duty
24 emission reductions and it shows a 33 percent
25 reduction in emissions in light duty. And then

1 even more surprising, once you go down to Table 3,
2 which is a combination of light-duty, medium- and
3 heavy-duty, that percentage decreases to just 60
4 percent of the total, of the total program
5 reductions.

6 So we were kind of scratching our heads
7 saying, well what's going on here? And there's
8 two things I guess that I want to call to your
9 attention here. First of all is the time frame
10 which is on these charts. It's the 2009 to 2020
11 time frame. And a number of you have commented
12 that we need to be looking more than this. But
13 that's probably the principal reason of why these
14 percentages are as low as they are for the super-
15 ultra-low-carbon category.

16 The second thing is, and I don't really
17 know the answer to this, but there is something
18 going on with the math in terms of the addition of
19 the medium- and heavy-duty categories. If you
20 look at, if you look at those categories over the
21 entire spectrum of the program, that is through
22 2050, the medium- to heavy-duty category is going
23 to be about a fourth of the greenhouse gas
24 reduction as the light-duty category.

25 But for some reason in this early time

1 period you are getting, you are actually getting
2 more greenhouse gas reductions in the medium- and
3 heavy-duty category according to the staff's
4 numbers than you are in the light-duty category.
5 And that doesn't really make sense to me. It
6 doesn't seem like it's correct but I haven't been
7 able to figure that out.

8 But you can see what happens when that,
9 when that is added in. That is, that the medium-
10 and heavy-duty priorities kind of wash out the
11 light-duty priorities and you get this, you know,
12 what I actually think is kind of a strange
13 allocation of emission reductions. And the reason
14 this is important is because, is because these
15 emission reductions are used then to determine the
16 appropriate funding levels in these various
17 categories.

18 All I have done here is I have kind of
19 repeated the emission reduction percentages which
20 were in Table 3. Again, the 2009 to 2020 emission
21 reductions and then I put the proposed funding
22 recommendations over the two year period. So you
23 can see for super-ultra-low-carbon it's 23 percent
24 of the total funding recommendation, ultra-low is
25 13 percent, low-carbon is 35 percent, fuel economy

1 is 13, these non-GHG categories are 11 and
2 production incentives is 6 percent.

3 Now this is a slide right out of the,
4 right out of the Investment Plan. This shows the
5 entire greenhouse gas emission reductions over the
6 length of the, of California's goals through 2050.
7 What I want you to notice is that the top four
8 categories here are the ones which can be affected
9 by the AB 118 incentive program.

10 So the purple lines are the ultra,
11 excuse me, the super-ultra-low category. You can
12 see it's the largest category. Secondly is the
13 low-carbon vehicles, that's the green category.
14 That red dotted line, these are the low-carbon
15 vehicles. And then lastly the slightly blue
16 category is additional fuel economy.

17 What I want you to do though is to take
18 a look at the 2020 line, the 2020 bar, and think
19 of that as a line across the graph. Now the
20 question I want to ask you is, do you only want to
21 look from that bar to the left when you are making
22 your funding recommendations or wouldn't it be
23 better to look at the entire picture? So rather
24 than just looking from the 2009 to 2020 bar, why
25 not look across the whole spectrum of the program.

1 This is the same chart from the
2 Investment Plan for the medium- and heavy-duty.
3 In this case there are three categories that you
4 can influence through this program. Starting with
5 the top again there's the super-ultra-low-carbon
6 category, there's the low-carbon vehicle category
7 and then there's the blue, the light blue is
8 additional, is additional fuel economy. But again
9 look at that 2020 line. Do you want to be only
10 making decisions from 2020 and left or do you want
11 to, again, be looking at the whole picture of
12 emission reductions?

13 So this was a table that was generated
14 by the CEC staff for the light-duty vehicle
15 category. In my opinion this gives you the full
16 picture across all of the years. This shows you
17 the percentage reduction from 2009 through each of
18 those years. So the 2020 number is just, you
19 know, what you have seen before in the staff's
20 analysis.

21 But look what happens through 2030,
22 through 2040 and through 2050. So the 2050 number
23 is what is giving you the entire reductions
24 across, across that entire time period in these
25 various categories. And you can see the super-

1 ultra-low-carbon category increases dramatically
2 from 33 percent up to 56 percent, all of the other
3 categories decrease across this, across this time
4 period.

5 This is a slide from the TIAX
6 presentation that was presented to the Advisory
7 Committee back in, back in July. And they used
8 slightly different terminology because the Energy
9 Commission's staff's terminology had not been
10 developed yet.

11 But it bears a striking resemblance to
12 the emission reductions that we need if you look
13 across the entire spectrum of the greenhouse gas
14 emission reductions from 2009 to 2020. So what
15 TIAX calls advanced vehicle technologies, which is
16 really the super-ultra-low category, you can see
17 here in their constrained analysis they are
18 recommending 54 percent of the funding go to that,
19 go to that category.

20 Similarly, improved vehicle efficiency.
21 Similarly, improved vehicle efficiency in the
22 Energy Commission's analysis. If you look across
23 the entire spectrum of the program the Energy
24 Commission staff said 22 percent. You can see the
25 TIAX analysis is 21 to 25 percent.

1 Blended biofuels. That's the, that's
2 the ultra-low category. The Energy Commission
3 staff said 21 percent if you look across the
4 entire program, here it's 22 to 16 percent.

5 And then lastly, the low-carbon fuels in
6 the constrained scenario is five percent in the
7 TIAX analysis and in the Energy Commission staff
8 analysis over the entire program is two percent.

9 So we do think that that is great
10 consistency. I guess the final point I want to
11 make, particularly with this TIAX slide, as you
12 can see they did two types of analysis. They did
13 what they called an unconstrained scenario which
14 is where there is no consideration given to
15 possible constraints of feedstock and fuel supply,
16 and vehicle penetration. And then they modified
17 that using what they called the constrained
18 scenario.

19 And there is actually quite a big
20 difference between the two. If you look at the
21 Energy Commission staff's analysis they say up
22 front that all that they have done so far is the
23 unconstrained analysis. And so one of the
24 recommendations I think we would like to make is
25 that you now take that unconstrained analysis and

1 add in some of the real-world constraints that we
2 know we are going to have, particularly with
3 biomass feedstocks and other feedstocks in the
4 future.

5 So my conclusion, and this is where I am
6 going to end the presentation, is that we think
7 the analyses both by the Energy Commission staff,
8 again looking over the entire spectrum of the
9 program, demonstrates a large need for successful,
10 super-ultra-low-carbon vehicles to meet
11 California's greenhouse gas reduction goals and
12 the AB 118 investment in these vehicles should be
13 increased to better reflect their contribution to
14 the 2050 goal.

15 Let me just say that the rest of my
16 presentation that I am not going to go through
17 today does provide specific recommendations in the
18 electric drive category for funding in vehicle
19 deployment, in infrastructure deployment, in
20 demonstration and also in R&D.

21 So with that, thank you very much. I
22 would be happy to answer any questions.

23 PRESIDING MEMBER BOYD: Thank you Dave.
24 Questions? Seeing none, thanks Dave.

25 Pete Price, California Natural Gas

1 Vehicle Coalition.

2 MR. PRICE: Thank you very much. I
3 really appreciate everyone's forbearance. I think
4 I am the last presenter and I'll go as quickly as
5 I can.

6 PRESIDING MEMBER BOYD: Oh no, you are
7 long from the last.

8 (Laughter)

9 MR. PRICE: With a presentation. I
10 think there's a number of other people with
11 comments too. In any rate, I'll be as quick as I
12 can, I know everyone is anxious.

13 But we have also been anxious -- I'm
14 Pete Price with the California Natural Gas Vehicle
15 Coalition. And since the last Advisory Committee
16 meeting we have been anxious to come and make a
17 few comments when at that last meeting there was a
18 preliminary funding proposal that was very low,
19 extremely low for natural gas. And based, we
20 think, in part at least on a faulty pathways
21 analysis for natural gas, which I am going to
22 discuss a little later.

23 The California Natural Gas Vehicle
24 Coalition does support this latest Draft
25 Investment Plan. And even though we do think that

1 it understates the potential for biomethane, which
2 I am going to speak about a little later.

3 But we do think they have kind of gotten
4 it right on this question about 2020 and 2050,
5 frankly. We don't see this big, bright line
6 between 2020 and 2050. I think we are going to
7 get to 2050 by being successful and getting to
8 2020 first.

9 As the Plan itself says, a funding
10 strategy that emphasizes 2020 goals spurs
11 commercial development of market-ready clean fuels
12 and technology, which fulfills 2020 state mandates
13 and maximizes reductions of GHG emissions in the
14 earliest time frame possible and then goes to
15 build the foundation to achieve 2050.

16 We believe that natural gas has an
17 important role to play in meeting both of these
18 targets. We have long argued that natural gas and
19 natural gas vehicles are a bridge to hydrogen.
20 Conventional natural gas is clean, low-carbon.
21 It's affordable, it's market-ready available
22 today. It meets the 2020 LCFS requirements today.

23 And renewable -- For 2050, renewable
24 biogas from landfills, animal waste and wastewater
25 treatment qualifies as a super-ultra-low-carbon

1 fuel. And in the process it will convert an
2 environmental problem, uncontrolled methane
3 emissions from these sites, into a valuable
4 resource and greenhouse gas solution.

5 For the sake of time I am not going to
6 spend much time on this but I think that it is
7 well-established that natural gas is an inherently
8 cleaner fuel in criteria air pollutants than
9 gasoline or diesel.

10 But now the work of the ARB through
11 these GREET analyses, they have now quantified the
12 carbon intensities of various fuels. And this is
13 the carbon intensity of diesel, gasoline and --
14 that's North American natural gas according to the
15 ARB's GREET analysis of natural gas. That's 29
16 percent lower than the carbon intensities for
17 diesel or gasoline.

18 MR. SHEARS: And Pete, just for
19 clarification, that's grams carbon per megajoule
20 of energy.

21 MR. PRICE: Correct, okay. That's
22 right. You mean what the numbers are referring
23 to, that's correct. Yes, okay.

24 And then when you add in biogas, and
25 this is based on the numbers from the ARB's GREET

1 analysis of landfill gas, it is an extremely low
2 11. It's a number 11 on carbon intensity.

3 Natural gas is low cost. These numbers
4 at the top reflect an averaging of quarterly
5 reports from the Clean Cities Survey and on a
6 gasoline gallon equivalent over the last roughly
7 year. You can see that CNG has been about 89
8 cents less expensive per gallon equivalent than
9 gasoline, about \$1.11 less expensive than diesel.

10 Prices are even lower in high-use fleet
11 applications where there's dedicated fueling for
12 those fleets. And of course lowest of all in home
13 refueling applications.

14 And TIAX in 2005 did a study showing
15 that natural gas vehicles have a significant life
16 cycle cost advantage, even when crude oil is
17 priced relatively low. It's extremely low right
18 now. I think we all expect it to go above \$60 a
19 barrel anytime soon. But even at prices much
20 lower than that, refuse trucks, transit and other
21 trucks have a break-even price of oil that's much
22 lower, in the \$20 or \$30 range where they become
23 cost competitive.

24 Wow, this does not look like what I
25 expected it to but it's a message you have seen

1 before. Almost all natural gas comes from North
2 America. Almost all of it comes from the United
3 States as a matter of fact, 85 percent. Almost all
4 of the rest comes from Canada.

5 And with the development of new gas
6 shale supplies in the US and a significant price
7 penalty that is attached right now to the
8 international cost of natural gas compared to the
9 US price, frankly predictions about big gas
10 imports into the US have kind of fallen off the
11 table. Some time in the future we expect that the
12 US will if anything be a gas exporter, not an
13 importer.

14 Current sources of natural gas into
15 California include Canada, the Rocky Mountain
16 areas, the Midwest and the Permian Basin. And
17 then a somewhat significant amount from in-state
18 production.

19 And that brings us to, I want to discuss
20 briefly the ARB's pathway analysis for natural
21 gas. What this shows here is that the ARB
22 analyzed eight identified pathways for natural gas
23 into California. Five CNG pathways, those are the
24 five on the left, and three LNG pathways. And
25 there are three that are significantly lower in

1 carbon intensity. The baseline zero is comparing
2 to diesel, versus carbon diesel. And you can see
3 that California and North American natural gas is
4 significantly lower in carbon intensity.

5 Some of the others from distant parts of
6 the world are much less so. But the point to be
7 made here is that California isn't receiving any
8 natural gas from those five sources on the right.
9 All of our natural gas right now is coming from
10 California or North America.

11 And I should say that the ARB, the
12 analysis by the ARB also did not look at what we
13 think is one of the most significant pathways to
14 the future, which is biomethane. And if you
15 rearrange that to look at the pathways that are
16 actually current in California, plus what we
17 expect to be a significant contributor in the
18 future, you get lower carbon intensity. Of course
19 the extremely low, super-ultra-low-carbon
20 intensity for biogas.

21 So just a few points about renewable
22 biogas. These are just a few photographs of the
23 three main sources, landfills, feedlots and
24 wastewater treatment.

25 This goes into more detail. I won't

1 hesitate here with more detail into how the ARB
2 achieved or arrived at its number of well to
3 wheels emissions of 11 grams per CO2 equivalent
4 per megajoule as John said.

5 So the question is, how much biogas,
6 renewable biogas is available in California? It
7 turns out there's quite a bit. Technically the
8 feasibly recoverable biogas from landfills,
9 landfills and wastewater treatment is about 106
10 bcf, dairy waste 15, about 121 bcf overall.

11 Well what does that mean? That amount
12 of recoverable biogas could displace the
13 equivalent of 29 percent of the diesel currently
14 used for transportation in California. We use
15 about three billion gallons of diesel a year. So
16 121 bcf of gas equals about 860 million gallons on
17 a diesel gallon equivalent. And that would result
18 in a reduction of more than eight million metric
19 tons of CO2 equivalent.

20 And there is a new emerging treatment of
21 biogas through gasification and methanation, which
22 actually has even greater feedstock capacities.
23 It has been projected by the Energy Commission,
24 the CEC, up to 250 billion cubic feet. And if you
25 add all of that together you get truly significant

1 displacement numbers and GHG reductions.

2 Biogas development is occurring in
3 California and outside at landfills. I just put
4 in a slide of what's going on in Europe because
5 there are some places in Europe where they are
6 clearly showing, providing a model for how we
7 could draw out the sort of biogas development and
8 distribution infrastructure.

9 What about vehicles? There are --
10 California has more natural gas vehicles than any
11 other state. Still, compared to worldwide, not
12 that many. There are about 8.6 million natural
13 gas vehicles worldwide. And the relative low
14 numbers of natural gas vehicles in California and
15 the US are -- this is not an inherent problem.
16 This is not inherent to natural gas.

17 As a matter of fact, in other countries
18 we have about 20 different OEM manufacturers who
19 are producing natural gas vehicle models. GM
20 alone makes 18 different natural gas vehicle
21 models worldwide.

22 The next time the Governor goes home to
23 Austria he can choose from one of 28 factory
24 models that are available in Austria.

