

STAFF WORKSHOP
BEFORE THE
CALIFORNIA ENERGY COMMISSION

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

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT
GOVERNING BOARD ROOM
1990 E. GETTYSBURG AVENUE
FRESNO, CALIFORNIA

TUESDAY, FEBRUARY 10, 2009

9:00 A.M.

Reported by:
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Tim Sheehan

The Fresno Bee

ALSO PRESENT

Colby Morrow
Southern California Gas Company
San Diego Gas and Electric

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

2 9:00 a.m.

3 MR. WARD: I'm Peter Ward with the
4 California Energy Commission. Thank you for
5 coming. This is the first of four public
6 workshops that we'll be holding from the Energy
7 Commission on the AB-118 program, otherwise known
8 as the alternative and renewable fuel and vehicle
9 technology program.

10 First off I want to thank our hosts for
11 having us here at the San Joaquin Valley Air
12 Pollution Control District headquarters. They've
13 been gracious enough to give us the room for the
14 morning here.

15 And I also want to welcome the people
16 that are on the phone listening on WebEx. Thank
17 you for hanging in. We're getting started a
18 little bit later, but appreciate your being with
19 us, as well.

20 This meeting is a public workshop and we
21 are recording this and taking your good
22 suggestions for the program as we develop it,
23 going forward from this point.

24 We are out doing workshops for many
25 different reasons, one of which is to familiarize

1 everyone with the investment plan that we have
2 prepared, the draft staff investment plan for the
3 AB-118 program.

4 This has now been released. It was
5 released in December; has been out for public
6 comment. We're still seeking public comment up to
7 and through these series of four workshops. And
8 we would like to get your ideas on the investment
9 plan, as well as project ideas that you folks have
10 in particular areas. This would help us gauge the
11 solicitations that we'll be coming out with in the
12 future.

13 We are anxious to strike partnerships,
14 and with the San Joaquin Valley Air Pollution
15 Control District being one of many air pollution
16 control districts that we wish to strike
17 partnerships, along with clean cities coalitions
18 and other entities across the state, so we can all
19 leverage our efforts and leverage our innovation
20 to make this a successful program.

21 We will have some other presentations
22 today, as well, from the Clean Cities Coalition,
23 the Air Pollution Control District and Dr. Steve
24 Kaffka at the University of California at Davis.
25 He's an agronomist and he'll be joining us a

1 little bit later today.

2 I want to mention also that if you would
3 like to ask questions or make comments, these are
4 blue cards that are out on the table in the front.
5 And if you'd like to fill one of those out we can
6 handle those after the presentations.

7 The program that we're talking about
8 today is quite exceptional, I think, in its
9 breadth. And we will be basically describing all
10 the different aspects of that.

11 The purpose of this is to develop and
12 deploy innovative technologies that transform
13 California's fuel and vehicle types to attain the
14 state's climate change goals. That is, to reduce
15 GHG.

16 These programs should be providing
17 immediate GHG reduction benefits and to help
18 create the impetus for the long-term transition.
19 Each year we are authorized up to \$120 million per
20 year through the year 2015. So this is unusual.
21 We've never really had this level of funding, and
22 this level of funding for this many years. This
23 is a seven-year program.

24 And so I think this is going to enable
25 us to send a very strong market signal to develop

1 the innovative technologies and fuels that can
2 take us into the -- further into the 21st century.

3 The first year, this fiscal year that
4 we're in right now, we were allocated \$75 million.
5 But we have had some process to go through before
6 we can access that funding. And I'll describe
7 that a little bit later.

8 Next year we are at least tentatively
9 authorized for \$101 million for the next fiscal
10 year.

11 The program overview is going to contain
12 a framework for sustainability. We really don't
13 want to duplicate that which we've seen in the
14 past. We want to make sure that the programs, the
15 fuels, the technologies that we will be funding
16 are imminently more sustainable than we have had
17 in the past.

18 We need to decrease pollution on a
19 lifecycle basis, that is well-to-wheels. And that
20 is criteria emissions and greenhouse gases, as
21 well. We want to fund projects that do not
22 adversely impact natural resources in the state,
23 or federal.

24 We want to insure, and this is probably
25 more key now than it was six months ago, economic

1 development in the state, education, outreach and
2 workforce training.

3 I think we've all been through quite a
4 roller-coaster ride and we're really hoping that
5 the funding that we're providing here can move us
6 along in the fuels and vehicle technologies, but
7 also attract and retain clean technology
8 businesses, fund financial incentives, private
9 investment and encourage market creation and
10 informed consumer choices.

11 And to leverage the innovation of
12 California, which is something that we've been
13 known for for many years. And to, in a
14 sustainable way, use the renewable and waste
15 resources of our state.

16 The legislation and the statute, itself,
17 asked us to prepare an investment plan. And the
18 investment plan, there are copies on the table.
19 You folks are probably very familiar with that.
20 This was required so that we can set the
21 priorities and the opportunities for the program.

22 We describe how funding will complement
23 existing public and private investments. I think
24 we've done that in the staff draft now.

25 The initial investment plan will guide

1 the funding decisions during the first two years
2 of the program. Every year thereafter we will
3 have an investment plan for that particular year.

4 Because we're getting started a little
5 bit late in this year, we will be using this
6 investment plan for the first two fiscal years.

7 We have convened an advisory committee,
8 also called for in the statute, to provide input
9 during the development of this investment plan.
10 And we have had five meetings with our advisory
11 committee. And so this staff draft investment
12 plan reflects many of the comments, suggestions
13 and the guidance from that advisory committee.

14 Investment plan status. As I mentioned,
15 it is a staff draft document right now, and out
16 for public review. We're holding the workshops on
17 this, on the investment plan. And as we turn to
18 page two, the program, itself.

19 We had the fifth advisory committee
20 meeting on January 8th. And now we're embarking,
21 today is the first of four public workshops.
22 We'll be here today and tomorrow in Fresno. And
23 next week we'll be in Diamond Bar and in Los
24 Angeles at the Los Angeles Port in San Pedro.

25 The Transportation Committee, led by

1 Commissioners Boyd and now Chair, Chairwoman Karen
2 Douglas, will consider the staff draft, the
3 advisory committee input and public comments, many
4 of which we will receive today hopefully on the
5 investment plan. The Energy Commission will be
6 considering the plan for full five-member
7 Commission adoption scheduled for March, next
8 month.

9 There are many different types of
10 projects that are eligible for funding.
11 Alternative, renewable, low carbon fuels will be
12 stressed obviously. Our main purpose is to lower
13 greenhouse gases and help the state achieve its
14 climate change goals. That will be the main
15 focus.

16 Projects that optimize alternative and
17 renewable fuels for engine technologies,
18 alternative and renewable low carbon fuel
19 production, projects that decrease the full fuel
20 cycle basis carbon footprint, and increased
21 sustainability of the production of those fuels.

22 Alternative and renewable fuel
23 infrastructure fueling stations and equipment, and
24 improved light-, medium- and heavy-duty vehicle
25 technologies for better fuel efficiency.

1 Additionally we'll be able to buy down
2 incremental or differential costs on vehicles,
3 advanced technology warranty or replacement
4 insurance. Development of market niches, and
5 supply chain development.

6 Retrofits for medium- and heavy-duty
7 fleets. Alternative and renewable fuel
8 infrastructure development. Workforce training
9 will be stressed so that many of the folks that
10 have been unfortunate enough to lose their jobs
11 can be retrained for more viable jobs going
12 forward.

13 Education and program promotion and
14 development Technology Centers of Excellence. And
15 the analysis to assist in preparing the investment
16 plan and informing the program as we go forward.

17 As you can see, we've been given many
18 different funding mechanisms that we can utilize,
19 grants, contracts, loan guarantees, revolving
20 loans, consumer rebates, direct fuel subsidies,
21 other mechanisms to be defined which is always
22 good to see in a statute. That can give us the
23 greatest latitude to devise the particular
24 mechanisms that could suit the needs of those
25 folks that would need cofunding or support.

1 Cofunding of strategic partners will
2 leverage our funds. And when we started this last
3 summer we were looking at the usual cast of
4 characters for leveraging funds. And now we're
5 looking in earnest because I think the federal
6 government is going to be releasing a substantial
7 amount of funding that we hope to leverage with
8 our funds, as well.

9 Funding preferences. We will be adding
10 either favored points in the evaluation of
11 proposals, or additional incentive amounts and
12 awards according to these preferences: reducing
13 the lifecycle environmental impacts; decreased
14 lifecycle greenhouse gas emissions by at least 10
15 percent, and many times can be more than that.