25 Here's just a number of applications.

1 There are many applications of natural gas
2 vehicles from light- to heavy-duty.

3 Very quickly on infrastructure. There
4 is a -- I will say more than I was going to about
5 this because it's come up today. There is a
6 built-out infrastructure of natural gas fueling in
7 the state. More than 400 fueling stations, both
8 public and private.

9 And to the extent that we move to these
10 advanced technologies and fuels and vehicles.
11 First through fleets. As we have done with
12 natural gas, it seems to us it makes perfect sense
13 to look at those existing refueling stations as a
14 place to co-locate hydrogen and make that a
15 fueling bridge to hydrogen. Because we would
16 think you are likely to see the first applications
17 of hydrogen in fleets as well.

18 And I really apologize for what I
19 thought was a nifty little product here. The
20 projection is not so good.

21 So what do we need? This will be my
22 last slide. We agree with many of the CEC's
23 recommendations, incentives for light-duty,
24 medium-duty, heavy-duty natural gas vehicles both
25 for OEMs and the outfitted vehicles, particularly

1 in some of the light-duty fleets. For example,
2 those are filling a gap right now in Southern
3 California, taxi and other kinds of fleets.

4 We support development of the advanced
5 medium- and heavy-duty natural gas engines and the
6 fueling and fuel storage technologies.

7 We agree with the comments about not
8 letting the current public investment in
9 government and school fleets wither away. Let's
10 not lose that investment. Strengthen it by making
11 sure they remain viable.

12 Of course probably our main goal along
13 with the vehicle incentives is to provide
14 incentives for development of biomethane. We
15 think this is just -- Biomethane is going to have
16 to play a big role and should be designated as a
17 super-ultra-low-carbon fuel.

18 Also want to promote, as folks have
19 said, the mixed use of hydrogen and hydrogen/CNG
20 blends as just one more way that the natural gas
21 does serve, we think, as a bridge to the hydrogen
22 transportation economy.

23 That's the end of my comments, thank you
24 very much. I'll take any questions.

25 PRESIDING MEMBER BOYD: Thanks, Pete.

1 Any questions? Yes, Will.

2 MR. COLEMAN: In the Investment Plan we
3 saw a reference to, we saw several references to
4 the fact that there are existing incentives.
5 There is a 50 cent tax credit for natural gas,
6 there's a number of other things in place and that
7 those things tend to be under-subscribed. Given
8 what you were talking about in terms of the
9 economics of the fuel and the availability of
10 infrastructure can you shed a little light on why
11 that is.

12 MR. PRICE: Well a tax incentive
13 wouldn't be under-subscribed, it would apply to
14 anyone who uses the fuel. What else were you
15 referring to?

16 MR. COLEMAN: There were other
17 mechanisms but I -- I can't remember exactly what
18 they were but they were referred to in the
19 Investment Plan and they were under-subscribed.

20 MR. PRICE: I am not aware of -- I know
21 that the Carl Moyer program, for example, is not
22 effective for natural gas anymore because of the
23 methodology that is used and we find that being
24 much less applicable today. That's not because it
25 is under-subscribed. I am not aware of any other.

1 And there have been a number of grant
2 programs in the past number of years where as a
3 matter of fact natural gas proposals have been
4 over-subscribed by two or threefold.

5 I am not sure what you are referring to.
6 I'd be happy to discuss it with you later.

7 MR. COLEMAN: I'll find the reference,
8 thank you.

9 MR. PRICE: Okay. Thank you.

10 PRESIDING MEMBER BOYD: Thanks, Pete.
11 Mike Harrigan, Coulomb Technologies.

12 MR. HARRIGAN: I'm Mike Harrigan, I'm
13 from Coulomb Technologies. We make electric car
14 charging stations so this is in support of
15 electric drive and supporting the development of
16 the public access electric charging stations.

17 So just to give you a quick overview of
18 Coulomb, we have a product that we call the
19 Smartlet and the public thinks of it as the
20 ChargePoint Network. It is a system of managed
21 electric car charging stations that are put in
22 public spaces. If you Google chargepoint.net you
23 will see some articles on us recently because we
24 just installed our first stations in the city of
25 San Jose.

1 Our model is unique in that people who
2 use these stations subscribe to them, and the
3 revenue that we get from that subscription pays
4 for the electricity, the purchase of the stations
5 and maintenance of the stations. So that revenue
6 model is important because that provides a way of
7 perhaps paying back money that might be loaned to
8 various entities for the installation of these
9 stations.

10 So I have a -- I won't go into much more
11 detail because I am really kind of speaking for
12 the subscription model for electric charging
13 stations in general but I do have some
14 recommendations for AB 118 funding in this area.

15 And that is that there are actually
16 about 2,000 existing electric car charging
17 stations in the state today. We know where they
18 all are. They supported the previous generation
19 of electric cars like the EV-1 and so forth but
20 they don't work with the coming generation of
21 plug-in Priuses and Chevy Volts and the Prius
22 conversions and so forth.

23 So one recommendation would be to spend
24 some money to either replace or supplement these
25 stations with the new generation of stations such

1 as the ones we are developing.

2 I mentioned that we have a revenue,
3 subscribers actually subscribe to this and pay
4 money to charge their cars. So that revenue
5 typically flows back to the property owner where
6 the stations are installed. But of course we have
7 a chicken and egg problem with charging stations
8 as well all recognize.

9 And one of the things that we could do
10 with AB 118 money would be to provide loans or
11 loan guarantees to these either municipalities or
12 private property owners to install charging
13 stations so that as the revenues start flowing
14 when the cars start coming they have a means of
15 actually repaying their loans.

16 We also believe that there's a lot of
17 California cities that are extremely interested in
18 kind of leading the way in electric charging
19 stations so we imagine the possibility of a grant,
20 maybe a small grant to California cities that
21 would be interested in putting charging stations
22 in their public access parking spaces, much the
23 way San Jose has taken the lead this year.

24 And the last suggestion would be the
25 possibility of a tax credit for private companies

1 who want to incentivize their employees to drive
2 low emissions vehicles to work, electric vehicles
3 to work. Typically people when they drive their
4 electric vehicle to work they like to be able to
5 charge it before they go home.

6 And we are trying to talk to companies
7 such as -- forward thinking companies such as
8 Google and some of the other Silicon Valley
9 companies. But large companies in general.
10 Anybody who has a large parking campus to put in a
11 certain number of electric charging stations. And
12 those companies could benefit from a tax incentive
13 that would, that would help defray the cost of
14 these charging stations in the early days.

15 So that's our story. I hope that you
16 will take that into consideration and I'll answer
17 any questions.

18 PRESIDING MEMBER BOYD: Thank you.
19 Questions?

20 MR. HARRIGAN: Thank you.

21 PRESIDING MEMBER BOYD: All right, the
22 hour of one o'clock having been reached. My
23 inclination is to declare a one hour lunch hour
24 here. We have nine more cards, we have heard from
25 six people. I am willing to press on but maybe

1 some people aren't. What's the disposition of the
2 Advisory Committee, I defer to you. The audience,
3 they are just stuck with whatever we do.

4 (Laughter)

5 MS. DIN: Press on.

6 PRESIDING MEMBER BOYD: Press on.

7 There's one vote for press on.

8 UNIDENTIFIED SPEAKER VIA TELEPHONE:

9 Well we will still need to reconvene to have the
10 discussion of the Advisory Committee, is that
11 right?

12 PRESIDING MEMBER BOYD: Yes, and we
13 haven't decided yet what to do. I have one voice
14 for press on and a lot of startled looks.

15 MR. CARMICHAEL: Two votes for press on.

16 PRESIDING MEMBER BOYD: Two votes to
17 press on.

18 MS. HOLMES-GEN: Press on with the
19 caveat of taking a break before the advisory panel
20 discussion.

21 PRESIDING MEMBER BOYD: Hear the rest of
22 the folks and take a short break.

23 MS. HOLMES-GEN: Take a short break like
24 half an hour.

25 PRESIDING MEMBER BOYD: And get a cup of

1 coffee or something. All right, fine by me.

2 Todd Campbell. You are here.

3 MR. CAMPBELL: Good afternoon. Todd
4 Campbell, director of public policy for Clean
5 Energy. I just wanted to first express our strong
6 support for what the Energy Commission has pulled
7 together today. I think the Draft Investment Plan
8 was a good start and clearly there might be some
9 modifications as we would expect but I think it's
10 definitely a significant challenge, given the time
11 and the challenges that we face. So this is a
12 very big step forward.

13 And I also would like to say while we
14 support the staff's focus on 2020 and 2050 goals,
15 we also understand the arguments that are being
16 made by the advisory board members who have
17 commented that AB 118 funds should provide for
18 super-ultra-low-carbon fuels if the aim is to
19 achieve the ultimate goal. That's certainly
20 something understandable.

21 What I would argue, and I think what the
22 staff's actual intent and some of those board
23 members, the advisory board members' comments
24 intertwine is there are industries like the
25 natural gas vehicle industry that may in the

1 initial steps be ultra-low or low-carbon
2 technologies. But we think that these types of
3 technologies actually can achieve super-ultra-low-
4 carbon outcomes.

5 So with that let me -- I wanted to first
6 express some concerns and observations.

7 Personally, the natural gas vehicles, the natural
8 gas vehicles can operate on a whole host of fuels
9 that can be considered low-carbon fuel, ultra-low-
10 carbon and even super-ultra-low-carbon. Low-
11 carbon, for example, is natural gas, obviously.
12 Ultra-low-carbon fuel could be blends of
13 biomethane and fossil-based natural gas as well as
14 blends of natural gas and hydrogen.

15 Certainly for super-ultra-low-carbon
16 fuels, biomethane clearly is identified with the
17 California Air Resources Board. And we hope that
18 we see additional funding and advancements so some
19 of those advancements can go even further. That
20 certainly presents an opportunity.

21 We also think a combination of
22 technology and fuels can put a lot of our vehicles
23 or vehicle applications into the super-ultra-low-
24 carbon category. And some of that would be
25 actually applying hybrid electric, natural gas

1 vehicles, plug-in hybrid electric natural gas
2 vehicles, or those combinations with biomethane,
3 biomethane blends, hydrogen blends or renewable
4 hydrogen.

5 In conclusion, natural gas is not a
6 straightforward but more of a complex application
7 that can become progressive as time moves forward.
8 We believe that we are well set or positioned to
9 support the ultimate goals that the state wants to
10 achieve in 2050.

11 The second point is biomethane is
12 currently listed I think as a ultra-low-carbon
13 fuel. And certainly with regards to the analysis
14 that the Air Resources Board has done with the 80
15 percent reduction of greenhouse gases, we believe
16 that clearly demonstrates a super-ultra-low-carbon
17 standard. So we would like to see, obviously,
18 biomethane in those types of applications move
19 into that category of funding.

20 Further, we hope that the Investment
21 Plan will reward super-ultra-low-carbon strategies
22 like natural gas HEVs, plug-in hybrid electrics.
23 Even HCNG blends, which is I think another
24 important step. And also biomethane blends, et
25 cetera.

1 And then finally, for heavy-duty and
2 medium-duty applications we are very pleased to
3 see that the Energy Commission recognized the
4 importance of natural gas in heavy- and medium-
5 duty applications. Ultimately we may get there
6 one day where bioelectric technology can push 18-
7 wheelers. But I think that right now it is
8 extremely important for us to attack the sector.

9 And I think the reason why there is
10 heavier weight in the heavy-duty and medium-
11 sector are in terms of reducing carbon benefits.
12 It is because these are very high-volume fleets.
13 Some of these fleets travel significant miles per
14 year and therefore using more low-carbon fuel they
15 can achieve more low-carbon fuel benefits.

16 We also think though that there is an
17 opportunity for biomethane to be considered in
18 heavy-duty and medium-duty applications and that
19 is currently absent from the Plan. We hope that
20 that would actually be a consideration as well in
21 terms of benefits for the document.

22 In terms of recommendations, we support
23 purchase incentives for OEM and small volume
24 manufacturer product for not just conventional
25 natural gas vehicles but also hydroelectric

1 natural gas vehicles, plug-in hydroelectric and
2 natural gas vehicles. Not just in the light duty
3 but also in the heavy- and medium-duty sector.

4 And we think that is going to be a very
5 strategic investment because we believe that our
6 fuel can commingle blend with some super-ultra-
7 low-carbon fuels in the future. We think that's
8 very important for us to be able to look at the
9 transition.

10 I usually look at or view natural gas as
11 a bridge fuel. And natural gas is a bridge fuel
12 in my view to two renewable outcomes. One is
13 renewable hydrogen and one is renewable
14 biomethane.

15 Second, I believe that it is important
16 for this program to support medium- and heavy-duty
17 fueling stations for goods movement, for the goods
18 movement sector to give us more alternatives and
19 options for high-volume fleets to actually produce
20 the results that the Energy Commission and the Air
21 Resources Board hope to achieve in those sectors.
22 And we are not talking about extensive
23 infrastructure but we are talking about minimal
24 infrastructure to at least get the industry going
25 and give consumers and fleets the opportunity to

1 invest in these strategies.

2 Third, we hope that there is monies for
3 biomethane production advancement. And
4 specifically cost-effective, small volume units
5 that can harness small facilities. And I can't
6 tell you how many times we had to look at a
7 project where we really wanted to harness
8 biomethane on a small volume, you know, a small
9 volume basis. But there really isn't a cost-
10 effective, production application that we can
11 harness, for example, sanitation plants. Or I
12 think in some cases ag based plants.

13 And I think it is going to be a really
14 important step, especially for municipalities who
15 already have natural gas vehicles, to harness
16 those facilities because naturally that is a very
17 strong bond in terms of if you are a city and you
18 can power your vehicles with a super-ultra-low-
19 carbon fuel that's readily available. But
20 currently technology prohibits you from doing
21 that. Being able to do so would be extremely
22 encouraging and certainly help with the budget and
23 the bottom line for cities and municipalities.

24 I would also say that biomethane quality
25 from landfills, certainly research in this area

1 would be very appreciated. We would like to
2 convince our utilities in California that we can
3 produce landfill, pipeline-quality gas so that we
4 could actually have more liberty in getting this
5 product to market for vehicles.

6 One of our strong visions for biomethane
7 as an industry would be to be able to do a green
8 ticket program much like green power where we plug
9 the actual renewable into the grid and the
10 consumer with a premium can benefit from that
11 infusion into their vehicle.

12 And then finally, of course, hydrogen
13 CNG advancement would also be beneficial. We do
14 this with TransLink up in Vancouver. We actually
15 fuel several buses with hydrogen and a natural gas
16 blend. But there's a lot still to be left -- to
17 be learned. We certainly think it's a strategy
18 that some transit agencies in the future may want
19 to take advantage of, particularly those transit
20 agencies that run on natural gas.

21 And this may also provide us with co-
22 location opportunities for hydrogen as well.
23 Which we actually are going to be very proud to
24 actually open I think later this year, actually
25 very much in the early part of this year, a

1 hydrogen 10,000 PSI public access station at LAX
2 with General Motors.

3 So in conclusion, we see the natural gas
4 industry as one that can evolve and create a
5 bridge to the state's 2050 goals. Investments of
6 course in natural gas vehicles, the advanced
7 fuels, whether it's biomethane or hythane or
8 hydrogen, and vehicle platforms like hybrid
9 electric vehicles and plug-in hybrid electric
10 vehicles in my view is critical.

11 And we believe by doing so AB 118 funds
12 will be sowing the very seeds that Tim and Bonnie
13 and Roland referred to in terms of investments.
14 And I would say that our investments at Clean
15 Energy where we do 20,000 gallons per day,
16 gasoline gallon equivalents per day in biomethane,
17 a hydrogen co-location station or efforts with
18 hydrogen and CNG blends demonstrates our
19 commitment, not only to the stakeholders at this
20 board but also the commitments to the goals, the
21 very goals of AB 32 and the state of California.

22 Some but not all -- As you know there
23 was a reference to some advancements in engine
24 technology that may have been in a box. And I
25 think we all understand many technologies, not

1 just natural gas vehicle engines but unfortunately
2 very promising technologies like EV-1 and other
3 vehicles that we would have loved to see still be
4 on the streets, have also been put in boxes.

5 And what I would say is what is really
6 going to be critical for us to get to 2050 goals
7 is to be able to get the bridge. To be able to
8 get from today to 2050 with investments with
9 industries that are willing to be progressive and
10 not stand still. And improve their platforms,
11 their fuels and everything else that can possibly
12 support your goals. I think that's where you want
13 to place your investment.

14 And with that, thank you very much.

15 PRESIDING MEMBER BOYD: Thank you.

16 Questions?

17 Bonnie Scott, Global Cooling Solutions.

18 MS. SCOTT: Hello. I would like to
19 commend everyone on putting together a wonderful
20 Investment Plan. It is very comprehensive and
21 very detailed. I have been participating in these
22 workshops since the AB 118 process started and I
23 am a little disappointed that the hydrogen
24 component of the plan focuses solely on
25 infrastructure.

1 As I had stated before there is a brand
2 new technology out right now by way of a hydrogen
3 generator that produces hydrogen on demand in the
4 vehicle. It eliminates the need for production
5 facilities, delivery systems and fuel stations.
6 There is no infrastructure required.

7 I feel like the way the language is
8 worded it is very specific to infrastructure. I
9 would like to see the Plan updated a little bit to
10 at least allow for newer technologies that don't
11 solely rely on infrastructure by way of hydrogen.

12 We did come out and give a presentation
13 to the CEC, to Aleecia Macias, a couple of months
14 ago on the hydrogen generator that we have
15 currently in production. We are working with ARB
16 right now on the verification process and we have
17 all our patents. We have proof of concept.

18 And again I will state that we do not
19 need infrastructure to run a hydrogen fuel program
20 for the state and this country and the world. The
21 technology is here. We have gone past the need
22 for infrastructure. So I wanted to make sure that
23 we would be able to include language in the
24 Investment Plan that will address hydrogen-related
25 technologies that don't specifically deal with the

1 infrastructure portion.

2 The hydrogen generator that we have in
3 production right now also complements any other
4 type of fuel, from biomass to electric vehicles to
5 natural gas. And as I have stated previously our
6 unit is currently producing the 85 percent
7 reduction in greenhouse gases today.

8 It is a significant product, it's new
9 technology. While it hasn't hit the mainstream
10 yet I don't want it to be left behind because
11 there is fear of the infrastructure problems
12 associated with the old technology of hydrogen.

13 Hydrogen vehicles being made right now
14 are pretty costly, as are natural gas vehicles.
15 They are not really readily available to the
16 public. And with the complications of the lack of
17 infrastructure required for those technologies I
18 would hope that the state of California can look
19 towards new technologies that are coming on to the
20 market and not pigeonhole the hydrogen technology
21 in general with the ability that you have to have
22 an infrastructure to support it.

23 So that is pretty much what I wanted to
24 say. Let's hope that we can get some language
25 added to the plan that would include other

1 technologies, hydrogen-related.

2 Right now for the past 30 days, we have
3 run an engine in our lab for 30 days on water.
4 And the unit as currently designed complements
5 other fuel sources such as gasoline, diesel,
6 natural gas and electric vehicles. So it is
7 already complementary, it is very cost-effective,
8 and I would like to see the technology have the
9 ability to compete in the market and show what we
10 can bring the state of California the needed
11 greenhouse gas reductions today and not by waiting
12 until 2050.

13 I would like to invite Commissioners
14 Douglas and Boyd, Peter and Tim and any members of
15 the board who are interested in seeing a little
16 bit more about this technology. We would be happy
17 to come up here, bring a unit, give you a
18 demonstration and just show you how the concept
19 works. So you have an idea that at present how we
20 have been looking at the Hydrogen Highway for the
21 last ten years, that technology is now gone. We
22 have far surpassed that and we would like the
23 opportunity to present to you, if you are
24 interested in learning more about that technology.
25 Thank you.

1 PRESIDING MEMBER BOYD: Thank you. I
2 might accept your offer.

3 Chuck White, Waste Management.

4 MR. WHITE: Thank you Commissioner Boyd
5 and Douglas and members of the Advisory Committee.
6 Chuck White with Waste Management.

7 Waste Management currently operates
8 about 3,000 heavy-duty diesel trucks in California
9 and we have converted about 500 of those to
10 natural gas. It's greater than 15 percent of our
11 fleet, it's growing, but we recognize that there's
12 a lot more we have to do to reduce our criteria
13 pollutant and greenhouse gas emissions.

14 Waste Management is also a member of the
15 California Natural Gas Vehicle Coalition and we
16 strongly the comments made by Mr. Price.

17 Likewise, Waste Management is very
18 supportive of the direction that the ARB 118
19 Investment Plan seems to be taking, particularly
20 focusing on natural gas potentially as a
21 transition to other types of lower carbon fuels
22 and also the hybrid heavy-duty technology.

23 To speak a word about hybrids. Waste
24 Management is looking very seriously at applying
25 hybrid technology, both hydraulic and electric to

1 our vehicles. We have got five or six of them up
2 and running around the country. We are looking at
3 how we can bring these on-line quicker. They are
4 expensive. And we think we can achieve about a 30
5 percent reduction in fuel use, increasing
6 efficiency.

7 If you just tack on hybrid technology
8 onto an existing refuse truck it's about a \$50,000
9 increase in price minimum to a \$250,000 truck but
10 you loose a lot of payload capacity. So there's
11 also the issue of, do we need to reconfigure the
12 entire design of a refuse truck in order to make
13 maximum, beneficial use of the hybrid technology.

14 So we are hoping that the program
15 through 118 will focus on hybrid technologies but
16 also helping us change the configuration of these
17 vehicles and support that kind of effort as well
18 to make maximum, beneficial use of the hybrid
19 technology.

20 With respect to natural gas. We are, we
21 do believe that transitioning much of our fleet,
22 continued transition of natural gas is an
23 extremely important step in reducing criteria
24 pollutants and greenhouse gas emissions.

25 But more importantly we think that

1 natural gas is a first step in transitioning to
2 biogas, much of which can be produced from
3 landfill gas. We actually hope to have our first
4 landfill gas to LNG plant up and running by the
5 end of this year. I am going to pass some fact
6 sheets around. Bonnie, do you mind? And pass
7 them over here.

8 This gives you a brief update on the
9 status of our project, which we hope to be
10 producing about 13,000 gallons of liquified
11 natural gas by the end of the year.

12 Unlike other types of alternative fuels
13 there's a lot of natural gas currently available.
14 An estimated 50 percent to two-thirds of the
15 landfill gas that is produced in California is
16 simply being flared without beneficial use. Some,
17 of course, is being used to generate electricity.
18 But there is a huge opportunity to take advantage
19 of putting these kinds of refinery plants to
20 capture this methane and produce liquified natural
21 gas or CNG.

22 But these plants are expensive. The
23 plant we are putting in at Altamont couldn't have
24 been done within the time frame we are doing it in
25 without financial assistance from the California

1 Air Resources Board, the South Coast Air Quality
2 Management District and the California Integrated
3 Waste Management Board to help bring this project
4 on-line. These kind of plants are expensive and I
5 really hope that the AB 118 funding program will
6 provide a way of supplementing private capital in
7 order to bring these expensive plants on-line.

8 The Air Resources Board recently
9 published a GREET model done by their TIAX
10 consultants, I think the Energy Commission was
11 involved in that, related to landfill gas, to CNG.
12 And I think as Mr. Price mentioned, that was an
13 88.5 percent reduction in greenhouse gas emissions
14 by producing either CNG or LNG from a landfill
15 gas. That makes it a super-ultra-low-carbon fuel.

16 And the report you have in front of you
17 seems to slot biofuels as only an ultra-low carbon
18 fuel. That may be because of the emphasis of
19 looking at perhaps crop-based biofuels. But if
20 you look at waste-based biofuels such as landfill
21 gas, or the direct conversion of biological wastes
22 to fuels, you can really, really easily meet a
23 super-ultra-low-carbon fuel. And we certainly
24 encourage the Energy Commission to recognize that
25 you can produce waste-based biofuels, biomethane,

1 and be in your super-ultra-low-carbon fuel
2 category.

3 We do hope the AB 118 program will go
4 beyond even looking at helping us convert landfill
5 gas to LNG or CNG but looking at direct conversion
6 of biological solid wastes to biofuels through
7 anaerobic digestion, cellulosic ethanol processes.
8 We think these things, particularly in the case of
9 anaerobic digestion it's probably ready to go. To
10 actually intercept waste before it gets to the
11 landfill and maximize the production of biogas in
12 that fashion.

13 We think there's actually sufficient
14 biofuels available from waste today, plus hybrid
15 technology, that could actually completely replace
16 diesel fuel in California at the 30 billion
17 gallons that's used per year. That could be
18 completely supplanted by biofuels today. Not to
19 say that it would, there may be other demanding
20 uses for it, but it gives you a sense of the
21 potential that biofuels has.

22 So in summary we would certainly hope
23 the AB 118 funding continues to support hybrid
24 technology and bring on greater fuel efficiency,
25 particularly in heavy-duty trucks, which we think

1 is extremely important. Continue to be able to
2 expand the use of natural gas as a transition fuel
3 to biogas such as currently available landfill
4 gas. But beyond that, producing other forms of
5 biogas directly from both urban waste and
6 agricultural wastes.

7 So I appreciate your time and we look
8 forward to working for you as we move down this
9 path together. Thank you.

10 PRESIDING MEMBER BOYD: Thank you,
11 Chuck. In my case you're preaching to the choir,
12 as Chairman of the Governor's bioenergy working
13 group. Any questions?

14 MR. WHITE: I have one minor point I
15 wanted to bring up, I forgot to mention.

16 PRESIDING MEMBER BOYD: Ask yourself a
17 question.

18 MR. WHITE: Your sister agency, the
19 California Air Resources Board, is struggling with
20 the biogenic greenhouse gas emissions versus
21 anthropogenic greenhouse gas emissions. They had
22 an errata sheet on their scoping plan but that was
23 withdrawn. And I know the Governor's Bioenergy
24 Action Plan and your Bioenergy Action Plan call
25 for biogenic sources of fuels and that needs to be

1 distinguished from fossil fuels.

2 In the case of biomethane it still
3 produces CO2 but we think it's carbon negative or
4 carbon neutral CO2 as opposed to fossil fuel
5 derived CO2. I think you folks are there already
6 in understanding this but I think the California
7 Air Resources Board needs a little bit of hand
8 holding as they develop the scoping plan and
9 continues to recognize the difference between --
10 will recognize the difference between biofuels and
11 fossil fuels with respect to the greenhouse gas
12 impacts. Thank you very much.

13 PRESIDING MEMBER BOYD: Susan, will you
14 hold Tom's hand.

15 (Laughter)

16 ADVISOR BROWN: I'm trying to get his
17 attention.

18 PRESIDING MEMBER BOYD: Daniel Davids,
19 Plug-In America.

20 MR. DAVIDS: Hi, my name is Dan Davids.
21 I'm a director of Plug In America based in
22 Seattle, Washington, where I have responsibility
23 for the Northwest states and Hawaii.

24 PRESIDING MEMBER BOYD: You must have
25 just come from Hawaii because you certainly didn't

1 come from Seattle.

2 MR. DAVIDS: I got this at Costco in
3 Honolulu.

4 (Laughter)

5 MR. DAVIDS: Which is the largest Costco
6 store in the world, by the way.

7 I also have two plug-ins in my family.
8 I have a 2002 Toyota RAV4 EV, which is one of the
9 survivors from the California zero emissions
10 mandate program down here. Up in Washington we
11 have probably two dozen survivors from that
12 program, Toyota RAV4 EVs, Chevy S-10s, Ranger
13 pickups, all working quite well.

14 Our other vehicle in my family is an
15 A-123 high motion converted Prius, so it has an
16 extra five kilowatt hours on board. I was the
17 first private citizen in Washington to have that
18 put into, into my car. And it is averaging
19 between 75 and 80 miles per gallon.

20 Washington, just to point out. There
21 was an earlier discussion about the advantage of
22 perhaps electrifying some of these fleet trucks
23 like snorkel lift trucks. The City of Seattle is
24 already operating a plug-in hybrid snorkel lift
25 vehicle because they realized they could realize

1 tremendous savings when the vehicle is parked and
2 not having the diesel engine idling all the time
3 just to produce hydraulics. So anyway.

4 And we also have a plug-in hybrid school
5 bus in Wenatchee.

6 A couple of comments on the draft staff
7 paper, and I'll go as fast as I can here. On page
8 17 in the electric vehicle section there's a
9 reference to substantial work is necessary to
10 prove these vehicles to consumers.

11 Well at Plug In America we view
12 ourselves as primarily representing the interests
13 of consumers. And we have a legislative action
14 committee, we work a lot with CARB, we work with
15 legislatures across the whole country at this
16 point now. We talk to the car manufacturers, the
17 battery manufacturers on a regular basis. But
18 primarily we represent consumers. And obviously I
19 am one of those consumers who is enjoying the
20 benefits of driving plug-in vehicles.

21 When you say someone is wondering
22 whether substantial work is necessary to prove
23 these vehicles to consumers. I can tell you,
24 driving electric vehicles in Puget Sound where I
25 have absolutely no public charging infrastructure

1 whatsoever, I don't need public charging
2 infrastructure. The vehicle has a 100-plus mile
3 range and I get along just fine.

4 Because I am in that category of people,
5 that sweet spot that General Motors is designing
6 for the Volt where depending on the studies you
7 look at, roughly 80 to 90 percent of the people
8 drive 40 miles or less during the day. My daily
9 commute is 43 miles so I don't need charging
10 infrastructure.

11 Charging infrastructure is really, as
12 Rich Lowenthal of Coulomb points out, really at
13 this point primarily needed for the other 50
14 percent of the population that in multifamily
15 dwelling situations or work situations don't have
16 access to charging plugs. The other 50 percent
17 like me, we charge with the power that's available
18 in our garage.

19 The interesting thing is that we had
20 over 30 inches of snow at my house in Seattle over
21 the last two weeks. And we didn't imagine it was
22 going to be this way. But the RAV4 EV, the
23 electric vehicle, wound up being the savior of the
24 day. We didn't have to worry about trying to get
25 to a gas station, we could charge always at home.