16 Do not adversely impact the
17 sustainability of the state's natural resources.
18 Use alternative fuel blends up to and over 20
19 percent. Use existing and proposed fueling
20 infrastructure and providing nonstate matching
21 funds. Provide economic benefits to California.
22 And to drive new technology advancement.

23 I think, in California, just as an
24 aside, I think we are in a particularly
25 advantageous position because we have a history of

1 the innovation in early aviation, aerospace, and
2 information technology that we have risen to the
3 top among other states. I think this is just
4 maybe another frontier for California, and one
5 that I think we can help with.

6 In summary, the draft investment plan.
7 We did this, as I mentioned, to establish the
8 priorities and opportunities. And those can be
9 characterized in two steps.

10 The first is how do we guide our funding
11 according to the relative greenhouse gas
12 reductions that can accrue from specific projects.
13 In doing so, and as detailed in the investment
14 plan, particularly in appendices A and B, are the
15 feasible scenario that allows California to meet
16 its 2020, that's the AB-32 goals of reducing our
17 GHG emissions to 1990 levels. And to 2050, which
18 is an executive order by Governor Schwarzenegger
19 to reduce our GHG 80 percent below 1990 levels by
20 2050.

21 And in devising this scenario and this
22 framework we worked backwards from the state
23 alternative fuels plan 2050 vision, which outlined
24 a plausible scenario to get to 2050, 80 percent
25 reduction of 1990 GHG levels. And worked

1 backwards using and populating the vision with our
2 CALCARS model, which is a consumer preference
3 model for light-duty vehicles. And evaluate the
4 vehicle fuel efficiencies expected in 2050.

5 We will be going forward in the future
6 in further analysis of the plausible scenarios
7 that can bring us to 2050. The 2050 vision was
8 pretty much established based on the goals and
9 what we would need by that time. And we will be
10 working hard to analyze the reliability of those
11 judgments to see if the technologies, the fuels
12 and the costs are reasonable to get to those. And
13 if they're not, then we will have to recalibrate.

14 I don't think there's anything more
15 dire, as we look out. I've always been concerned
16 about reducing our petroleum consumption. But
17 reducing climate change, to me, is the most
18 important issue that we felt, and the issue of our
19 lifetime. We've fought wars, but nothing like
20 this. This is an all-stakes game. We could lose
21 the planet here. I think there's nothing more to
22 lose once that happens. I'm concerned that we get
23 to a tipping point that we can't recover from.

24 So, I'm earnest about this. I really
25 think we are really on the horns of a dilemma that

1 if we don't act quickly and decisively, I think we
2 could lose the planet.

3 Going out to 2050 it seems like a long
4 way off, but I don't really hear many people
5 talking about 200 years from now, because I think
6 everybody's imminently concerned about getting to
7 2050. And I think this is very crucial for
8 humankind and the life of the earth, itself.

9 We have categorized in the reduction
10 scenarios and the framework the four categories
11 are having to do with the fuels and vehicles that
12 they would use. And we've given them labels,
13 super ultra low carbon, ultra low carbon, low
14 carbon, and additional fuel economy improvements.

15 These are categories that we have named.
16 They're fairly illustrative. Many of the fuels
17 that we'll be going over can actually jump
18 categories as they improve. They can become more
19 renewable or vehicle technologies can improve, as
20 well. So they're fixed categories based on their
21 carbon footprint or the CO2 out the tailpipe. But
22 as I said, we're hoping to foster improvement
23 across the board of all of these different
24 categories.

25 You can see here a visual image of step

1 one results of this framework, and shows that in
2 the 2020 timeframe -- is there something, a
3 pointer, do you know?

4 Okay, well, -- I would say the yellow is
5 where we will need to go to get to the 2050 goals.
6 Obviously you can see this is a characterization
7 of the emission reduction potential for the
8 different categories.

9 The fuel economy is the second one
10 there. And then advanced biofuels. We need to go
11 beyond the first generation of biofuels, though,
12 ethanol from corn and other grains.

13 And then natural gas, propane and
14 renewable diesel are at the bottom there. They
15 certainly have potential. I think we'll still be
16 using those, obviously, in 2050. And I think that
17 this is an example of the fuel and vehicle
18 category that can jump categories, as natural gas
19 is supplied more by biomethane, renewable propane,
20 and of course, more feedstocks that can be
21 utilized to produce renewable diesel, as well.

22 The second step was the gap analysis
23 that we performed. And this really consisted of
24 looking out there to see what areas of endeavor
25 have been funded over time through existing public

1 and private funding for alternative and renewable
2 fuels and advanced vehicle technologies.

3 We found out where the funding is, and
4 more importantly, where the funding isn't, where
5 the gap exists. And determined where additional
6 funding is not needed.

7 So we will determine where those gaps
8 exist, but in determining where the funding is not
9 needed, we will be talking to stakeholders and
10 partners and those involved in the area to
11 determine whether or not they are filling some of
12 those gaps.

13 The gaps that remain are ones that are
14 obvious for us to act in, and to allocate funding
15 for.

16 Briefly we'll go through the super ultra
17 and all the other categories. This, as you may
18 expect, would be a lot of electric drive. We
19 would be hopefully funding some retail hydrogen
20 fueling stations, mixed use of hydrogen with CNG.

21 Or for low cost, renewable hydrogen
22 production in California there's legislation that
23 says if public funding goes to a hydrogen station,
24 the fuel there must be comprised of 33 percent
25 renewable hydrogen. So we think it's an important

1 entre for us to foster the development of
2 renewable hydrogen in California, as that is a
3 requirement that will be with us for quite awhile.

4 Currently most of the hydrogen is
5 produced from natural gas, and so we need to
6 improve the feedstock potential. And therefore,
7 lowering the GHG of even the hydrogen, the tail --
8 and the emissions out the tailpipe of this zero
9 emission vehicle.

10 We'll be coordinating our support with
11 ARB's air quality improvement program. I should
12 mention that ARB has part of AB-118; they're
13 funded to about \$80 million a year. One with the
14 air quality improvement program and one for their
15 vehicle enhancement, which is basically taking
16 high emitters off the road and providing consumers
17 that do that some funding to purchase another
18 vehicle.

19 We will support the early conversions
20 for plug-in hybrid electric vehicles and battery
21 electric vehicles and the charging infrastructure
22 necessary for those.

23 Quite frankly, I've heard quite a bit
24 about the battery electric vehicles and plug-in
25 hybrid electric vehicles. And as a matter of fact

1 there's a gentleman that's joining us in the back
2 of the room that knows quite a bit about these
3 battery electric vehicles, as well. And perhaps
4 you can buttonhole him a little later. Good
5 seeing you, Mark.

6 Funding recommendations for electric
7 drive would offer rebates to offset the additional
8 cost and purchase of low emission vehicles and
9 components. Cofund niche market demonstrations
10 and initial costs of low GHG, medium and heavy-
11 duty vehicles.

12 Support the precommercial demonstration
13 and appointment of electric drive. Cofund network
14 of public access charging stations to support the
15 rollout of these vehicles. And coordinate with
16 ARB to cofund proof of concept and accelerated
17 market deployments.

18 For hydrogen, as I briefly mentioned, we
19 would cofund fueling network to support the early
20 adopter vehicles. There are hundreds of hydrogen
21 fuel cell vehicles in the state. And more on the
22 way. And we want to be able to provide an
23 adequate infrastructure during this precommercial
24 demonstration period.

25 We'd accelerate the increased hydrogen

1 fuel through multiple uses to maximize low GHG
2 emissions. That meaning we would be fostering
3 support for hydrogen used in forklifts and
4 hydrogen blended with CNG, transit properties.
5 And to build the base, if you will, for a hydrogen
6 production market in California.

7 Ultra low carbon needs. This is kind of
8 the middle range, and typically is populated by
9 biofuels. Encourage transition from existing
10 ethanol production to lower carbon feedstock
11 production facilities.

12 In other words, midwest corn ethanol
13 has a relatively higher GHG than ethanol that we
14 can produce in this state, bringing the grain in
15 from the midwest. But there are other things that
16 can improve it even beyond that. Using biomass
17 residues and feedstocks, and utilizing other
18 purpose-grown crops such as sugarcane, have a
19 lower profile, as well.

20 Develop new ethanol renewable diesel and
21 biomethane production for use as transportation
22 fuels. There's going to be a big push for the
23 development of biofuel production as a
24 transportation fuel. I know Waste Management and
25 others have expressed a great deal of interest in

1 this.