1 All the other cars were stuck in the snow because
2 of low ground clearance and I'm driving around in
3 an electric vehicle with impunity for, you know,
4 weeks on end in the snow. So that was quite a
5 pleasant surprise.

6 Another question I saw in the report was
7 will smart meters be required to encourage night
8 time charging? I would say yes, smart metering is
9 great. We even have a start-up in Seattle called
10 V2Green, which was recently acquired by GridPoint,
11 that speaks to a lot of that technology to control
12 the charging. And eventually go bi-directionally,
13 perhaps with the vehicles putting electricity back
14 onto the grid someday. But at this point really
15 all that is needed is time of use metering.

16 And this is what most everyone, my
17 colleagues on the board of Plug In America, almost
18 all of whom drive RAV4 EVs, there's a timer that
19 was provided by Toyota in the car. And you just,
20 if you are fortunate enough to be in a utility
21 area that has time of use metering you simply
22 program that timer to start charging at whatever
23 hour you want, two a.m. or three a.m. or
24 something. So no, we don't have to wait for the
25 meters. That's the big message with electric cars

1 really. There isn't -- We just need the cars on
2 the road. There aren't any real barriers to
3 getting the cars on the road.

4 There was a reference to needing to
5 prepare the market. And yet later in the report
6 there is also reference to previous plug-in hybrid
7 and battery electric vehicle incentives being
8 over-subscribed. Well how can you have both? I
9 mean, clearly there's enough interest in these
10 vehicles. All of the vehicles from the ZEV
11 mandate there were waiting lists.

12 I tried to get an EV-1. Of course they
13 wouldn't give one to me because I'm in Washington.
14 But there was a huge response to BMW's Mini EVs.
15 The Teslas are delivering in large numbers now.
16 Seattle by the way has the largest base of people
17 who have ordered Teslas outside of the state of
18 California. There's a waiting list of, I think
19 the last time I looked at it it was over 10,000
20 people on the web who say they will buy Chevy
21 Volts.

22 Let's see. The last comment would be,
23 just a comment on the prior discussion this
24 morning about the price differential for plug-in
25 hybrids and battery electrics. CARB has looked at

1 this in some of their studies and I know this from
2 driving electric vehicles. You need to consider,
3 it's kind of like buying a solar system. Yes, you
4 know you are going to put some extra money on your
5 roof putting photovoltaics up there but you are
6 saving over the long run.

7 So the present value -- There's a
8 present value to the fuel savings and that's
9 pretty substantial. Some people who have owned
10 RAV4 EVs and communicate over the Internet in a
11 group have done some calculations because many of
12 them are reaching about 100,000 miles now on their
13 car. Which are behaving just fine, by the way, at
14 100,000 miles. So the batteries -- And that's ten
15 year old technology. So the batteries are ready.

16 They are estimating that they saved five
17 to six thousand dollars in fuel over the last five
18 to six years. There's also the maintenance
19 expense that simply goes away with an electric
20 vehicle. There are no oil changes, fluids,
21 filters, tune-ups, spark plugs, belts, hoses. All
22 of this just goes away. And that has some pretty
23 significant value as well.

24 So when we demonstrate these vehicles
25 and have them at conferences and public showings

1 and things people get it pretty quickly and seem
2 to be rather willing to pay more for a vehicle.
3 Like in the early Prius days. Paying more for a
4 vehicle knowing that over time you are going to be
5 reaping the benefits of these savings.

6 So that's all I have.

7 MR. CARMICHAEL: Can I ask you a quick
8 question?

9 MR. DAVIDS: Sure.

10 MR. CARMICHAEL: I'm curious if Plug In
11 America has an opinion on whether or not funding
12 from this pot should be dedicated to conversions
13 as opposed to dedicated to other, you know,
14 support avenues for plug-in production, if you
15 will. Plug-in hybrid, you know, new vehicles as
16 opposed to conversions.

17 MR. DAVIDS: Yeah, I think our view on
18 the conversions, and owning one. I mean, it
19 essentially cost me \$11,000 when it was all done.
20 It doesn't make economic sense. But, you know, I
21 am making a statement and being an early adopter
22 and helping gather data and that sort of thing.

23 And even Felix Kramer of CalCars has
24 said from the beginning that, you know, his view
25 isn't really to create an aftermarket business out

1 there but really rather just cajole and convince
2 by demonstration the major manufacturers that this
3 is doable.

4 It essentially was people from the
5 Electric Auto Association, of which Felix was a
6 member. And they happened to figure out that a
7 Prius could be hacked, so to speak. And it had a
8 substantial electric drive-train in it, unlike the
9 Honda Civic, which is a mild hybrid. And the
10 stars came into alignment and they figured out
11 that they could do this plug-in hybrid thing.

12 If we are going to get vehicles on the
13 road in substantial numbers that needs to be done
14 by the major manufacturers. So as much as Plug In
15 America really hates the CARB vote of 2003 and
16 that 4,000 perfectly good electric vehicles were
17 taken off the road and there's only 1,000 of them
18 left. If you have seen the movie Who Killed the
19 Electric Car? that's the whole story about that.

20 We also at this point are very
21 supportive of what GM is doing and basically all
22 the major manufacturers who have just been falling
23 all over themselves the last six months announcing
24 either plug-in or pure electric vehicles.

25 PRESIDING MEMBER BOYD: Thank you.

1 Danielle Fugere, Friends of the Earth.

2 MS. FUGERE: Thank you. I am mostly
3 going to talk about sustainability today. I think
4 many of the advisory members will raise other
5 points.

6 I first wanted to say I appreciate the
7 enormous challenge that CEC staff undertook and
8 the effort that was put into it and I think what
9 has come out has been a much more detailed and
10 useful document so we really appreciate that. And
11 the presentations today even added more
12 information so that was very helpful.

13 Peter spoke eloquently today about the
14 importance of the AB 118 funding process and how
15 it could be one of the most important programs.
16 And I think that theme should be made much more
17 clear in the Investment Plan itself because even
18 starting with the abstract, making this clear to
19 the -- there's a lot of competition for funding
20 right now in California. And making the
21 importance of this show dramatically in the
22 document in the introduction I think would be
23 helpful.

24 We appreciate the funding for additional
25 work. I guess I'm moving on now to

1 sustainability. We appreciate the funding for the
2 additional work to define quantifiable,
3 sustainability methods. There is still a
4 significant amount of study and work that remains
5 to be done. And CEC is really pioneering this
6 effort in many ways and so we appreciate that.

7 We also appreciate the statement that
8 the sustainability working group will continue in
9 place and remain intact and continue working on
10 this important issue. So again, appreciate that
11 and hope to be a part of that process.

12 It is just becoming more and more clear
13 that clean and sustainable fuels and vehicles are
14 not only necessary to reduce greenhouse gas
15 emissions but can help grow our economy and
16 stimulate technology development in California and
17 green jobs as well. so sustainability is
18 important to driving this technology and making
19 sure it is the cleanest and the best that we can
20 achieve.

21 Now I had hoped to see more guidance in
22 the Investment Plan about sustainability. I
23 appreciate that it is addressed right up front but
24 what it doesn't do is say what happens to
25 sustainability. How is it implemented? We have

1 done a lot of substantive work which just doesn't
2 seem to me to be reflected in the document very
3 well. As an example, the Plan doesn't state, it
4 doesn't actually state that sustainability
5 standards will be applied.

6 I think the regulations make clear that
7 there are goals but how is it going to be applied?
8 Will there be minimum sustainability standards,
9 i.e. thresholds, or is sustainability going to be
10 applied as an incentive or extra points. That
11 still remains unclear to me and I was hoping that
12 the Investment Plan would lay that out much more
13 clearly.

14 In the absence of minimum, environmental
15 sustainability standards in the regulations we
16 would advocate for specific language in the
17 Investment Plan regarding threshold standards. So
18 putting those in the Investment Plan, or at least
19 putting them in an attachment, for instance an
20 Attachment A, that can guide project proponents
21 and investors so that they know what are the
22 minimum thresholds. How will sustainability be
23 applied. So that there's some guidance as they
24 think about framing their projects and what
25 projects will be eligible for funding.

1 And I think, I'm glad you mentioned
2 measuring and monitoring because that also is a
3 very important component of sustainability. What
4 is the effect of the projects that have been
5 funded. And so again that is going to need
6 additional funding and tracking mechanisms because
7 that is difficult for project proponents. And so
8 to the extent that we can, the CEC can invest in
9 and work some of those processes out I think that
10 would be beneficial to project proponents.

11 One thing I wanted to just add something
12 that is off-topic but this issue of conversions.
13 The one benefit of conversions or one of the most
14 substantial benefit of conversions in plug-ins is
15 that there's millions and millions of cars on the
16 road today that are not going to turn over very
17 quickly. And so conversions are a way to address
18 the stock that is currently on the road. And so
19 for an investment of, you know, \$10,000 or
20 \$15,000, you are dealing with a problem that will
21 exist, you know, for as long as those cars are on
22 the road.

23 MR. CARMICHAEL: And one of the
24 questions I have in my mind is conversions done
25 this year or next year, are those cars likely to

1 be on the road in 2020 or later? And that's part
2 of what I am wrestling with on that front.

3 MS. FUGERE: And I think that's part of
4 what are the conversions, what standards have to
5 apply to those conversions. I definitely think
6 they should meet air quality standards, et cetera
7 and have longevity. I guess that would be the
8 key. So thank you very much.

9 PRESIDING MEMBER BOYD: Thank you,
10 Danielle. I have two cards here from gentlemen
11 from, I believe gentlemen from the same company,
12 Proterra. Josh Goldman and Dale Hill.

13 MR. GOLDMAN: Just one.

14 PRESIDING MEMBER BOYD: Just one of you
15 is going to testify?

16 MR. GOLDMAN: Yes.

17 PRESIDING MEMBER BOYD: All right, very
18 good. Whichever one of you.

19 MR. HILL: I appreciate you referring to
20 me as a gentleman. I actually, with a name like
21 Dale, ended up assigned to the girls dorm when I
22 got to college.

23 (Laughter)

24 MR. HILL: I too would like to thank
25 Peter and Tim and their staff for all the hard

1 work they have done on the Investment Plan.

2 Proterra designs and manufactures plug-
3 in, battery dominant, hybrid electric buses and
4 battery electric buses. And what we will be
5 proposing in a response to this program is a
6 vehicle that we have been working on that is a
7 fast charge battery electric bus.

8 By way of invitation we will have a bus
9 here in Sacramento on February the 9th that will
10 be open for viewing for both the Energy Commission
11 and CARB that is a composite body, battery
12 dominant, plug-in hybrid electric fuel cell bus.

13 And the bus that we will have here is
14 one that was developed under an FTA program but it
15 will be identical to the bus that we are currently
16 building under a CARB program that will be
17 delivered in a few months to Burbank, California.
18 But that bus serves as a platform for a fast
19 charge battery electric bus.

20 Transit agencies ten years ago weren't
21 interested in too much development of advanced
22 technologies but today they are. And we have put
23 together a consortium of between eight and ten of
24 the major transit agencies in California that want
25 to experiment with the fast charge battery

1 electric. We use a lithium technology and we can
2 completely recharge a bus in ten minutes or less
3 with an adequate charging system which we have
4 designed.

5 And the thing we need to realize, that
6 transit agencies are well-suited for public
7 demonstration of new technology because you have a
8 fixed base operating structure where the buses
9 come back to a common place. Plus you have a
10 platform where the vehicles are in front of the
11 public on a continuing basis and you have a big
12 billboard that's driving down the road that can
13 advertise the technology that you are
14 demonstrating.

15 The other thing is that the funding is
16 very restricted with transit agencies now, just as
17 it is in all businesses. And yet this program
18 provides an opportunity for transit agencies to
19 demonstrate new technology.

20 The Federal Transit Administration is
21 also interested in pursuing this very same
22 vehicle. We have had meetings with them just
23 recently. And so it might merit a contact with
24 the R&D people at the FTA to see if there's any
25 synergy between what's being done under this

1 program and what's being -- the FTA wants to do.

2 And so I just as a result of reviewing
3 the proposal a couple of questions or a couple of
4 comments. In the emissions, the greenhouse
5 emission chart on I think it was B-2. It shows
6 emissions for battery electric vehicles being
7 similar to gasoline vehicles.

8 However, in a number of areas in the
9 state, the Bay Area and this area here, PG&E tells
10 me that their emissions are 60 to 70 percent
11 sustainable. So I would just suggest to take into
12 consideration if battery, if you are looking at
13 battery electric programs, take into consideration
14 where those vehicles are operating, particularly
15 if they are in an area that has a lot of
16 sustainable energy.

17 The other thing as you put that
18 together, I would recommend that we define what
19 matching funds are in that proposal. Are those
20 matching funds that come into play going forward
21 when the program is put together or does all the
22 research that we have done to date on such
23 vehicles go into the matching fund category?

24 And then it would be helpful as we put
25 responses together to know how that will be

1 evaluated so we can better respond to that.

2 One thing I forgot. And that is, this
3 project will be the first project that I am aware
4 of that will be a fast-charge battery electric
5 project and that brings a whole new era into
6 transportation. If we need range extension we
7 have the ability to put a small generator on board
8 the bus in case you got in a detour or the
9 electric went out or something like that where we
10 can recharge the bus. Thank you.

11 PRESIDING MEMBER BOYD: Thank you,
12 Mr. Hill. Both you and Mr. Goldman put several
13 questions on your cards and you just asked the
14 question so I am going to ask the staff to respond
15 to you.

16 MR. HILL: Yes.

17 PRESIDING MEMBER BOYD: Not right now
18 but to get back to you and respond to these
19 questions. Okay, I am going to read the card,
20 what it says: Rain.

21 RAIN: All right, guys, I don't belong
22 here.

23 PRESIDING MEMBER BOYD: Vice president
24 of Source One Records.

25 RAIN: Yeah, I'm just a musician. I

1 live in LA. I drove here at two in the morning
2 after I got off my shift at work. I haven't slept
3 in two days. So I can't really promise anything
4 about this. Thank you so much for doing this.
5 Albeit, honestly, 20 years too late.

6 PRESIDING MEMBER BOYD: Some of us have
7 been trying for 20 years.

8 RAIN: I know, I know. It's hard to
9 move things and I totally agree with that. And
10 thank you for putting this effort and being part
11 of California where we are trying to move this
12 forward.

13 I'm sad that nothing has been said about
14 algae-based biodiesel. I was hoping that I'd hear
15 something about it. I came here specifically to
16 make sure something was said. You know, I am not
17 being paid by any company to come up here.

18 PRESIDING MEMBER BOYD: You want to
19 drive back here Tuesday? We're having a biofuels
20 workshop and algae is prominently featured.

21 RAIN: Really?

22 PRESIDING MEMBER BOYD: Really.

23 (Laughter)

24 RAIN: Can I stay on anybody's couch?

25 (Laughter)

1 PRESIDING MEMBER BOYD: Is that webcast?

2 ADVISOR BROWN: Yes.

3 PRESIDING MEMBER BOYD: Okay. Before
4 you leave get a copy of the notice from somebody
5 on staff.

6 RAIN: That would be awesome.

7 PRESIDING MEMBER BOYD: You don't have
8 to drive back. You can watch the webcast.

9 RAIN: The other thing I want to urge
10 you to do is to consider how the state can make
11 money off of this. I mean, this is energy.
12 California is entering a crisis. The whole nation
13 is entering a crisis. And we make good diesel
14 engines in America, we always have. Why don't we
15 just streamline. It wouldn't take a lot of money.
16 It wouldn't take a lot of real effort. The
17 infrastructure is already there. If we just --

18 I mean, one of the things that I have a
19 problem with some of these other technologies is
20 that you can't cross state lines. How far can you
21 go and how much torque do you actually have? With
22 biodiesel, especially with the algae, it's quick
23 to produce, cheap. We could probably do it for
24 under market prices.

25 And I am offering to do a temporary

1 socialization of it. Do it yourself. Hire these
2 companies to do it and make a little money off of
3 it for like seven years then sell it off to the
4 private sector. Work with the companies.

5 Because honestly, and no offense to the
6 companies, but they haven't been doing it. They
7 have had all the opportunities in the world.
8 There are people out there with the money to do it
9 but they seem reluctant to do so. Whereas you
10 seem to be interested in doing so.

11 So I beg you, push this forward. Make
12 money for California. Invest in definitely the
13 hydrogen and the fuel cells and mass transit. I
14 mean, and you could use the money generated from
15 this to promote it. I guess that's really all I
16 have to say.

17 PRESIDING MEMBER BOYD: Well thank you
18 and I really appreciate your enthusiasm and your
19 willingness to travel long distances. Maybe
20 you're a set-up for the next gentleman here, I
21 don't know.

22 (Laughter)

23 PRESIDING MEMBER BOYD: Tom Fulks. But
24 it doesn't say Diesel Technology Forum here it
25 says Daimler Fuel Cell Program.

1 MR. FULKS: Thank you so much, Jim, for
2 that introduction. Commissioner Boyd,
3 Commissioner Douglas. My name is Tom Fulks. I am
4 here today representing Daimler Fuel Cells,
5 Daimler's fuel cell program.

6 Ordinarily I am here talking about
7 diesel, which is -- I'm really happy to follow
8 this fellow, he's great, you know. That's
9 wonderful. Daimler puts out a really good diesel
10 product too.

11 The reason I am here today is to agree
12 with and support Honda's comments that were made
13 earlier with regard to hydrogen fueling
14 infrastructure. Bearing in mind that there may be
15 new technologies coming along the way that will
16 help that process along, until such time as that
17 happens we still think it is important to press
18 forward with deploying hydrogen fueling
19 infrastructure, especially retail fueling
20 infrastructure.

21 We would agree with Tom Cackette's
22 assessment that there is a need for hydrogen
23 fueling infrastructure and a need for increased
24 funding of that. The Gap Analysis that is
25 mentioned in the Investment Plan has rightly

1 pinpointed, or at least with regard to the
2 hydrogen industry, that the gap is between the
3 customer and the vehicle and that gap is the
4 availability of fuel.

5 And one of the things that we wanted to
6 do as well is mention that it is really important
7 when considering a grant application to sort of
8 unlearn some of the things that have been learned
9 along the way up until today. For example, the
10 notion that you have to, you have to make hydrogen
11 in order to sell hydrogen isn't necessarily the
12 appropriate mind set when considering an
13 application for retail distribution.

14 For example, a retail -- an application
15 for a retail station or two or three. The
16 Hydrogen Highway funding that is available through
17 the Air Resources Board. On the forms you have to
18 fill out to get that money it says, well what are
19 you going to do if you want to do hydrogen
20 infrastructure. How are you going to increase the
21 renewable content of the hydrogen fuel? How are
22 you going to control all of these issues,
23 environmental issues, relative to the production
24 of hydrogen?

25 And those are legitimate questions that

1 need to be answered. But they don't necessarily
2 need to be answered by somebody putting in the
3 fuel retail infrastructure, particularly if that
4 retail infrastructure is going to be putting out
5 to bid for competitive pricing for hydrogen.

6 So I just wanted to bring that to your
7 attention. When you start seeing applications,
8 your staff starts seeing applications coming in.
9 You don't necessarily have to apply all of the
10 same burden of standards on the retailers that you
11 would on the fuel producers. It's a really
12 important distinction and I wanted to bring that
13 to your attention. And you will be seeing that as
14 time goes on.

15 We also have a question about clarifying
16 the definition of matching funds. The question
17 earlier you asked of the Honda fellow. Well how
18 much does it cost for a Clarity. He said, well,
19 \$600 a month to lease one. It's a million dollars
20 to make a hydrogen car. And so when you -- Today
21 that's what the cost is. And so the investment,
22 at least from Daimler's standpoint, is several
23 hundred millions of dollars already made with
24 vehicles that are on the road.

25 And so it is really important for the

1 automakers and any alliances and partnerships that
2 come forward for retail fueling infrastructure, it
3 is really important to know what's going to be
4 considered a match because of the hundreds of
5 millions of dollars that have already gone into
6 hydrogen fuel cell vehicle development and
7 production.

8 We need to have that clarified right
9 away. Because if there is going to be an
10 additional burden of more money being poured into
11 the hydrogen world we need to know that really
12 right away. Because I can tell you that the
13 notion of applying the money already spent on the
14 vehicles as a match is going to be coming at you,
15 that's no secret, so we need to have that
16 clarified right away.

17 And then lastly my comments are really
18 brief. And that is, I have been listening pretty
19 much on the web and then in person today about
20 reaching the 2050 goals and so forth. And that's
21 great, go ahead, do what you've got to do. But we
22 would implore this group to not allow the perfect,
23 the pursuit of the perfect, to be the enemy of the
24 good. In other words, allow some alternative
25 fuels and vehicles and some CO2 greenhouse gas

1 reductions to take place until such time as we
2 reach the 2050 goals.

3 So you don't want to just say, we can't
4 have anything if it doesn't apply to the 2050
5 goals. You want to make sure that we get some
6 momentum built in the meantime with maybe some
7 good projects versus some perfect projects. So
8 I'll leave you with that.

9 PRESIDING MEMBER BOYD: Thank you.
10 That's the last of the public testimony and
11 stakeholder testimony. Mr. Carmichael has
12 indicated to me that he can only stay until two.
13 We have five minutes to go, Tim, so would you like
14 to take advantage and give your concluding remarks
15 before I do have us break, as Bonnie suggested,
16 for 20 or 30 minutes before we wrap this meeting
17 up.

18 MR. CARMICHAEL: Thank you very much, I
19 appreciate it. I appreciate all the work that
20 went into the report and the presentations today.
21 I learned a lot and it was I think very helpful to
22 the entire advisory group to hear more from the
23 staff level, what's behind your thinking in the
24 report and in the slides you presented.

25 I think it was Danielle Fugere who made

1 the point about the need for this document to be
2 more compelling. The Plan, the report, it is very
3 matter of fact, we are doing what the law requires
4 us to do, and that's the set-up. There needs to
5 be a change the world set-up added to it.

6 Remember, as has been alluded to all
7 day, we are in a very competitive environment.
8 Everyone in this room wants to protect this
9 funding. And I think that compelling message can
10 only help. And without it I think we are just
11 another pot of money that is going to be easy to
12 sweep up.

13 So I strongly encourage the staff to
14 work on, really it can be just a few paragraphs in
15 the opener talking about why this is so essential
16 and how this pot of money over the next seven
17 years is really going to change the world and
18 improve the health and the climate. Key points.

19 Carla Din referred to, you know, on the
20 evaluation side the need to bring in the job
21 creation potential for individual projects. I
22 totally agree with that. But it also should be
23 part of the macro pitch as to -- I think Peter you
24 actually alluded to this this morning. Economic
25 stimulus I think was the phrase you used.

1 But the potential here needs to be
2 highlighted and really can't be overstated. Even
3 if we find over time it wasn't quite what we, you
4 know, hoped it would be, at this point it can't be
5 overstated.

6 Tom Cackette and Dave Modisette's
7 presentations. I agree I think with virtually
8 everything that they presented. And I think I
9 have said in past meetings that I believe there
10 needs to be a balance between the emissions
11 reductions we achieved over the next decade and
12 what we set up for in 2050. I continue to believe
13 that.

14 But I think a lot of what Tom and Dave
15 said about the technologies that we can invest in
16 over the next couple of years, certainly the next
17 seven years, that will benefit in the near-term
18 our state but also set up long-term benefits, are
19 really important.

20 The one important distinction between,
21 you know, Tom Cackette's presentation and my
22 current view on this is the heavy-duty sector.
23 And I look at the spectrum of where we have gotten
24 to in technology development and where we feel we
25 need to go and what I see as the weakest link is

1 the heavy-duty sector. And we touched on this in
2 an environmental call earlier this week that there
3 just doesn't seem to be as much or as many
4 potential success stories there or solutions yet.

5 And so I think we would be very wise to
6 continue to invest in some of these. And whether
7 we call them low-carbon or, you know. Not super-
8 ultra-low-carbon technologies with an eye towards
9 -- and you make this part of the requirement for
10 the proposal that you are going to receive in your
11 solicitation. Show us your pathway, your vision
12 proponent for how your project is going to take us
13 to the next level if it doesn't get there in the
14 first wave.

15 I think that is really important,
16 especially in the heavy-duty sector, and I think
17 it warrants continued investment in some of the
18 fuels that we don't know exactly how it is going
19 to pan out yet. Natural gas for example. A
20 couple of pitches were made today. But I know
21 that there's ARB skepticism, among others, about
22 how far we can go with that fuel in the
23 transportation sector.

24 The gentleman Rain's comments sparked
25 two thoughts that I want to bring in. One is, I

1 mentioned before in an Advisory Committee meeting
2 that the Air Resources Board, Board Members have
3 increasingly begun to talk about recycling the
4 grant money that they will be giving out for
5 various investment projects, whether it's Moyer or
6 otherwise.

7 They, and I don't know that this has
8 actually gotten into contract language yet, but
9 there has clearly been communication with the
10 management team at ARB, look for opportunities to
11 where if you put a million -- we at ARB put a
12 million dollars into a project and all of a sudden
13 it's a huge winner and end up generating billions
14 of dollars, we want our money back. And maybe
15 with some interest so we can use that money again
16 for future project development.

17 I think the CEC should look at it the
18 same way. At a minimum the CEC Commissioners
19 should have a conversation about that.

20 The other point about the algae fuels.
21 In today's papers, I assume people saw the
22 Continental Airlines demonstration of a 737 flying
23 yesterday with at least one engine running on an
24 algae biofuel.

25 California has spent so much time

1 historically on light-duty and heavy-duty vehicles
2 and more recently on ships. We really don't do
3 much relative to aircraft. And when you think
4 about how many Southwest alone. Southwest flights
5 alone each day in our state. It's a high-profile
6 opportunity to talk about advancing fuels in a
7 sector that we know is significantly impacting our
8 climate.

9 And finally I would encourage another
10 meeting of the Advisory Committee meeting, of the
11 Advisory Committee. I heard Commissioner Boyd's
12 comments loud and clear about the time pressures
13 here. But I also feel like the public comments as
14 well as what I anticipate to be additional
15 Advisory Committee comments this afternoon are
16 going to give so much feedback to the staff for
17 the next draft of this plan that it just would
18 really be good for us to have another meeting.

19 Thank you very much for the opportunity
20 to squeeze in my comments before I have to leave.

21 PRESIDING MEMBER BOYD: Thanks Tim. Now
22 does anybody, are we going to be able to hang on
23 to most of the rest of our Advisory Committee
24 members and can we take a 30 minute break? Carla,
25 you look pained.

1 MS. DIN: Right. I actually have to
2 leave around 2:30 so I wouldn't be able to return.

3 MS. HOLMES-GEN: If we need to push on,
4 push on.

5 PRESIDING MEMBER BOYD: So Carla, do you
6 want to make any other remarks? Your earlier
7 remarks were somewhat over-arching and so we took
8 them as --

9 MS. DIN: Sure. Just to tag on to that
10 I wanted to agree with what Tim said about the
11 macro. Because the Apollo Alliance, many of our
12 organizations are being asked for our green,
13 economic stimulus ideas in California on a daily
14 basis. So I would love to be able to point to AB
15 118 as providing that. I wanted to offer our
16 resources. In terms of any of the recommendations
17 I made I have examples from different parts of the
18 country for models.

19 And as far as the educational piece.
20 John had asked earlier about K through 12. And I
21 do know specific allocations, additions to the
22 budget that were made to provide green technology
23 partnership academies, training, and so on that we
24 could connect with.

25 PRESIDING MEMBER BOYD: Thank you.

1 We'll take you up on your offer too.

2 All right, can we take a 30 minute
3 break? There is a snack bar on the second floor
4 for those of you who --

5 (Whereupon, a recess was taken.

6 Mr. Cackette, Mr. Carmichael,
7 Ms. Din, and Mr. Hwang were not
8 present when the meeting resumed.)

9 PRESIDING MEMBER BOYD: Okay everyone,
10 we are way over time. I was hoping we might
11 recruit a few more folks but I think you are the
12 hardcore. You are it. So we should move forward
13 now. I should turn off my BlackBerry.

14 We should get into the Advisory
15 Committee discussion of whatever it is they want
16 to talk about. And the four of you can dominate
17 this discussion. I'll throw the floor open to the
18 Advisory Committee. Come on, Jan, get it off.

19 MS. SHARPLESS: Well, you know, it may
20 have been said many times in many ways, just like
21 a Christmas carol, but I do want to emphasize the
22 fact that I think that the staff has really gone
23 through a good process and that doing a goal
24 driven process I think is really great.

25 I think the issue of the goal was still

1 open and I think this gives us a place to, you
2 know, discuss that and how you reach it. And of
3 course the assumptions that you used in getting to
4 that goal I think are also important.

5 I have to tell you, Jim, that as I was
6 listening to some of the stakeholder comments it
7 just took me down memory lane. A lot of chicken
8 and egg kinds of issues that we are dealing with.
9 Where do you get the vehicles? Who is going to
10 produce the vehicles? When are they going to be
11 rolled out? You know, how do you match the input
12 of the fuel to the cars? And I thought, bring
13 back that trigger.

14 PRESIDING MEMBER BOYD: The trigger.

15 MS. SHARPLESS: We need the trigger.

16 PRESIDING MEMBER BOYD: Use the trigger.

17 MS. SHARPLESS: Use the trigger.

18 PRESIDING MEMBER BOYD: Pull the
19 trigger.

20 MS. SHARPLESS: Shoot the trigger. If
21 it were that easy. So part of I guess the issues
22 that I raised earlier had to do with how you do
23 the sort of rollout. And obviously the more
24 developed the technologies the more you look at
25 the near-term effects.

1 But the concern I have with that sort of
2 interim step is that when an industry is given a
3 signal that perhaps you are going down a certain
4 pathway they will put their resources there. And
5 we will sort of be in that mode.

6 And then we're asking them to, well now
7 that we have taken that interim step we want to
8 take this longer term step. And is it better, you
9 know, to put your emphasis in the beginning on the
10 longer term step? Because we know that there is a
11 great need there for both the infrastructure and
12 the technology.