2 Expanding installation of E-85 based on
3 geographic distribution of the 400,000 FFEs in the
4 state. And we have kind of broken the DMV code to
5 find out where those cars are located, so we can
6 be a help to those marketers of E-85 to find out
7 where their potential clients are located.

8 Develop fuel storage and blending
9 terminals for renewable diesel distribution in
10 northern and southern California. Currently we
11 see, even though biofuel production, particularly
12 biodiesel renewable diesel production is up, there
13 is a potential bottleneck in the distribution of
14 that. Many of those facilities are controlled by
15 the major oil companies. And I think a burgeoning
16 industry of alternative fuels may need some relief
17 in the de-bottlenecking of the distribution that
18 we could maybe help with storage, rack blending
19 and in the distribution infrastructure.

20 We would cofund the development of
21 California projects that develop and reduce
22 reliance on imported fuels, stimulate California
23 economic benefits. This particular element has
24 risen to the top, quite frankly, in the last
25 several months. It's of utmost importance and I

1 think this funding, I'm very hopeful, won't be
2 swept away in our budget problems we have here in
3 the state, because I really do think the seed
4 money that we can provide for economic development
5 in the state is much more valuable now than it was
6 even six months ago.

7 We will explore loan financing for some
8 options. That means we will be hoping to work
9 with the Office of the State Treasurer in the area
10 of tax-exempt bond financing to perhaps be able to
11 offer low-interest or loan guarantees for
12 production of fuels and manufacturing of vehicles
13 in the state as an economic tool.

14 Unfortunately, given our budget
15 situation now, a lack of a budget that addresses
16 the large deficits, the State Treasurer's Office
17 is not floating bonds. Bonds aren't very
18 attractive at this point. So there will be a
19 considerable lag time once we resolve our budget
20 problems until those bonds become available for us
21 to use again.

22 But we may find other ways to provide
23 loan guarantees by using some of our money for a
24 loan loss fund that can actually continue on with
25 loan guarantees without the State Treasurer's

1 Office.

2 We would like to cofund the development
3 of fueling stations to support flexible fuel
4 vehicles. Bill, did you hear that? Okay. Cofund
5 projects to maximize early GHG emission reductions
6 in medium- and heavy-duty markets.

7 And the low carbon fuels. These are the
8 ones that -- actually these are the alternative
9 fuels that we have come to know and actually are
10 the leading alternative fuels at this point.
11 Natural gas, primarily, and, of course, to a
12 smaller extent propane.

13 We'd like to provide rebates for light-,
14 medium- and heavy-duty vehicles, coordinated with
15 the Air Resources Board, local air districts and
16 the ports. And support the development of
17 advanced-, medium- and heavy duty natural gas and
18 propane engines, fueling and fuel storage
19 technologies.

20 And support natural gas and propane
21 fueling stations that are close to vehicle fleets
22 and populations.

23 Some of the recommendations we have are
24 to offer rebates in coordination with ARB --
25 vehicle differential cost, cofund transitional

1 technologies. Cofund fueling station projects to
2 support fleets and other buyers. Explore loans
3 and loan guarantee options as I mentioned.

4 This last category is the improved
5 vehicle efficiency. This is very important, not
6 only to us, but to the Air Resources Board, as
7 they are expecting large gains in vehicle fuel
8 efficiency to capture the needed benefits that
9 would be required under AB-32, the Global Climate
10 Solutions Act of 2006.

11 They are in the scoping mode now for
12 that program. But if you read that it's heavily
13 dependent upon improved vehicle efficiency.

14 Now, you may be aware that the USEPA had
15 not granted California a waiver to implement AB-
16 1493 which will reduce our tailpipe emissions, CO2
17 emissions. But we think at this point with the
18 new Administration the USEPA will be granting that
19 waiver quite soon. And I think the Air Resources
20 Board is taking steps right now to assure that the
21 vehicles produced, even now, will meet those
22 standards. And they are informing the auto
23 companies appropriately.

24 The auto companies have been given
25 bailout funds, as well, so we do hope and expect

1 that they will be able to comply with the
2 California standards. The California standards
3 don't stand by themselves. There are another over
4 20 states that wish to take up our standards, as
5 well.

6 We want to work with the ARB's air
7 quality improvement program to develop and
8 demonstrate medium- and heavy-duty hybrid
9 technology, particularly hydraulic hybrids and
10 diesel and alternative and renewable fuel engines.

11 We'd like to cofund vehicle and
12 component development for various engine fuels and
13 market niche applications. And this is an
14 opportunity, and we've been approached by many
15 engine developers, to try and have variable fuels,
16 not in one engine, but engines that can be adapted
17 to different fuels, more than just diesel or
18 gasoline.

19 Now we're getting to the funding
20 recommendations for the nonGHG categories. As I
21 mentioned, these will be very much stressed as we
22 see that we have a large need for economic
23 development and workforce training.

24 We want to support the development of
25 sustainability, best management practices,

1 standards and verifications programs in the state
2 as we embark on these new fuels.

3 We want to cofund the development of
4 government standards, guidelines and
5 certifications. I'm particularly interested in
6 this one because if we're to provide incentives
7 for fuels and vehicles, I don't want those
8 incentivized fuels and vehicles to bump up against
9 impediments that are kind of placed in the roadway
10 for roadway and market development for these.

11 I think we would be wasting some of the
12 incentive money if we did not address early on
13 some of those potential impediments and make it a
14 smoother course for these new vehicles and fuels
15 to travel. I think it would smooth the way and
16 ready the market for these fuels. I think it
17 would be wise to do so, and to invest that money
18 upfront before the incentives are in place, is to
19 me the right timing.

20 So we're going to be reaching out to
21 state agencies, to a certain degree federal
22 agencies, and local agencies, as well, to see if
23 we can help with the setting of standards and
24 certifications, and help to make the certification
25 of vehicles and fuels and fueling facilities

1 easier to get to.

2 Like to cofund programs to educate
3 Californians about the available fuel and vehicle
4 technology options that will be out there. I
5 think there are some out there. I'm not sure that
6 the general public is fully aware of those. And
7 so would like to embark on a public education
8 program that better informs people of the
9 available options that we have now, and those that
10 we'll be developing in the future, as well.

11 We'll be funding analysis and program
12 activities out of some of this funding.
13 Unfortunate, as we stand here today, we have not
14 been able to access any of the funding, so we're
15 doing all that we have done, the investment plan
16 and everything, up to this point based on just the
17 standard budget.

18 We are not accessing the funding
19 available, but once we are able to do that, we
20 really want to inform this program in the best
21 possible manner so that each year when we prepare
22 an investment plan it is the most informed and
23 basically isolates the risks and improves the
24 probabilities for success as we go forward.

25 There's an awful lot of developing

1 information in this field right now, particularly
2 in the sustainability of the different options.
3 And so we want to stay abreast of that, not just
4 abreast of that but I think we want to help lead
5 the dialogue in some of these things, as
6 California is many times wont to be. And I think
7 that many other states may or may not like that,
8 but I think we're still anxious to maintain that
9 position.

10 Stay current and influence the future,
11 as I say, of funding decisions to reflect market
12 changes, research insights, and financing trends.

13 Provide incentives to accelerate instate
14 use of low GHG emissions and fuels and vehicles.
15 Explore tax exemption loans, loan guarantees for
16 some options.

17 Here's an eye chart for everyone. I'm
18 not sure you can all see it. But here are the
19 draft allocations according to the categories I've
20 just mentioned for the 75 and 101 million dollar
21 respectively for the next two fiscal years.

22 You can see low carbon is 26, I think it
23 is. There's the eye chart problem. And ultra low
24 carbon is 10. Super ultra low at 18. Efficiency
25 improvements at 7. NonGHG category is 9.

1 Manufacturing and production incentives \$5
2 million.

3 It pretty much goes on a relative ratio
4 basis for the next year, as well, as we increase
5 for the next two years.

6 Some of the advisory committee comments
7 that we received on our draft investment plan that
8 was released on December 23rd are emphasis, should
9 we give it on the 2050 goals rather than the 2020
10 goals.

11 We did a backcasting to cover all years.
12 We think 2020 is important for the statute. We
13 think 2050 is quite important to set the
14 trajectory that we will need to be on. As I
15 mentioned earlier, we'd like to better inform that
16 trajectory and that plausible scenario in the
17 future to make sure that we have assessed the
18 technologies, the fuels, the costs of development,
19 the risks and the probabilities of those
20 technologies and fuels obtaining the marketshare
21 that would be needed to meet our 2050 goals.