13 And so I guess my concern was the way,
14 when I looked at the funding recommendations, that
15 I probably would make some modifications to that
16 so that there would be more money going toward the
17 super-ultra-low-carbon, electric drive hybrids and
18 fuel cells versus the more near-term, already
19 developed technologies.

20 And part of that has to do with, I guess
21 sort of the experience that I have had in how
22 industries respond to proposals. And that has to
23 do with the fact that with the more super-ultra-
24 low-carbon technologies we are looking at a longer
25 pathway but there is a greater need there.

1 And I think that if we are going to meet
2 our long-term goals that's what we are going to
3 need to do. We are going to need to focus a
4 little bit more in that direction. So I guess
5 that would mean that I would agree with some of
6 the earlier comments about where you put your
7 focus.

8 I really support the idea of helping
9 remove barriers. Because I do think that barriers
10 become a deal-breaker in a lot of areas
11 undoubtedly and I am glad that you have it on the
12 list. And I do see this sort of falling into the,
13 you know, the political realm that we are in now
14 about a stimulus package.

15 In a way this is a stimulus package.
16 And to the degree that we can tie into some of the
17 stimulus package ideas that are now out there
18 cooking. We have an administration who has a new
19 sort of focus on energy and energy self-
20 sufficiency. That this is a new time that maybe
21 we can take a bigger leap and bigger risk. Maybe
22 we'll have more players.

23 PRESIDING MEMBER BOYD: Thank you.
24 Bonnie, you want to --

25 MS. HOLMES-GEN: Yes, we'll just go

1 around here.

2 PRESIDING MEMBER BOYD: While the mic is
3 hot.

4 MS. HOLMES-GEN: The mic is on. I also,
5 I think we are in a much better place than we were
6 last summer so I am really appreciative of that.
7 All the work that's gone into this. And I think
8 that the focus on the 2050 Vision, to me that is
9 really the crux of this in terms of making sure
10 that we are giving the correct guidance and
11 sending the right signals as to what kind of
12 projects we want to fund here.

13 And I have been convinced that -- And I
14 think we discussed this earlier, 2050 is now in
15 the sense that we need to commercialize these
16 technologies that we need in 2050. We need them
17 commercialized in the 2020 time frame, which means
18 the focus and the investment is now.

19 So I do remain a little concerned that
20 this is not, this doesn't match up enough to where
21 we need to be for 2050. What we need to be
22 focusing on, the technology breakthroughs we need
23 to get in this decade to be ready to move forward
24 in 2050. So I guess I am mainly concerned about
25 the super-ultra-low vehicle category, if that's

1 what it's called, the technology category.

2 And I do agree with the comments of Tom
3 Cackette and I think Tim also agreed. I really
4 think that we need to bulk up that category and
5 put more focus. I really would like to see this
6 plan come back with a higher percentage of funding
7 going to that category.

8 I think, I think that would address what
9 we have been talking about in terms of the reverse
10 engineering and trying to make sure that we are
11 putting the focus where we need, where we need the
12 breakthroughs now.

13 And from my perspective I think we could
14 actually hone down. I think Jan was alluding to
15 this a little bit. That we could hone down and
16 focus even more and not be, not have quite so many
17 categories of funding. And I think that the
18 categories, the super-ultra-low technologies, the
19 vehicle efficiency and the -- vehicle efficiency
20 and I think the advanced, the advanced biofuels.
21 I think those three are really the areas that we
22 do need to focus.

23 I think Tim brought up the question of,
24 can we really do all of this that has been laid
25 out in this time frame, should we have a little

1 more focus. And I would certainly be open to the
2 Commission and staff kind of looking at a little
3 more honing down, a little more focusing to make
4 sure we are hitting those key technologies that
5 are cited in the 2050 Vision.

6 And I guess the second area I wanted to
7 chat about is just the health, health connection.
8 Of course since we are a public health
9 organization that's a key focus of mine. And I
10 wanted to suggest that there could be included a
11 little more language in the investment plan on the
12 compelling health reasons, air quality and health
13 reasons that we are pursuing these alternative
14 fuels. And I think this could be part of the kind
15 of re-energized and stepped up case that could be
16 made at the beginning of the document as to why
17 this program is so important.

18 So I would like to suggest that we do
19 include a stronger focus on the public health
20 reasons that we are moving forward in alternative
21 fuels and that we clarify that health and air
22 quality would be a part of the selection criteria
23 for the projects.

24 Now we have the anti-backsliding
25 criteria that has been approved by ARB and that's

1 very helpful, but it certainly seems that we would
2 want to be investing in those projects where we
3 can that are going to be providing near-term air
4 quality benefits and public health benefits. Not
5 just ensuring that we are not backsliding and not
6 taking away from our air quality efforts but we
7 want to make sure that to the best we can we are
8 using this public funding to help improve air
9 quality and move us quicker toward our federal and
10 state air quality standards.

11 And I think there's, you know, a
12 tremendous amount you can say about health and air
13 quality and the connection to alternative fuels.
14 And, you know, I am still concerned that there's a
15 lot of research and evaluation going on on some of
16 these fuels and we don't fully know all of the air
17 quality health impacts, even some of these fuels
18 we're talking about funding, especially in terms
19 of the biofuels.

20 So I want to make sure there's a link
21 too so that we are integrating new research and
22 new information on health and air quality impacts
23 into the Investment Plan process and into the
24 selection process for the projects.

25 And then I also just wanted to mention

1 the sustainability issue and I appreciated
2 Danielle Fugere's comments. And I do think that
3 this document could use a stronger link to the
4 sustainability issue and metric that's being
5 developed. I appreciate again that the Energy
6 Commission is doing I think a good job in trying
7 to wrestle with this issue and trying to develop
8 some sustainability standards, or at least a
9 process to deal with this as part of the
10 regulatory effort.

11 But I think that this document needs a
12 link to that and to clarify that we are seeking to
13 invest in fuels that meet basic, you know, basic
14 sustainability criteria and that are not worsening
15 other environmental problems and not, of course,
16 contributing to air quality problems.

17 So those are I guess the few comments I
18 want to focus on at this point.

19 PRESIDING MEMBER BOYD: Thank you.

20 MS. HOLMES-GEN: Thank you for your
21 tremendous efforts. I do, I would like the idea
22 of having another Advisory Committee meeting but I
23 understand the need to move forward and, you know,
24 not to kind of get buried in the process too.

25 But I do think it would be helpful to

1 have one more phone call or meeting because I am
2 hoping that the percentages will change a little
3 bit and we will have a little more focus on super-
4 ultra-low emission -- super-ultra-low fuel
5 technologies in the document.

6 PRESIDING MEMBER BOYD: Will.

7 MR. COLEMAN: Thanks. First I do want
8 to applaud Peter and Tim and the rest of the staff
9 for the level of effort they put into all this. I
10 do think that the minute you say you have money,
11 having been in that situation, you have a lot of
12 people coming for it. So I'm sure you have had a
13 challenging time balancing all the different
14 stakeholders that have come to your door.

15 But I think that the document that we
16 have now gives us a lot more clarity than we have
17 had in terms of where the staff wants to go with
18 the implementation.

19 And I hesitate a little bit to bring up
20 sort of my over-arching concern about where we are
21 at today at the risk of creating disharmony that,
22 you know, slows down the process. I think we all
23 appreciate the fact that we want to get this in
24 place and we want to get the funding in place so
25 that, you know, there can be an impact from this.

1 I think that in listening to other
2 people's comments and in trying to figure out
3 where my over-arching concerns are I think it
4 really comes down to the fact that we -- this is
5 an important regulation and I think Danielle
6 pointed this out. Peter, you said people are
7 watching.

8 And I think it requires that we get it
9 right. We don't want the perfect to be the enemy
10 of the good but we want it to be as close to a
11 meaningful way of approaching this problem as
12 possible. And I don't think anybody else out
13 there has really come up with a meaningful way of
14 distributing public funds in such a way that you
15 have a performance-based approach and that you
16 actually get the kinds of impacts that you want
17 out of the regulation. And so I think that's the
18 big challenge that we are faced with.

19 In terms of this regulation I think the
20 -- I am also getting over a cold in case you can
21 tell. The issue I think is really one of how do
22 we deal with translating this initial document
23 into an implementation or into a set of criteria
24 for selection.

25 And I think what came out of the

1 conversation a little bit earlier is that the
2 scope of this group was really defined and really
3 focused around the initial Investment Plan. And
4 the idea of what the solicitation will look like
5 is still sort of down the road. But I think that
6 the translation from the kinds of allocations that
7 have been set up in this document, into how those
8 selections will be made, is pretty important and I
9 think it actually feeds back on how these
10 allocations are made.

11 I think we have really two things to
12 play with in terms of this legislation. One is
13 allocations and the other is selection. And I
14 think that -- The part I was hesitant to talk
15 about was that I think the allocations right now
16 are driven by a back-casting model that makes me a
17 little concerned.

18 Because I think it is essentially going
19 out to 2050 and then taking a single scenario and
20 saying, what do we want the world to look like in
21 terms of a mix. And therefore, then what do we
22 incentivize. And I think that's a really
23 dangerous route to go down because we really don't
24 have any clue of what the world is going to look
25 like in 2050.

1 And we were talking about it a little
2 bit earlier, you know. If we did that in 1968
3 well, you know, we would have one version of the
4 world today and it would probably be a little bit
5 more accurate than if we did that in 1908 where we
6 were still riding around on horses.

7 So, you know, I think that we have to
8 figure out how to do in this document is set up a
9 set of criteria that are performance based, that
10 allow us to pick the best-in-class technologies,
11 the best-in-class solutions, that have the highest
12 dollar impact or highest reduction per dollar. So
13 what we want is to figure out how to do that in
14 such a way that it accounts for a whole slew of
15 different variables.

16 And I don't think it is extraordinarily
17 complicated but the concern I have is that by
18 sticking with the way that the bins are cut right
19 now we end up, basically the die is cast before
20 we even get to the selection process. So we'll
21 end up debating in this process whether or not
22 more money should go into the super-ultra-low-
23 carbon bin or whether it should go into the ultra-
24 low-carbon bin. You know, ultimately that should
25 kind of be dictated by what is the, what is the

1 likely performance of the proposal coming into any
2 given bin.

3 And it also is dictated by another thing
4 which is everyone is concerned about timing. And
5 we want to reach for this 2050 goal and we are
6 concerned about going through this 2020 gate to
7 get there. I think you can solve that by thinking
8 about reductions the way you think about an
9 investment in terms of the discount rate.

10 I mean, I think that you can very simply
11 say, when a technology comes in and it applies
12 for, for funding you look at three basic things.
13 You look at the reductions promised from that,
14 look at the total dollars directly that have to go
15 into that proposal and then the total dollars
16 additionally that have to go into unlocking the
17 dollars in that proposal.

18 So, you know, if you are talking about
19 fuel infrastructure you are also talking about,
20 are there going to be vehicles out there to
21 actually consume the fuel and what does it take to
22 actually unlock the carbon reductions that are
23 being promised in this proposal. And then you
24 take into account time.

25 You know, I think the issue we are kind

1 of ducking around is well, does super-ultra-low-
2 carbon, does that bucket ultimately represent 2050
3 or is that just that it is sort of the most
4 reductions? The reason I think these buckets are
5 challenging is because I don't know that they
6 represent time or that they represent, you know,
7 specific technologies. They kind of represent an
8 overall goal for reductions.

9 And so I think that if what you did
10 instead was you could either do it by stage, which
11 we talked about. And I actually think -- this was
12 back in the TIAX document a ways back. But there
13 was, you know, the options were staging impacts,
14 fuel type, technology buckets and the area of
15 need. You know, that was a fundamental assumption
16 that's driven the structure of this and now I am
17 not sure that was ever debated, whether or not
18 there are other ways to do it.

19 But if you did this thing by stage you
20 can imagine setting up buckets where you take the
21 Gap Analysis that's been done. Basically you take
22 this whole report that's been done and you use the
23 recommendations that are in there as a guidance
24 for wherever we want to go.

25 But you take a step back before you

1 actually use these allocations as a way of
2 defining exactly how much goes to each technology
3 or category and you say, is this going to be a
4 guide. Instead what we are going to do is we are
5 going to put a certain amount into R&D, a certain
6 amount into demonstrations, a certain amount into
7 commercialization and a certain amount into
8 deployment.

9 And when different proposals come in
10 they come in from across the board in terms of
11 technologies. And the guide that's sitting on the
12 side of the CEC is they have done all the gap
13 analyses, you know, you have looked at where the
14 appropriate use of funds is. And that's a way for
15 you to guide your thinking in terms of which
16 proposals should be chosen.

17 But all of those proposals have to
18 essentially compete on a dollars per reduction
19 basis. And then you can add in whatever other
20 metric you want, whether it's job creation or
21 whether it's a sustainability metric. Whether or
22 not that is created. But I feel like the risk --
23 The concern I have is that we are debating what
24 should be done when and how and none of us have
25 any way of doing an apples to apples comparison.

1 And so I don't know whether it has to be
2 done in the regulation itself or whether it's, you
3 know, somebody needs to go out there and one of
4 the things we need to fund is a study to actually
5 do an apples to apples comparison of all these
6 different options and what it is going to cost on
7 those carbon reductions.

8 But I feel like if the burden is put on
9 the CEC to do all of those analyses it is going to
10 be a challenge. If the burden is put on the
11 companies to come in and say, here is a proposal
12 and this is what we are proposing to unlock, it is
13 going to be a more manageable model.

14 It's a long-winded way of saying -- I'll
15 just throw it out there.

16 PRESIDING MEMBER BOYD: Thank you, Will.
17 John.

18 MR. SHEARS: First of all I would like
19 to express my deep appreciation for all of the
20 work of Energy Commission staff. Incredibly
21 aggressive deadlines. You know, this is a huge
22 issue to grapple with and try and craft a
23 consensus around. I just want to express my
24 appreciation to staff for all their efforts in
25 trying to grapple with all this.

1 I come to this issue from a research
2 background in oceanography. That's a linked
3 science to climatology. And so my pragmatism is
4 formed by a certain idealism and hopefulness in
5 that I think we are on a precipice right now in
6 terms of what the climate system is telling us is
7 going on on the planet.

8 And while I very much appreciate the
9 comments, you know, coming from a modeling
10 background, all models are wrong but some are
11 useful. What the world will resemble in 2050
12 versus what we imagine it could be in 2050 are
13 going to be very different.

14 But we need to, you know, provide, you
15 know, that financial support, that guarantee in
16 there for these high-risk investments that, you
17 know, can deliver us, in support of goosing up
18 hopefully the numbers on the super-ultra-low-
19 carbon side of the equation.

20 For us to be able to really get out
21 there we are going to need to have as many
22 different option on that side of the equation as
23 possible. And I would also -- In saying that I
24 would like to, you know, also think about, you
25 know, I think it was Tim that mentioned we really

1 need to be thinking more on the heavy-duty side in
2 the same way that we are sort of -- I think
3 everyone recognizes the place that we are at right
4 now on the light-duty side. It seems like we have
5 a lot of options, some which seem to be more
6 practical in the near-term, some that hopefully
7 will be more practical in the mid- to long-term.

8 We really, really need to also be
9 mindful that, you know, we need to -- the arc of
10 this round of this program. Hopefully this will
11 be the first round of this program. We can
12 hopefully help move the medium- and heavy-duty
13 side further along. So if the Legislature decides
14 to go at this again we can really move the ball
15 much further forward. So I just wanted to offer
16 those comments.

17 In speaking in support of maybe moving a
18 bit more of the funding priority over to the
19 super-ultra-low side I also want to note that in
20 Tom's comments about the retrofits on the E-80
21 side. I am not sure that I can support those
22 comments because part of what we may be looking at
23 is also for the battery manufacturers for battery
24 packs that are going to be robust enough for
25 vehicles. And for them to have markets to help

1 get the costs down. To help the OEMs with their,
2 you know, plans for the deployment of plug-ins and
3 various forms of pure battery electrics. They may
4 also need some of that assistance in terms of the
5 market that's available on the retrofit side for a
6 battery market.

7 Finally, on the sustainability side I
8 would like to see a little more of Jim's work, Jim
9 McKinney's work show up in the Investment Plan.

10 It would be nice if -- You know, to echo
11 Danielle's remarks earlier, Danielle Fugere's
12 remarks. It would be nice to see a little more
13 specificity in the Investment Plan as to actually
14 how, you know, the vision for sustainability will
15 match up with what is being proposed in the
16 regulations. Which I unfortunately haven't had a
17 chance to, the draft regulations I haven't had a
18 chance to read yet.

19 So again, thanks for all the efforts. I
20 recognize, you know, the huge challenge that staff
21 has had in managing this whole project and very
22 much appreciate their efforts and the opportunity
23 to participate in this, this program.

24 PRESIDING MEMBER BOYD: Thanks John.

25 And I'm sure the staff appreciates the comments of

1 all of you and others today who have complimented
2 them for the hard work.

3 Commissioner Douglas, would you like to
4 make any remarks? I am not going to offer the
5 staff a chance at rebuttal.

6 (Laughter)

7 ASSOCIATE MEMBER DOUGLAS: They might
8 take another -- No. I have really benefitted from
9 the opportunity to hear public comment, hear the
10 Advisory Committee's comments. As Commissioner
11 Boyd said earlier, the draft that went out was a
12 staff draft and their effort at putting something
13 forward. We have been listening very carefully to
14 input. We are going to go back and debrief with
15 staff and talk about process and think about, come
16 up with some quick decisions on the best way to
17 move forward. But I think this has been a very
18 helpful and productive meeting and really
19 appreciate all of your participation in it.

20 PRESIDING MEMBER BOYD: Thank you.

21 MR. EMMETT: Have all -- This is Daniel
22 on the phone. Have all of the committee members
23 in the room spoken?

24 PRESIDING MEMBER BOYD: Daniel, deepest
25 apologies. We forgot about you folks out there.

1 MR. EMMETT: I may be the only committee
2 member left on the phone.

3 PRESIDING MEMBER BOYD: Please, by all
4 means. And if there's any others out there I will
5 ask for you. We kind of got this cozy little
6 family going here.

7 MR. EMMETT: It sounded like it. It
8 sounded like things were wrapping up so I wanted
9 to jump in. Thank you.

10 PRESIDING MEMBER BOYD: Thanks.

11 MR. EMMETT: Well I just -- I'll keep it
12 brief because I don't want to be repeating things
13 that have already been said except to say, first
14 of all, yes, thank you so much to staff for
15 putting this piece of work together. It has given
16 us a lot to chew on and think about. And with the
17 level of discussion here I think you can see that
18 there has been a lot of progress made.

19 My first comment echoes really what Tom
20 Cackette and others said about the focus on 2050.
21 Our reaction was much the same in terms of in
22 terms of perhaps wanting to see more of a focus on
23 the super-ultra-low-carbon solutions with the eye
24 on 2050. So without going into any more detail we
25 would just echo that.

1 And diving in a little more specifically
2 on a couple of elements. It looks to us like in
3 the medium-duty/heavy-duty sector that there
4 really should and could be more investment in the
5 super-ultra-low-carbon and that this 2050 Vision
6 perhaps may not be completely accurate. And this
7 gets to what Tim Carmichael was saying about
8 needing additional solutions for the heavy-duty
9 sector in terms of fuel and vehicles. And that we
10 can't rely completely on the low-carbon.

11 And some of what Tom Fulks and others
12 were saying about really moving to the ultra-low-
13 carbon forms of biogas renewable diesel. But also
14 importantly hydrogen. Particularly in transit
15 hydrogen buses are a real viable solution, even in
16 the 2020 time frame. And it seems to me there
17 could be some effective role for that with prices
18 coming down, warranties going up and durability
19 being demonstrated on the transit, heavy-duty
20 transit side of things.

21 On the retrofit upfit I would have to
22 agree with John Shears and with staff that this is
23 an important category for funding. With all due
24 respects to the OEMs and their recent interest in
25 battery electric vehicles and plug-ins. Certainly

1 we have seen the gasoline prices drop and we also
2 know that they don't have all the answers.

3 Particularly when we are talking about
4 economic development and stimulating green tech in
5 California. This is where a lot of the innovation
6 and ideas and jobs will come from is in the small,
7 California companies that are developing this
8 technology that ultimately, hopefully the majors
9 will acquire, license or mimic. So I think the
10 retrofit upfit is a really important category for,
11 for even in the, now the 2020 time frame, for
12 funding because it will get these new technologies
13 and applications in process, out on the road and
14 prove them, demonstrate them, and also deliver
15 real greenhouse gas benefits.

16 The fourth point has to do with the
17 broader point of economic development. And we
18 would agree that this should really be the, an
19 over-arching theme in this, in this Investment
20 Plan. That everything essentially should be
21 framed this way.

22 And perhaps one way for the Plan to
23 really demonstrate or prove out this point is to
24 essentially require some or include some sort of
25 criteria for, for demonstrating what the benefit

1 is to California in terms of job creation, in
2 terms of, you know, economic development.

3 And perhaps in every solicitation the
4 applicant would need to respond to this and say
5 what it would do for California. And there should
6 be criteria perhaps for giving extra points or
7 credit for those that demonstrate that better than
8 others and for those that are based in California
9 or would conduct their projects in California.

10 And then finally, and this gets to this
11 broader point of, this is so exciting, there's so
12 much work to be done, and it is really neat to see
13 this happening right before our eyes and it is no
14 small task for those involved to implement this.

15 I would simply suggest or highlight
16 something that is called for in the statute, which
17 is the Plan should describe how funding will
18 complement existing public and private
19 investments, including existing state programs
20 that further the goals of the chapter. And that's
21 straight from the statute.

22 And I'd say that this really says that
23 we need to be taking advantage of all of the
24 resources that are currently at our disposal or at
25 the Commission's disposal. And that would

1 include, you know, like the offer that Matt
2 Miyasato made with the South Coast Air District.
3 It would include, for example, the staff at the
4 Air Resources Board that have got expertise on
5 deploying hydrogen fueling stations. So that
6 perhaps you could lighten some of the Commission's
7 load and it would allow more expeditious
8 allocation of funds with some certainty of the
9 ability to do that in areas where you could use
10 some support.

11 So those are my points and this is
12 really exciting and thank you for the opportunity
13 to comment. And that's it, thanks.

14 PRESIDING MEMBER BOYD: Thank you, thank
15 you Dan.

16 MS. HOLMES-GEN: Can I say one quick
17 thing? This is Bonnie. Daniel reminded me that I
18 did want to also support the comments that were
19 made about how the CEC could partner with cities
20 and counties in promoting electric vehicle
21 charging infrastructure and helping cities and
22 counties make those very proactive moves to
23 support super-ultra-low-carbon technologies.

24 I didn't see that in the discussion and
25 maybe it was and I missed it. But I did want to

1 make sure. I thought there were some good
2 comments that were made about that in public
3 testimony. How we can work with cities and
4 counties and help to promote the most, the 2050
5 technologies in that way also. So if we can
6 include that in the Vision. Thanks.

7 PRESIDING MEMBER BOYD: Thank you,
8 Bonnie. Anyone else out there on the Advisory
9 Committee that I forgot to reference?

10 MR. WARD: Yes, Commissioner. I am
11 Peter Ward representing Peter Cooper, who was not
12 able to hang on to the call. He did provide --

13 PRESIDING MEMBER BOYD: Slick move,
14 Mr. Ward.

15 MR. WARD: Peter Cooper representing the
16 Labor Federation. He provided a statement that I
17 will read into the record if that's okay to make
18 sure he's represented.

19 PRESIDING MEMBER BOYD: Fine.

20 MR. WARD: "I strongly support the
21 comments by Carla Din regarding
22 standards and tracking for
23 employment creation and wages.
24 Funded entities who come back to
25 the Energy Commission in future

1 years should be held accountable
2 for job creation, wages and
3 turnover. The employment training
4 panel has a good model for this."

5 And I understand we have someone still
6 on the phone, very persistent, and has stayed a
7 long time. Not on the Advisory Committee but
8 one --

9 PRESIDING MEMBER BOYD: A stakeholder
10 that we forgot to ask?

11 MR. WARD: A stakeholder --

12 PRESIDING MEMBER BOYD: Well I apologize
13 for that.

14 MR. WARD: -- who was not able to get
15 her comment in. It's Judy Bishop. Judy, are you
16 there?

17 MS. BISHOP: Yes, that would be me.

18 MR. WARD: Okay. Hello, Judy, go ahead.

19 MS. BISHOP: Ms. Ethanol here.
20 Ms. Ethanol, Ms. Biofuel, whatever you need for us
21 to be. Seventy seconds. Thanks for all that you
22 do. And as we know, we educate the next
23 generation, we've got it in the bag. That's what
24 we are doing all day long.

25 MR. WARD: Judy.

1 MS. BISHOP: Yes.

2 MR. WARD: State where you're from and
3 your affiliation.

4 MS. BISHOP: Oh. San Diego EcoCenter
5 for Alternative Fuel Education. Five years in the
6 cooking, 30,000 students later, we have convinced
7 the next generation that the way for the future is
8 for them to vote with their dollars. They are the
9 consumers and voters, the policy makers of our
10 future. And they come here every day. Put 60 of
11 them on the bus, I guarantee you you've got 60
12 more people in San Diego today that know when they
13 grow up they are not going to be driving a
14 gasoline car. They are going to be going for the
15 future of whatever that means in alternatives and
16 renewable energy. So keep up the good work and
17 throw some money at education. Thanks.

18 PRESIDING MEMBER BOYD: Thank you, Judy.
19 If I am not mistaken you submitted a letter, at
20 least your organization did.

21 MS. BISHOP: I did.

22 PRESIDING MEMBER BOYD: And I've read it
23 and I suddenly remembered it when I heard you
24 speaking. So thank you.

25 MS. BISHOP: My pleasure, thank you.

1 PRESIDING MEMBER BOYD: Anyone else out
2 there that we inadvertently, I have inadvertently
3 forgotten to ask about?

4 MR. EMMETT: You know -- This is Daniel
5 again.

6 PRESIDING MEMBER BOYD: Uh-oh, two
7 bites.

8 MR. EMMETT: I'm sorry, I forgot one
9 small --

10 PRESIDING MEMBER BOYD: No, no.

11 MR. EMMETT: One small thing I wanted to
12 add about the barriers discussion.

13 PRESIDING MEMBER BOYD: Please do.

14 MR. EMMETT: It's been mentioned a
15 couple of times and I know we don't have enough
16 time to have a more robust discussion but it is
17 included. And the only thing I want to say about
18 it is that these may even be things that are
19 across agencies. That really it's --

20 You know, for example, we came across it
21 in the Hydrogen Highway context where I think it's
22 maybe been alluded to but, you know, the standard
23 development. So out of the Hydrogen Highway
24 funding some of that funding had to be passed over
25 to Weights and Measures for them to essentially,

1 to work on the standard.

2 So there may be numerous areas like this
3 where, you know, it's just across agencies where
4 money may need to flow or maybe it's just prodding
5 and organizing. You know, for example, similar
6 things with the fire marshal and first responders
7 for some of these new fuels. And to get this on
8 the fire marshal's radar to be able to sort of
9 address some of these real practical nuts and
10 bolts issues that are going to be really important
11 for deployment.

12 And that can only happen with prodding
13 and with maybe a little bit of money. But it's an
14 area that perhaps with that extra little bit of
15 money that AB 118 can bring to the, to the table
16 can move some of the fellow agencies that may not
17 even know that they are standing in the way
18 perhaps of deployment.

19 PRESIDING MEMBER BOYD: Thanks Daniel.
20 And I want to comment. The barriers issue has
21 come up two or three times today and I want to
22 comment on it here before -- making sure there's
23 nobody else out there and then making my final
24 comments.

25 And Daniel, I like your approach and I

1 appreciate what you said. Because sometimes when
2 somebody says, we have got to get rid of the
3 barriers, a lot of people assume immediately they
4 must be talking about attacking regulations,
5 quote/unquote, and a desire to look at and open up
6 regulations and change them. My own Governor
7 might get angry with me in a few minutes here if I
8 keep going.

9 But my long experience has been that
10 oftentimes it is really not the regulations. And
11 I must -- And I have got a very definite
12 experience with this and CEQA back in the days
13 when we did cleaner-burning gasoline. There was a
14 huge effort to open up CEQA and change it in order
15 to try to facilitate the construction or the
16 modifications to all of the refineries in
17 California that had to be made, et cetera, et
18 cetera. And if you want that fast you've got to
19 do that.

20 My feeling was, and I got some
21 legislators angry with me at the time was, what we
22 really need to do is get all the agencies working
23 together quickly and focused and so on and so
24 forth. And that's what was done and that worked.
25 So it's not the law, it's the inertia that exists

1 between so many agencies. So Daniel's point about
2 getting everybody together, and/or giving some of
3 them some money to do what they have to do.

4 And I'll throw a bouquet to the staff.
5 And you better bank this one because there may be
6 some non-bouquets coming later. In the
7 presentation you did reference standards and this
8 that and the other and I heard a definite
9 recognition of some of the issues that Daniel
10 brought up. So I think while the staff and we all
11 soaked up what we heard today, at least there is a
12 recognition of needing to help people carry out
13 their responsibilities.

14 And there is a direct reference to the
15 fire marshal issue. And there's a lot of us in
16 the room. I'm looking at Peter as one of the old-
17 timers like me who have lived through many
18 alternative fuel vehicle and technology programs
19 where fire safety and what have you -- And I
20 shouldn't, I don't want to age Jan too much. Your
21 hair is so much prettier than mine. We lived
22 through a lot of this with all these things. And
23 fire marshals are a big thing. And I think most
24 people have learned you have got to deal with this
25 fire safety issue and hopefully we've heard that.

1 So Daniel, thank you for bringing it up,
2 it's a good point. And it isn't -- And most of
3 the time it is really not meant to be an attack on
4 regulation, it's to bring up the fact there are
5 barriers that can be conquered without doing
6 surgery on other things that don't need the
7 surgery quite frankly.