22 More dollars should be directed toward
23 the super ultra low carbon category. Mixed
24 feedback on the benefits of funding retrofit and
25 conversion projects.

1 I'll just go through these. If we have
2 questions about these later I'll be happy to
3 answer those. Stronger support for EV fueling
4 infrastructure and distribution level
5 infrastructure.

6 More focus should be on economic
7 development, potential for the program. And yes,
8 we get -- yes? Electric vehicle fueling
9 infrastructure. Fueling infrastructure, I guess
10 maybe. We can have an argument whether
11 electricity is a fuel or not. That's a little
12 esoteric discussion we could have maybe later.

13 Additional comments made were need for
14 better understanding of how sustainability
15 criteria will be applied. More support is needed
16 for the high risk technologies. This is where we
17 hope to be able to see the development and
18 leverage the innovation of California. Some of
19 those that are not necessarily directly apparent
20 to us now.

21 We need to develop more compelling
22 argument for the program, and that will be in the
23 next draft.

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

1 growth. That is a comment that was made that is
2 somewhat difficult to do, given the seven-year
3 life of the program. To actually fund something,
4 get it up and operating successfully, and returns
5 back from that investment back into the program on
6 a real-time basis is difficult to be reallocated.
7 So it's a good idea, but it's practically maybe
8 has a challenge to it.

9 Need a stronger link between a K-
10 through-12 education at workforce development.

11 Here is the program implementation
12 schedule that we are on right now, as we speak.
13 We're doing the public workshops right now. Next
14 month we will be presenting the revised investment
15 plan; the committee draft will be released and
16 hopefully adopted in March, in the spring.

17 Being a little bit wider open, not a
18 month but a season. It will be the season of
19 solicitation hopefully. We will be -- we've
20 already begun preparing the solicitations and we
21 hope to release those in the spring.

22 Our funding is not effective until the
23 Secretary of State accepts the regulations that we
24 developed on a parallel path. We hope, and our
25 target date is late May for that.

1 When I say that, that's when funding can
2 slow, but we hope to have solicitations out,
3 proposals in, perhaps evaluated and approved at
4 the Energy Commission business meetings. And so
5 those are in queue and ready to be funded the day
6 after the Secretary of State approves our
7 regulations. That's our goal.

8 So we're not going to wait until they do
9 that until starting the program. We want to kind
10 of front-load this process, as late as it is, so
11 that we are still active during this time as we
12 wait for the regulations to be finally adopted.

13 Here's my information. And Tim Olson
14 was going to be here with us today, but he would
15 have had to drive back to Sacramento and then over
16 to San Jose tonight. I figured he needn't do
17 that. So you've had to listen to me for this
18 entire presentation.

19 Thank you for your attention. And I can
20 take some clarifying questions now. I think we're
21 actually okay on time, I think, so. We have other
22 presenters coming at about 10:00, so if there's
23 any questions I'd be happy to take those now.

24 Yes, Bill?

25 MR. BRUNNELL: You mentioned cofunding.

1 MR. WARD: Yeah.

2 MR. BRUNNELL: When do --

3 MR. WARD: Excuse me, would you please
4 identify yourself for the record.

5 MR. BRUNNELL: I'm sorry; I'm Bill
6 Brunnell and I have a gasoline station in --

7 MR. WARD: Cofunding is basically we're
8 asking, we want to cost-share projects. We don't
9 want to own the whole project. We don't want to
10 fund the whole project.

11 It's in my experience, and especially in
12 the infrastructure, which you're directly
13 interested I know, is that it's better if people
14 have an interest in the project, in the game, if
15 you will.

16 And so we would fund a portion of the
17 project. Typically we identify pieces of
18 equipment, not that we would own them, but just
19 that the value would be accommodated into probably
20 a grant agreement.

21 I should also mention that we are
22 interested in using solicitations such as program
23 opportunity notices, and not requests for
24 proposals. A request for proposal is a very
25 laborious process. I've had more experience and

1 better experience with program opportunity notice,
2 which is a more streamlined process, ending up
3 with grants or block grants for fuel stations.

4 The same, in kind of a different way,
5 grants are basically rebates for vehicles. So if
6 someone's going to buy a vehicle we may help with
7 the differential cost of that vehicle, after the
8 federal costs are taken out, any tax credits. We
9 would be targeting the remaining differential on
10 that vehicle with state funding. So, basically
11 the people have already cost-shared that vehicle.

12 In a similar way, infrastructure would
13 be on a cost-shared basis. Don't have
14 determination of percentages yet at this point, or
15 size of projects yet. That's being coming up in
16 our solicitation.

17 MR. BRUNNELL: And then the other
18 question was about the possible loan guarantee --
19 possible (inaudible) when will you know what might
20 be available?

21 MR. WARD: Well, I was just in a meeting
22 a couple of weeks ago with Michael Papanian. You
23 may be familiar with him, he's with the Sierra
24 Club years ago. Now he is the director of the
25 California Pollution Control Finance Authority in

1 the State Treasurer's Office.

2 And he mentioned at that time that
3 because of our bad budget situation that we have
4 right now -- incidentally, we were just lowered to
5 the, I think the lowest rating of any other state
6 in the union right now as far as bond rating,
7 credit rating.

8 He kind of stated what is apparently
9 obvious is they're not going forward with selling
10 bonds at this point. Given our dire
11 circumstances, nobody would really be that
12 interested in these bonds.

13 The basis of the low interest or the
14 guarantee, itself, would be proceeds from bond
15 sales. And he was saying that if we had a state
16 budget tomorrow bonds probably would not be sold
17 until June or July. It would take that much of a
18 lag time to recover.

19 So, I'm hoping that we can come up with
20 another mechanism for some of our funding to put
21 into a loan loss pool so that we can actually work
22 with the existing commercial banks that are out
23 there, and basically support any of their
24 potential losses in that loan loss pool.

25 Yes, ma'am.

1 MS. SIMUNOVIC: My first question, on
2 the funding preference is are there going to be
3 any -- well, I don't see here on your site any
4 preferences to direct investment in low-income
5 areas that are disproportionately impacted
6 sometimes by pollution and by the impacts of
7 global warming.

8 And so I'm wondering if that's something
9 that was discussed at all at the advisory level.
10 And if that's something that you've considered.
11 Like, for example, at Tulare there's a lot of
12 natural gas projects happening now, using the
13 methane from the dairies. And that's a low-income
14 area with a lot of negative impacts from the air
15 pollution and from the dairies that are in that
16 area.

17 And I'm wondering if there's been any
18 discussion about how to drive investment in areas
19 that are usually in need of such investment.
20 That's the first question.

21 Then the second question would be while
22 there's a push for -- see if there's a push in
23 alternative fuels, and you discussed increasing
24 localized production of ethanol for different
25 types of crops, not just corn, I'm wondering at

1 the same time how are you going to monitor
2 protecting, insuring that there's not localized
3 increased pollution with the siting of, you know,
4 alternative -- of like ethanol production
5 facilities, especially here in the San Joaquin
6 Valley.

7 And that's a huge concern for us
8 because, as you know, not only are we going to be
9 one of the hot spots for global warming, we feel
10 the impacts more, but additionally we have the
11 worst air pollution.

12 And so for us it's really important in
13 the AB-32 debate that we talk about co-benefits
14 and, you know, not only decreasing our greenhouse
15 gas emissions, but also decreasing our air
16 pollution, localized air pollution.

17 So, I'm wondering what considerations
18 you guys have given to that, and what plans there
19 are moving forward to make sure that we don't just
20 invest in communities that need it less, and that
21 we can drive these dollars to those communities
22 that need it most. And also that we don't pollute
23 our area, which is already too polluted.

24 MR. WARD: Allow me to state, just to
25 start, is that we're very aware of the San Joaquin

1 Valley as being a very difficult area zone to work
2 in at this point.

3 I understand the terrific asthma, the
4 transient emissions that come to the valley. And
5 it is a main concern. As a matter of fact I
6 participated in a workshop here in October with
7 CERT, and at the community college, and presented
8 on the 118 program and actually learned a lot from
9 that workshop, myself.

10 I think it's a concern that we have. We
11 want to bring economic development, workforce
12 training to this area. But, as I mentioned right
13 upfront, the sustainability aspect of what we do
14 is ever present in our minds.

15 We don't want to exacerbate existing
16 local problems. We do want to help with economic
17 development and workforce training. And to
18 utilize the technologies and fuels that would have
19 a much lesser impact. Not just to do things the
20 same way we've always done them.

21 I'm hoping in our program that each year
22 we will be advancing the quality of the projects
23 that we have going forward, and the emissions from
24 them, and the emissions from the vehicles, as
25 well.