8 Okay, my concluding remarks on the whole
9 day. I really have enjoyed this for many reasons.
10 One, I just really enjoy the interchange amongst
11 the great minds with all kinds of ideas on any
12 particular subject. And so this has been, this
13 has been extremely interesting. And I appreciate
14 the inputs and I know we will consider the inputs.

15 (Whereupon, Mr. Cackette and
16 Mr. Hwang rejoined the panel.)

17 PRESIDING MEMBER BOYD: All right, I am
18 going to interrupt my closing comments because two
19 Advisory Committee members just walked into the
20 room.

21 MR. CACKETTE: Apologize for being late.

22 PRESIDING MEMBER BOYD: No. And I want
23 to ask you if you want to make any concluding
24 remarks before we shut this down. Which I was
25 doing my concluding remarks, Commissioner Douglas

1 already having made hers.

2 MR. HWANG: A dangerous place to be.

3 PRESIDING MEMBER BOYD: But I want to
4 give, you know. Dan, we forgot him and so I
5 interrupted once. He's out there on the phone
6 still. Would you, either of you like to make any
7 comments just on the day and any reactions, et
8 cetera, et cetera? Tom.

9 MR. CACKETTE: No, it's fine.

10 PRESIDING MEMBER BOYD: Roland. Tom,
11 you know, did get a bite at the apple earlier.

12 MR. HWANG: Well, a dangerous thing to
13 do of course, miss the closing comments by the
14 Commissioners and others' closing comments.

15 PRESIDING MEMBER BOYD: I'm not done
16 yet.

17 MR. HWANG: Okay. It's interesting for
18 me to do without having heard what you said.

19 MR. CACKETTE: We do want you to know we
20 didn't eat. That was not part of this.

21 (Laughter)

22 PRESIDING MEMBER BOYD: Well, I feel for
23 you.

24 MR. HWANG: You know, again, I
25 appreciate all the work. I think the Investment

1 Plan has come a great, has made great progress
2 from our very first meeting. I think that overall
3 the staff has done just a tremendous job of
4 creating some structure here and I think the
5 elements are here.

6 I think just to probably again be
7 repetitive with some of the other comments I
8 imagine, is we do have this concern about the 2020
9 versus 2050. You know, apportionment of the
10 funding using the 2020 rather than the 2050.

11 I thought Dave Modisette's presentation
12 and some of those numbers, how he came up with the
13 question about the light-duty versus heavy-duty.
14 And when he combined them why it seemed like
15 there's some sort of disproportional weighting
16 towards the heavy- and medium-duty in the bins. I
17 thought that was a kind of interesting analysis
18 and I'm wondering if staff could maybe get back to
19 us on that. How that math works out.

20 But in general I thought that, you know,
21 the question of -- it felt pretty compelling about
22 the cumulative benefits associated with some of
23 the super-ultra-low emitting categories in terms
24 of how much greenhouse gas contribution I thought
25 were pretty compelling and speaks to a different

1 apportionment of the funding.

2 I think the other issue is
3 sustainability safeguards or standards. I think
4 that we need to have off-line discussions with the
5 staff and I think we can continue to have those
6 discussions. Danielle Fugere I think raised these
7 points quite well. We would like to see some sort
8 of criteria in the proposal, scoring of the
9 proposals. Some criteria. It may not be the
10 perfect criteria starting off with but it should
11 be some sort of criteria, minimum screens and some
12 scoring capabilities on the sustainability side to
13 send that message correctly to get the right kind
14 of projects pulled forward.

15 Lastly I would say on the Investment
16 Plan itself. I think that there's in my mind
17 still some ambiguity about the cross-blocking
18 between the Investment Plan apportionments and how
19 the actual allocation of the actual grants and
20 incentives will come out. How does that -- How
21 does this plan provide guidance to the actual
22 apportionment?

23 Is there a quarterly check-in? Is there
24 a, you know, a semiannual check-in to see if the
25 grants going out the door proportionately

1 speaking, roughly speaking, conform to what's in
2 the Investment Plan or, which I at very minimum
3 recommend, or is there the criteria for
4 prioritizing and also developing a level of
5 appropriate funds for each project. Is that going
6 to reflect some of the criteria that were used in
7 this Investment Plan?

8 I.e., if you have the ability to
9 contribute substantially to 2050 does that project
10 get a better score than a project that maybe
11 contributes a lot to 2020. You know, has a
12 substantial potential to 2020 but doesn't have a
13 2050 kind of pathway to longer term, larger
14 productions.

15 So I think some of those kind of
16 questions I think kind of need to be worked out
17 just to make sure that there's kind of a macro
18 kind of assessment about whether the actual
19 projects funded are conforming to the Investment
20 Plan, are consistent with the Investment Plan.
21 But also some structural things on an ongoing
22 basis as you evaluate the projects and prioritize
23 and decide on levels of funding. There should be
24 some sort of cross-blocking between that to the
25 Investment Plan criteria.

1 And those are my comments, thanks.

2 PRESIDING MEMBER BOYD: Okay, thank you
3 very much. We'll add that to the discussion.

4 Closing comments from me. Speaking for
5 myself but I don't think there will be much
6 disagreement. What I am looking for, I think we
7 are looking for, particularly at this point in
8 time is, you know, of course a dynamic plan that
9 recognizes the fluidity of the time that we live
10 in. So that's a struggle we have to deal with.

11 Recognizing that. And I like Will's
12 analogy. In 1908 I'm not sure they would have
13 forecast today. In 1968 they might have done a
14 better job. But it's really hard to tell where we
15 are going because a few months ago nobody could
16 tell you the situation we were going to be in
17 today. So therefore, you know, we have to set
18 this up in a way that works for all of us and that
19 we can all mutually respond to how the world
20 changes.

21 We seek balance and we have had a lot of
22 discussion about that. We seek to leverage other
23 opportunities and other resources. And we heard
24 offers today. And we have had some possibilities
25 pointed out to us which I think are helpful.

1 I think to me 2020 is a way point on the
2 way to 2050, nothing more than that. So I am not
3 going to personally get all bound up over, over
4 the 2020 point in time. It's like a mid-course
5 correction on a regular basis but including in
6 2020 I guess to make sure we are getting to 2050.

7 And I don't -- That probably didn't
8 sound too good but I guess one of the things that
9 really struck me today was absolute unanimity
10 amongst the commentors, particularly our Advisory
11 Committee, on the 2020 versus 2050 dilemma and
12 whether there's enough money in the bins or
13 whether the message has been sent wrong. And I
14 must admit, listening to their representation, it
15 wasn't very clear.

16 Actually Dave Modisette I thought did
17 the staff a favor by throwing up some of their
18 staff charts that showed that that, that the staff
19 had really looked all the way to 2050 and actually
20 had a pretty good view of what the world was going
21 to look like. And that is not a defense of any
22 bin allocations, it is just to point out that from
23 day one we have acknowledged and kept faith with
24 the 1007 plan which said 2050 is the ultimate
25 goal.

1 So there is no concern in my mind that
2 we are striving for 2050. There is concern in
3 everybody's mind, do we quite have the recipe
4 quite right. And I know Commissioner Douglas and
5 I will certainly be discussing that at length.

6 One additional comment. A lot of
7 discussion about economic stimulus, jobs for
8 California, et cetera, et cetera. I think we
9 recognize -- Frankly, even before the sky fell on
10 us as bad as it did I think we were recognizing
11 this program offered that opportunity.

12 And Commissioner Douglas and I have
13 talked quite a bit about the importance of that
14 and this issue and how important it is to the
15 whole policy structure of California. So I think
16 you can rest assured that we will see that. And
17 this is an area that probably needs to be front-
18 loaded as well. That we address those issues and
19 take advantage of everything we can in that
20 particular arena.

21 I will put one concern that I carry out
22 on the table. Because I keep looking at my title
23 and it says you're an Energy Commissioner. And
24 yes, I spent 20 years in air quality so I worry
25 about that too. But we didn't have a lot of

1 discussion about the energy goals. Although
2 spill-over benefits of everything we talked about
3 today in getting at our climate change goals have
4 energy benefits.

5 But, you know, right behind addressing
6 climate change, which those who know me well know
7 I was a very early advocate of doing something
8 about and pursuing so there is no question in my
9 mind about the need to do that. Is, does this
10 reduce our dependance on petroleum, goal.

11 And a concern I have is that, you know,
12 as we charge out of the chute in this very first
13 year that in doing what we do that we not forget
14 that goal. And do some things maybe early on that
15 help get to climate change in early steps but also
16 start sending strong signals that, that this state
17 is determined to address that goal and start to
18 get the people used to the need to address that
19 goal and wean our lifestyles away from petroleum
20 more and more.

21 And that gets me to maybe my last
22 comment, which is -- I think one of my take-aways,
23 and it's particularly hammered home by all the
24 2020/2050 discussion today, is how, you know, how
25 important the message is. There's two components.

1 My first thought was, well this is only the first
2 year, year and a half and it is very easy to make
3 corrections. But I also realize, this Investment
4 Plan sends a message and it's the first one out
5 the door.

6 And I'm almost wishing it was like, here
7 is the -- we need to state really good -- we need
8 to have good messages that state what it is we
9 want to do over the long haul. And Appendix A is
10 the Investment Plan for the first year, year and a
11 half and there will be multiple Investment Plans
12 thereafter.

13 So I began to realize that a lot of what
14 you are talking about I interpret as concerns
15 about the message that is sent by this very first
16 document that ever goes out the door. Because it
17 is the most important one of all in terms of that
18 community that is sitting out there waiting for
19 it. And the messages to the auto industry, to the
20 energy industry and to lots of other folks is very
21 important so we will have to be very careful in
22 recognizing that and not sending the wrong
23 message.

24 But by the same token not, not twisting
25 around ourselves around the flagpole too much

1 about the exactness of this, the very first money
2 out the door. We are going to learn by doing.
3 And maybe for the first time in my life repeat Tom
4 Fulks. You know, the enemy of the -- don't kill
5 the -- I can't even say it right now. I know it,
6 I've used it 1,000 times. But you get the
7 message. Don't let the good be the enemy -- Don't
8 let the perfect be the enemy of the good. I'll
9 get it right.

10 And so we will worry a lot about how
11 this is received because I think we recognize how
12 significant this first one out is. You are
13 actually going to sit here with us time immemorial
14 doing Investment Plans. But the very first
15 product out the door is kind of like seen as the
16 guiding light and everything else is going to be
17 seen as the next year's update chapter or appendix
18 on investments or what have you. So we will have
19 to struggle with that as we finish it.

20 And I am very sympathetic and I know
21 Commissioner Douglas and I will talk about how can
22 we meet my fears that we don't lose the money and
23 still have another meeting of the Advisory
24 Committee. And, you know, see what it looks like
25 after she and I have done our thing on it and we

1 have vetted it in a couple of public settings that
2 we promised to do for the rest of the public.

3 So Commissioner Douglas, I may have
4 reminded her of a thing or two. Anyway, she'd
5 like a couple more words.

6 ASSOCIATE MEMBER DOUGLAS: You did
7 remind me of a thing or two. And I will be brief
8 in deference to, especially Roland and Tom who
9 apparently haven't had lunch at all.

10 PRESIDING MEMBER BOYD: Tom is looking
11 kind of weak.

12 ASSOCIATE MEMBER DOUGLAS: Don't faint
13 on us, Tom. If you need to --

14 MR. CACKETTE: No, I'm fine.

15 ASSOCIATE MEMBER DOUGLAS: I think that
16 some of the tension between this whole 2020 and
17 2050 question comes from an issue that Will
18 pointed out. He said he was somewhat hesitant to
19 point it out but I'm glad that he did.

20 Which is that the sort of model used in
21 the Investment Plan for determining allocation
22 between the bins is a bit, should we say,
23 mechanistic in the sense that, you know, we have
24 this projection. And then it matters quite a lot
25 whether the projection is to 2020 or 2050 in terms

1 of determining what goes into the bins.

2 And of course as John said, you know,
3 all models are wrong but some are useful. I think
4 that's right. I think we just need to maybe go
5 back and think well, mechanistically if we project
6 it to 2050 what does it look like? Well
7 mechanistically if we project it to 2020 what does
8 it look like?

9 Okay, well let's take a step back now.
10 Let's think about everything else that we know
11 about opportunities and need and other public
12 policy goals besides climate such as air quality
13 and stimulus and workforce and petroleum reduction
14 and so on in order to figure out where for the
15 first two years of this program, not the entire
16 program, we see the greatest opportunities to
17 focus. So I wanted to throw that out there.

18 I don't personally believe that we are
19 tied. I don't think we have to pick 2039 in order
20 to create, you know, what we think of as the right
21 balance. I think we all realize that projections
22 are projections and they help inform us. But at
23 the end of the day we are going to make decisions
24 based on a broader set of information based on
25 what we know or think we know or hope we know or

1 our best judgment.

2 So I wanted to raise that to back
3 Commissioner Boyd in his effort as well I think to
4 reduce some of the pressure around the 2050/2020
5 thing. At the end it is really more about where
6 do we think this money is best invested in order
7 to meet our policy goals? And we have climate
8 goals, we have other goals. We have been asked to
9 transform the fuel and energy sector. So I think
10 there are judgment calls in this.

11 And after receiving your feedback and
12 after the staff put forward their paper it is time
13 for us to huddle, put forward with Commissioner
14 Boyd and I and others having some input, put
15 forward our next iteration. And to hear from you
16 all whether it is in a formal meeting of the
17 Advisory Committee or whether it is through
18 posting, receiving comments and calling people and
19 having a lot of meetings or whatever the process
20 is that we are able to put together.

21 I would like to be able to have another
22 Advisory Committee meeting. I think it is
23 dangerous to commit until we really look at our
24 time line and think about whether we can really
25 pull it off or whether we need to get feedback

1 that we do want and do need in another way. So
2 that's all I wanted.

3 The other thing I will add is that we
4 have been having a number of meetings with other
5 agencies who are more focused in their day-to-day
6 business, workforce and the economy. We have met
7 with EDD, we have met with the Workforce
8 Investment Board and so on.

9 A lot of those meetings have been
10 informing or thinking but have not really been
11 written up in the Investment Plan. It has just
12 been an ongoing process. So we are going to
13 continue with some of those discussions and
14 definitely touch base with the more workforce-
15 oriented members of the Advisory Committee as
16 well. None of whom I think are left but who
17 stayed with us for quite awhile today. So that's
18 all I wanted to add.

19 PRESIDING MEMBER BOYD: Okay. I thank
20 you all for your participation and your hard work.
21 It has been a very fruitful and interesting day,
22 thank you. And be careful out there, it's cold.

23 (Whereupon, at 3:53 p.m., the Advisory
24 Committee Meeting was adjourned.)

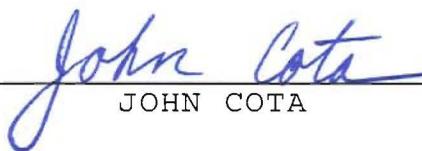
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CERTIFICATE OF REPORTER

I, JOHN COTA, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Advisory Committee Meeting; 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 meeting, nor in any way interested in outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of January, 2009.



JOHN COTA