1 We're just starting in the first year,
2 but I'm just going to state to you our commitment
3 is to make sure that we do, starting off, do no
4 harm.

5 We were asked to come up with -- or the
6 Air Resources Board was asked to give us anti-
7 back-sliding regulations. And they have done
8 that. They've approved those, and those will
9 govern our program.

10 So we will do not back-sliding any of
11 the environmental aspects. That's water, soil,
12 air or GHG in any of the projects that we go
13 forward with.

14 But beyond just not backsliding, I
15 really think the opportunity for us is to improve
16 things. And when I say improve, that's just not
17 year to year, but considerably improve them in
18 each year.

19 We think that in this area I know we've
20 met with Cruz Bustamante and others in the area
21 that are very interested in the low-economic areas
22 to see that we can develop them in a prudent way
23 that also reduces the ambient air quality problems
24 in those areas, as well. We understand that
25 that's a two-edged sword and we're going to be

1 very conscious of that.

2 CEQA holds a certain amount of remedy in
3 that, but we're not comfortable with just CEQA.
4 We do want to make sure that all the projects that
5 we go forward with, they must comply with CEQA.
6 But we think that's a de minimis level and we need
7 to exceed those protections in everything that we
8 do, particularly in the challenged areas both
9 economically and air quality-wise that the Central
10 Valley is at this point.

11 So, I can't point to anything right yet,
12 but I can just tell you that's the way we're
13 looking at it. We don't want to avoid areas like
14 this because we think we can actually make a
15 difference here.

16 We don't want to avoid bringing economic
17 development to this area because we do think we
18 can make a difference here, as well. So I think
19 we can marry those two together, hopefully improve
20 the ambient air quality.

21 And, of course, the dairies, if we can
22 help by helping them capture the methane emission,
23 which is the largest greenhouse gas emitter in the
24 world right now, if we can capture more of those
25 not only from dairies and feedlots, but from

1 landfills, as well, I think we're going to go a
2 long way in reducing our global climate change
3 emissions, as well.

4 We want to make sure that not only the
5 GHG is reduced, but criteria emissions are
6 reduced, so we're using the technologies that are
7 the cleanest and reduce the ambient emissions that
8 we're all breathing anywhere we go in the state.

9 Further questions?

10 Yes, sir. Go to the microphone.

11 MR. HALL: Hi, Peter. Bob Hall, A-1
12 Alternative Fuels here in Fresno. Just a point of
13 clarification and ask a stupid question.

14 This program --

15 MR. WARD: There are no stupid
16 questions.

17 MR. HALL: Okay, I know that. This
18 program hasn't funded or hasn't entertained any
19 grants or funding yet, correct?

20 MR. WARD: That's right.

21 MR. HALL: And so the soonest that could
22 probably happen would be summer, early fall?

23 MR. WARD: I'm hoping May.

24 MR. HALL: You think May, you're --

25 MR. WARD: We've very hopeful.

1 MR. HALL: -- optimistic?

2 MR. WARD: Yeah. Well, we -- let me
3 just give you an aside. We didn't talk about
4 regulations. We developed those, it's a long
5 process to do that through the state. We were
6 asked to do that for the statute.

7 We've done that and been out to 45-day
8 comment period. And we've received very few
9 comments on the regulations. So we have a very
10 good feeling that those regulations will stay
11 whole and be brought into the Secretary of State
12 and enacted in late May.

13 As I mentioned, we're going about the
14 process now of developing solicitations which we
15 hope to release very soon after the adoption of
16 the investment plan, itself.

17 And get those proposals in; evaluate.
18 Put them on a business meeting to approve them,
19 the recommended projects. And so they will all be
20 kind of in queue at a time when the regulations
21 are approved by the Secretary of State.

22 We're hoping the day after that maybe we
23 can cut checks.

24 MR. HALL: So, again, you're willing to
25 even entertain any projects at this time, or --

1 MR. WARD: We're not open to
2 solicitation yet, but we're hoping to in the
3 spring.

4 We do want to hear your ideas, though.

5 MR. HALL: The ideas are okay, but you
6 don't want people making funding requests at this
7 time?

8 MR. WARD: No, we're not asking for
9 proposals. I want to be real clear about that.
10 We don't get ahead of our advisory committee, and
11 certainly not ahead of our Commissioners at the
12 Energy Commission who will be making the decisions
13 on all this.

14 MR. HALL: So you don't want like a
15 whole bank of unmet funding needs sitting in
16 your --

17 MR. WARD: Well, we'd like to hear where
18 the needs are in general. But we're not asking
19 for actual proposals that would have the detail
20 and the requests for funding.

21 So, we do want -- I think we need to
22 hear from you and from others about where the
23 needs are. Where, you know, in a prioritized
24 list, if you have that. Because we want to make
25 sure that our solicitations meet the mark.

1 So this is very important for us. This
2 is part of the process that we're in. Not only to
3 help explain the investment plan, but also I
4 encourage you to provide us information about
5 projects that are needed in your area so that we
6 can take that in when we're preparing
7 solicitations. So it's very important to us.

8 Yes, Walt.

9 DR. LOSCUTOFF: Walt Loscutoff,
10 Engineering, Fresno State. Quick question. You
11 mentioned that your advisory board recommended
12 focus on K-12 education. And I think that's kind
13 of long distance.

14 In fact, I'd like to suggest that you
15 look at both community college and university
16 education, because that would be more direct, both
17 in terms of say bringing in technicians or people
18 that are expert in this area.

19 I assume that has not been excluded.

20 MR. WARD: That's right, it has not been
21 excluded. It was -- the K-through-12 is often not
22 emphasized as much, so I think that's why we've
23 emphasized it here.

24 But we're certainly looking beyond 12th,
25 for sure.

1 DR. LOSCUTOFF: So it's not exclusion by
2 omission?

3 MR. WARD: Absolutely not.
4 You must be Carla.

5 MS. NEAL: Hi, Peter. Yes, I'm Carla
6 Neal with the Green Footprint. My question is
7 we've developed biodiesel from waste grease as a
8 pilot project. And I'm looking at developing a
9 green fueling station with alternative fuels and
10 technologies that are coming down the pike.

11 And my question is biodiesel considered
12 biofuel, as listed here? I'm not specifically
13 seeing biodiesel and --

14 MR. WARD: Yes, it is.

15 MS. NEAL: Okay, --

16 MR. WARD: Let me just mention that
17 we've used renewable diesel in a generic sense so
18 that it covers biodiesel and what will be
19 renewable diesel, biodiesel being the fatty acid
20 methyl ester. And the renewable diesel, which is
21 nonesterified renewable diesel.

22 We use renewable diesel, with a small
23 "r", as all encompassing umbrella to cover both of
24 those. They're in the biofuels area.

25 And there are particular issues right

1 now for underground storage of those. And these
2 are part of the focus that we have for the
3 standards and certification help that we hope to
4 provide, so that these things are not bottlenecked
5 and can actually make it in the market and be
6 distributed.

7 MS. NEAL: My other question is on the
8 advanced feedstocks. What is your vision or view
9 for the Valley in terms of sustainability in the
10 kind of feedstocks that we can work towards
11 investing in?

12 MR. WARD: Well, I'm hearing almost
13 every day of additional feedstocks for biodiesel
14 and different oils, like I heard most recently
15 about algae and the potential for that.

16 I find it very interesting because it
17 can be produced from a lot of different sources.
18 And I think it's still in the development stage.

19 I was particularly interested to hear
20 that it can be produced from the emissions from
21 power plants, for example. Taking some of the CO2
22 and using it to, you know, to produce algae for
23 biodiesel.

24 But there are an awful lot of different
25 feedstocks. And I guess the point we're making is

1 that in some instances some of the purpose-grown
2 crops have requirements for water and tillage and
3 fertilizer and things like that.

4 Actually I want to, also in the next
5 hour here we're going to have a presentation by
6 Dr. Steve Kaffka, University of California at
7 Davis, who's an agronomist. And he can speak to
8 some of the feedstock issues, some of the
9 sustainability issues, and how we can actually do
10 things in agriculture that can actually foster the
11 development of new feedstocks for these -- for all
12 the different fuels, biodiesel, renewable diesel
13 and ethanol, as well.

14 MS. NEAL: Thank you.

15 MR. WARD: Any other questions?

16 Well, it's opportune that Samir Sheikh
17 has just joined us. He's with the Air Pollution
18 Control District here in the San Joaquin Valley.
19 And he's agreed to make a short presentation on
20 the potential for partnerships that we at the
21 Energy Commission can have with the District.
22 We're very excited about that potential.

23 And I'd like to hear more about what
24 that potential -- what those potentials are for
25 projects that we can help with.

1 Samir, thanks for coming.

2 MR. SHEIKH: Good morning. Thank you,
3 Peter, the rest of the CEC Staff. We'd like to
4 start off by just really expressing our
5 appreciation for you coming here in person and
6 having this workshop here in the San Joaquin
7 Valley.

8 I think, looking forward to the input
9 that we get here from our public stakeholders here
10 in the region and implementing this really
11 significant program that the CEC has to undertake
12 here with AB-118.

13 Let's see here, apologize for my lack of
14 preparedness here. I just got out of interviewing
15 some staff actually, and just happened to walk in
16 right at the beginning of this session here. So I
17 really, again, appreciate the time here by the
18 CEC.

19 We did take a step back here to think
20 about, we've been looking at AB-118 for awhile
21 actually here at the Air District to see where we
22 think there's a lot of opportunity to work with
23 the CEC.

24 I just wanted to provide a little bit of
25 background. This is really more for the benefit

1 of anybody who's not from the region, but just for
2 the purpose of what we talk about when I refer to
3 the Air District here.

4 We encompass eight counties of the San
5 Joaquin Valley, ranging from the north, San
6 Joaquin County, down to Kern County in the south.
7 We are one of the larger air districts, not only
8 in terms of area, but also in population.

9 And one of -- the next slide here -- the
10 major issue for us, if you're aware of the air
11 quality situation here in California, is that we
12 are one of the two regions with the worst air
13 quality here in California. And there's a couple
14 of major reasons for this.

15 We have a bowl-shaped geography, the
16 mountains surrounding us on all sides. Stagnant
17 weather, foggy winters, hot summers. And, of
18 course, emission sources, which we're hoping to
19 tackle with programs like the AB-118 program.
20 That all really make a recipe for terrible air
21 quality situation here in the valley.

22 Even though we've made great strides
23 over the years in regulating industry, providing
24 incentives for making reductions happen, we still
25 have tremendous challenges ahead. Especially as

1 EPA comes up with new standards for ozone and
2 particulates, for example. We just have
3 tremendous challenges in actually achieving those
4 standards.

5 As a result of these different factors
6 we have a valley population that is severely
7 impacted by air pollution, not only on the
8 criteria side, as we call it, which would be ozone
9 and particulates and all the health impacts
10 associated with those types of pollution; but also
11 toxic diesel particulates, which, I think, is
12 going to be a central theme when we talk about
13 funding sources like the AB-118 funding source.
14 You really can tackle both of these impacts, as
15 well as the climate change impact, which is
16 something I'll talk a little bit about as far as
17 what we're doing there, as well.

18 Just to give you a little bit of
19 background as far as the Air District and emission
20 reduction incentives in our program that we've
21 offered here in the past. And, again, this ties
22 into directly the AB-118 as a potential funding
23 source.

24 We've had a lot of experience offering
25 incentives and grants here at the Air District.

1 We have over 15 years of experience with very
2 successful voluntary incentive programs.

3 Over the years we have awarded over \$200
4 million, achieving a whopping, a huge amount of
5 emissions reductions, 63,000 tons of reductions
6 over these different projects that we've helped to
7 incentivize.

8 And we have a very successful program
9 here at the Air District, from a fiscal and
10 programmatic sense. We were recently audited by
11 three different agencies, by the Bureau of State
12 Auditors, the Air Resources Board and the
13 Department of Finance. Each of them really
14 looking at our program from different aspects:
15 from a fiscal perspective, from a programmatic
16 perspective. And we received very successful
17 audits by these different agencies.

18 And, Peter, I'd be happy to provide you
19 with copies of those audits so you can take a look
20 for yourself and kind of see what some of the
21 comments that were made.

22 But ARB, for example, did commend our
23 Air District for establishing several best
24 practices that other air districts use in
25 implementing their programs.

1 And one of the things that really make
2 our program very successful from an air quality
3 perspective is that we are heavily over-subscribed
4 because of the different things that we do and the
5 way we construct our program and implement the
6 various incentives that we offer.

7 We've received many more applications
8 than we have available grants. So, for example,
9 right now we have about \$200 million worth of
10 applications in our queue with a much less limited
11 amount of grant funds available.

12 And so what that really does is, one, it
13 really creates a demand for these incentive
14 dollars that could be very well used here in the
15 valley. But also creates this pool of projects
16 where you can actually pick really good projects
17 out of this bigger pool of projects.

18 Because of our success in administering
19 these different programs a lot of air districts
20 have actually come to us also to implement the
21 dollars that they receive.

22 So, for example, in our school bus
23 program we're implementing that program for a
24 number of other air districts that are surrounding
25 us here. We also do similar work in the Carl

1 Moyer incentive program.

2 And lastly, our board recently
3 reaffirmed its commitment to greenhouse gas
4 reduction. That's something that we typically
5 haven't worked with quite as much, as far as
6 climate change.

7 But through our climate change action
8 plan that our board adopted, the board has
9 committed to looking for these reductions and
10 trying to find what we call win/win situations
11 cobeneficial projects that not only reduce
12 greenhouse gas impacts, but also achieve some of
13 the other goals that we have as far as criteria
14 benefits and toxic benefits.

15 These are examples of different programs
16 that we actually currently run here at the Air
17 District. Here are some of the major elements, at
18 least. The onroad heavy duty truck program. I'll
19 just quickly go through this list.

20 We have offroad ag equipment, and that
21 would include tractors and other types of offroad
22 equipment. Offroad construction and other
23 equipment, nonag equipment.

24 Our lower emission school bus program is
25 a very successful program. We received about \$40

1 million over two years to spend there and are
2 severely over-subscribed as far as the number of
3 applications we've actually received from school
4 districts.

5 In our region in particular we just have
6 a number of older school buses. Not quite as much
7 funding in the San Joaquin Valley, so we have a
8 fleet that's typically older than the rest of the
9 state.

10 Forklifts; ag pump engines;
11 electrification; ag being our main industry here
12 in the valley. We have a number of diesel and
13 natural gas engines that could really use some
14 cleaning up, and so we do have a lot of projects
15 involving ag pump engines.

16 We have supported alternative fuel
17 vehicles and infrastructure in the past. We've
18 paid for CNG stations and natural gas fleet
19 vehicles, et cetera.

20 We have a program targeted at light- and
21 medium-duty vehicles. We do some creative stuff
22 like telecommunications, emobility. You know,
23 we've paid for counties setting up their essential
24 permitting structure through a website to
25 minimize, you know, traffic going into the county

1 office.

2 We've paid for bike paths and other
3 bicycle infrastructure. Transit subsidies. Van
4 pool subsidies. Trying to encourage folks to take
5 alternative transportation.

6 We've also funded alternative fuel
7 vehicle mechanic training to try to build some of
8 that side of the infrastructure, as well.

9 And we operate a pretty creative car-
10 crushing program that actually profiles and
11 targets the high-emitting vehicles in the valley.
12 And we're actually looking at ways to better that
13 program, and even improve it and add additional
14 funds through AB-118 on the BAR side, not so much
15 on the CEC side, but on the BAR side, as well.

16 We have other programs. We have a
17 greenhouse gas mitigation program. We have a
18 number of agreements that we're entering into to
19 reduce greenhouse gas emissions from various
20 projects.

21 We have a fireplace/wood stove change-
22 out program. Green yard machine, where we pay for
23 electric lawnmowers.

24 We do a number of technology
25 demonstration projects. One that we're very

1 excited about right now, that I think follows very
2 closely in line with the mission of the AB-118/CEC
3 program is the hydraulic hybrid project. Which we
4 received some funding for. And there's other
5 ideas that keep coming up for that type of
6 project.

7 And we enter into a number of other
8 special projects to receive -- to incentivize
9 emissions reductions.

10 And so really, you know, as far as
11 opportunities for collaboration we see our mission
12 very closely aligned with the mission of this new
13 program that the CEC's undertaking.

14 We are very interested in collaborating
15 with the CEC and local partners, other folks who
16 are interested in these projects, to find these
17 cobeneficial projects in the valley.

18 And when I say cobeneficial, you know, I
19 really want to emphasize that because we really
20 think the majority of these projects are
21 cobeneficial. If you can achieve greenhouse gas
22 reductions, you most likely are going to achieve
23 some of the other criteria and toxic benefits, as
24 well.

25 But there really is a small subset of

1 these projects where you can risk actually
2 increasing maybe a toxic impact while you're
3 reducing a greenhouse gas impact.

4 And a really good example of that just
5 briefly is with a dairy digester, for example.
6 You know, you might reduce a lot of greenhouse gas
7 emissions by installing a lagoon, you know,
8 covering up a dairy lagoon and capturing those
9 gases. But if you burn that gas through, you
10 know, an uncontrolled engine or a flare, you're
11 creating NOx and you're creating other types of
12 pollutants that we're trying to avoid.

13 So that's really where we emphasize the
14 cobeneficial side of this and just being careful
15 with how we fund these projects.

16 The Air District does offer an
17 experience program with infrastructure. This is
18 what we do here. We have a whole department
19 dedicated to this kind of work.

20 And we also offer potential cofunding.
21 I think that's really important here, where, you
22 know, if you can take some of these dollars that
23 are available through the CEC, match them up with
24 some of the other dollars that we might have
25 available here, and actually make bigger projects

1 happen. I think there's a lot of potential for
2 that, as well.

3 And just to sum it all up, you know, I
4 think through our program here, and we'd be able
5 to offer some pretty quick and early
6 implementation of these projects. With our over-
7 subscribed programs we have applications in the
8 queue. Be pretty easy to roll these applications
9 into some of these programs.

10 These are just some of the categories,
11 you know, this is a subset of the other list of
12 projects that we offer. But, you know, a lot of
13 these, you'll notice, are alternative fuel-type
14 projects, infrastructure, vehicle development,
15 deployment.

16 Distributed fuel power generation. You
17 know, there we're talking about, you know,
18 potential LNG liquefying, dairy digesters, coming
19 up with fuel processing. You know, maybe
20 converting fleets to natural gas. There's a lot
21 of concepts, I think, that we can work with to
22 achieve those goals.

23 Fuel mechanic training, alternative fuel
24 mechanic training; light- and medium-duty vehicle
25 support. Ag pumping efficiency improvement. I

1 think that, you know, anything you do for fuel
2 efficiency basically achieves both greenhouse gas
3 reductions as well as criteria and toxic
4 pollutants.

5 Aboveground tank fuel storage.
6 Efficiency improvements. Clean yard equipment.
7 Biomass incentives. One of the major issues,
8 challenges that we have right now is really
9 supporting biomass. In this economy and with the
10 way the market's working out right now, it's
11 getting very difficult to actually support or to
12 incentivize alternative ways of dealing with
13 biomass. And so anything we can do there to try
14 to help that situation.

15 Bicycle infrastructure and mobility.
16 Transit subsidies. And then any other project
17 categories that I think we can brainstorm together
18 with the stakeholders and with the CEC to try to
19 collaborate on some of these projects.

20 That is my brief presentation. I don't
21 want to, you know, take the show away from the
22 CEC. Again, I want to thank you for being here in
23 person and for listening to us. And we look
24 forward to working with the stakeholders and with
25 the CEC on this program.

1 I don't know if we have time for
2 questions. I can either take some now or later.
3 But I'd be happy to -- do we have some time right
4 now, Peter? Okay.

5 Does anybody have any questions? Okay,
6 I think him first, and then we'll go over here.

7 DR. KAFFKA: Hi, Steve Kaffka. Could
8 you elaborate a little bit more on your policies
9 towards dairy digesters and, you know, IC engine
10 generator sets and whether you see tradeoffs as
11 appropriate in that setting?

12 MR. SHEIKH: It's a very good question.
13 It's a very tricky issue because there are a lot
14 of benefits to a dairy digester. You know,
15 there's not only the VOC reductions that you might
16 see, for example, but better handling of the
17 manure; routing it through a more efficient manure
18 management process.

19 You know, you're getting rid of some of
20 the odor and nuisance-causing, you know, for
21 residents that might live around the dairy. It's
22 very beneficial to capture a lot of those gases.

23 But the primary concern that we have is
24 with the NOx that you might generate from the
25 wide-scale movement of moving into digester

1 systems that have these power-producing
2 combustion-oriented processes.

3 So, really our position on that right
4 now is that, you know, right now any digester
5 going through that sort of a process would have to
6 get a permit from us. And we have some very
7 stringent limits that we've been enforcing through
8 that permitting process to reduce those NOx
9 emissions and the, I guess the negative impacts
10 that you might see from that kind of a project.

11 So that's sort of taking care of itself
12 when you go through that permitting process. We
13 are expecting some pretty low emissions from that
14 combustion process.

15 But we think, you know, we are trying to
16 encourage some technologies demonstration
17 projects. For example, for fuel cells, for
18 microturbines.

19 We're building flexible permits. In the
20 cases where folks have tried to propose an engine,
21 for example, as a primary method of producing the
22 power, we have built flexible permits where we're
23 allowing some testing and some flexibility in the
24 emissions limits that we're going to establish as
25 a result of that kind of an operation.

1 So, you know, we've run some
2 calculations. If 300 or 400 dairies out of the
3 1500 dairies in the San Joaquin Valley, you know,
4 were all to put in, you know, fairly clean engines
5 as the power-producing mechanism for those
6 dairies, it would basically wipe away all the
7 reductions that we've achieved from all the other
8 sources that we regulate under our rules.

9 I think we estimated about 8 tons per
10 day of NOx would result from that number of
11 dairies installing that number of engines as a
12 result of these digester projects. And we don't
13 want to see that happen. We don't want to see
14 this major NOx increase as a result of these
15 projects.

16 So, we're working with, you know, we are
17 working with the state and with the dairy
18 stakeholders and digester stakeholders to try to
19 find some solutions for that. And we're
20 supporting some research to try to look at
21 alternative and clean ways of burning the gas.

22 We support gas-injection projects, for
23 example. If you can clean up the gas and route it
24 through a pipeline and do something else, rather
25 than burning the gas on the dairy. And there's

1 limitations to that, but if you can do that that's
2 another way of dealing with the issue.

3 It is a very delicate issue, obviously,
4 because it's a clash really, in some cases, of the
5 greenhouse gas benefits and some of these criteria
6 benefits.

7 And so I guess that's the best way I can
8 answer that. I'm not sure if I answered your
9 question or not, but we are trying to find
10 solutions to that problem.

11 MR. WARD: And I think you had a
12 question?

13 MS. NEAL: Yeah. My question relates to
14 NOx. We have a valley filled with compression
15 engines because of the workhorse qualities that
16 these engines have. And have historically kept
17 the economy going in this valley in trucking and
18 agriculture and people pulling heavy loads.

19 And so my question is about the NOx.
20 We've got like two contradictory sort of, if you
21 will, -- sort of a barrier. We've got, you know,
22 a mandate and incentives to increase use of
23 biodiesel and biofuels here in the valley.

24 And at the same time, the biodiesel
25 testing that was just released at the state level

1 shows that there's significant reductions in three
2 of the four criteria pollutants, and significantly
3 reduces greenhouse gases, particulate matter, and
4 these things. And yet there's a slight increase
5 in NOx.

6 And I see northern California and
7 southern California more embracing biodiesel and
8 biofuels than I do in the valley. And I'm pretty
9 sure it's because of the NOx.

10 And so I'm wondering what technologies
11 do we have in reducing that NOx? Because that's
12 the one pollution I know we need to deal with.

13 My understanding is catalytic converters
14 that can reduce that. What other information do
15 you have about that that we can look at so we can
16 also knock that pollutant out of our valley?

17 MR. SHEIKH: Well, that's a very good
18 and tough question to ask because it really is a
19 dynamic issue right now, the issue of biodiesels
20 and what role they play in alternative fuels and
21 the whole air quality picture.

22 We are looking at the research that
23 you're talking about. I mean this is something
24 that we're very interested in. The NOx impact is
25 of concern to us.

1 We do recognize the benefits that you
2 might see in some of those various biodiesels
3 depending on the feedstock on the particulate side
4 and some of the other side. And that's very
5 important to us from an environmental justice and
6 toxic impact as far as getting rid of some of the
7 diesel particulates and replacing them with maybe
8 some of the biodiesels or other types of fuels.

9 But the NOx impact is of concern to us.
10 I'm not sure that I'm aware of, you know, one of
11 the major issues right now with heavy-duty trucks
12 in general is, you know, the looming 2010 standard
13 and trying to get those, you know, the catalysts
14 and technologies developed and implemented to be
15 able to meet that standard for the diesel trucks.

16 And I'm not sure how much work is going
17 on right now in the biodiesel to try to, you know,
18 the issue with the state and with a lot of these
19 programs is that, you know, typically we only pay
20 for verified technologies, technologies that have
21 been demonstrated over various, you know,
22 durability cycles and over a lot of different
23 factors to actually work, and easy to maintain, et
24 cetera.

25 I don't know if, for biodiesels, you

1 know, we're already up against the clock for just
2 regular, you know, kind of the wide, run-of-the-
3 mill diesel truck. And I'm not sure for
4 biodiesels whether there's really any sort of
5 verified solution for NOx yet.

6 I think we're very open, though. If the
7 research shows that there are overall benefits,
8 for example, with biodiesels, or if there's no net
9 negative impact on the NOx side, you know, I think
10 from an EJ perspective and a toxic perspective, I
11 think we'd be supportive of that kind of a
12 project.

13 But I'm not sure that we know, really,
14 enough right now to have a final sort of official
15 position on biodiesel. We're working on it
16 currently, looking at the situation, sort of like
17 you are, and trying to evaluate where we are with
18 that.

19 And if we hear about good projects that
20 are win/win situations, we'd be supportive of
21 them.

22 Does anybody else have any questions
23 before I -- I'm going to stick around actually
24 until 11:00, so if you're interested in talking to
25 us about any potential projects we'd be happy to

1 talk to you.

2 MR. SHEIKH: Okay. Thank you very much.

3 MS. NEAL: Thank you.

4 MR. WARD: Next we have another
5 presenter. Roger Teschner is from the Clean
6 Cities Coalition in the San Joaquin Valley. And
7 Linda Urata recommends Roger highly and we want to
8 hear more about it. I guess he's going to be
9 talking to us, I'm thinking, maybe about his ATTE
10 program. I don't know how I got that impression.
11 Thanks, Roger.

12 MR. TESCHNER: Good morning. Thank you,
13 Peter. I'm here representing Clean Cities
14 Coalition. Linda Urata is the actual coordinator
15 for the San Joaquin Valley Coalition. She's down
16 in Bakersfield doing other duties, as she does on
17 a daily basis.

18 I brought some handouts that I did not
19 put out -- they're out there now -- that you might
20 want to pick up as you do leave.

21 And I want to read this so you can
22 understand it and get a little bit more clear
23 picture.

24 The San Joaquin Valley Clean Air Cities
25 is a partnership of public, private agencies and

1 businesses who want to improve air quality in
2 California's central valley, okay.

3 Our goals are to clean the air and
4 reduce the dependence on foreign oil by reducing
5 petroleum use in the transportation sector.

6 Our stakeholders develop public and
7 private partnerships to promote alternative fuels
8 and vehicles, fuel blends, fuel economy, hybrid
9 vehicles and idle-reduction technologies. We seek
10 to develop cooperative joint ventures which will
11 help businesses and member agencies comply with
12 air and transportation regulations in a cost
13 effective manner.

14 Okay, that's a big mouthful, but
15 basically what we're there to do is help promote
16 ideas and activities, partnerships, collaborations
17 to help clean the air in the central valley.

18 We are currently going through a
19 membership drive. We're looking for stakeholders.
20 We're looking for members on the board of
21 directors, okay. Our board of directors meets
22 once a month and we discuss a lot of the things
23 that are going on.

24 There's some forms outside the door here
25 for membership. Membership is \$50 a year for a

1 single, okay, \$100 a year for a multiple, okay.
2 So, please, if you might be interested or you know
3 of somebody, I encourage you to take one of those
4 and become part of the Coalition. I know there's
5 some members that are in here right now. And it's
6 a very worthwhile cause.

7 Yes, ATTE is my position. I've been
8 with the Coalition, the Clean Cities Coalition,
9 for a little over four years now. My position is
10 I'm the Director of what's called the advanced
11 transportation technology and energy initiative.

12 It's a long word, it's a long title.

13 We have ten centers in the state of
14 California. We are at the community college
15 level. And we do anything that has an engine. We
16 do land, air, rail and sea. We do things such as
17 GPS, GIS, intelligent transportation. And we just
18 recently took on energy. So we also do solar, we
19 do wind, we do geothermal, and we do tidal power.

20 And our goal basically is very similar
21 to what Clean Cities' is. We try to reduce our
22 dependency on petroleum-based fuels. We offer
23 curriculum; we offer training. We offer training
24 in the areas of all the alternative fuels. We do
25 cylinder inspection for CNG trucks.

1 Hydrogen, we're doing some biodiesel.
2 And one of the activities that I do get involved
3 in, it's very similar to what Samir was talking
4 about as far as the recycling or retirement of
5 gross polluting vehicles, okay.

6 I work with a nonprofit called Valley
7 Clean Air Now. Okay, I don't know if anybody has
8 heard about them now, okay. It's Valley Can.
9 They basically cover the whole San Joaquin Valley,
10 as well.

11 I've been working with them for about
12 four years now, doing an event. And I'm sure some
13 of you have heard about it, it's called the Tune
14 In Tune Up event. It's a volunteer activity on a
15 Saturday where we advertise and have people bring
16 their vehicles, or drive their vehicles to our
17 location.

18 And we basically use community colleges,
19 okay. We've used all the -- well, not all of them,
20 but San Joaquin Delta, Modesto, Merced, all the
21 way up and down the valley, down to Bakersfield.

22 We use the college location. We have
23 people drive their vehicles in and we do a
24 tailpipe sniff, okay. Basically determine if they
25 are a high polluter. If they are a high polluter,

1 Valley Clean Air Now issues that driver, okay, a
2 coupon that's good for up to \$500 worth of free
3 repairs, okay.

4 It has been very successful. We are
5 going to be doing our 13th event in March down in
6 Bakersfield. We normally do about 350 cars a day,
7 okay, on a Saturday. We are going to increase
8 that and we're going to try to do 500 vehicles in
9 a day.

10 It's a very well received event. We've
11 done them in economically distressed areas such as
12 Arvin, Avenal and Parlier and it's been very
13 successful.

14 And we also work with the Bureau of
15 Automotive Repair. And they have their vehicle
16 retirement program there, as well, that they
17 promote. And if the owner so desires, they're
18 eligible to get the \$1000 payment for them to turn
19 their vehicle in, and the vehicle gets crushed,
20 okay.

21 So that's -- again, those are some of
22 the things that the Clean Cities is also involved
23 with me on. I guess I can -- just wanted to give
24 a quick overview.

25 If anyone has any questions or not.

1 Like I said, we sure could use more stakeholders
2 and more people participating and we welcome the
3 opportunity to work with everybody.

4 MR. WARD: Roger, I have a question.

5 MR. TESCHNER: Sure.

6 MR. WARD: And we talked about it a
7 little bit before this meeting. There's
8 speculation now that in Washington with the
9 economic stimulus bill that the Clean Cities
10 organization, under DOE, is going to be getting a
11 considerable amount of funding. I think in the
12 Senate it was 400 million and the House 300
13 million. They'll go to conference to resolve
14 that.

15 So, I think it should be mentioned that
16 there are awfully good things in store for the
17 Clean Cities organizations in the state. You have
18 13 coalitions in the state, and --

19 MR. TESCHNER: Right.

20 MR. WARD: -- and yours here is a very
21 active one. It was a treat to hear about all your
22 -- the tuneup program, that's excellent, I think.

23 I imagine you have some ideas for some
24 of this funding. In the past the Clean Cities
25 organization has gotten 13 million at the top

1 annually. And now they're thinking about 350
2 million in one year.

3 So it will be kind of all hands on deck
4 to see how we can partner with you, and you with
5 us, and spend that money wisely for alternative
6 fuels and vehicles.

7 MR. TESCHNER: Yeah, thank you. Yes, we
8 just had our latest meeting, our board of
9 directors meeting. And one of the things that
10 Linda is working on to go through the ATTE
11 organization, as well, is CNG tank inspection,
12 okay.

13 Trying to get some -- PG&E used to
14 sponsor a lot of that training, okay. I think
15 those funds have dried up, as well, okay. We're
16 trying to get some money to offer that same type
17 of training, but utilize instructor staff from the
18 Advanced Transportation Technology, the ATTE
19 centers.

20 I have a gentleman here that is being
21 recertified, so we will be able to offer that
22 training here locally, as well, okay. We have
23 trained people, I think, at eight of the ten
24 locations for ATTE that does teach, okay, cylinder
25 inspection, okay.

1 We also have people available to teach
2 hybrid training, okay. We have diesel. Like I
3 said, advanced -- excuse me, GPS, GIS. If you're
4 looking for anything on intelligent
5 transportation, the effect of an efficient
6 movement of vehicles, we do that, as well.

7 Just to show you the versatility, we
8 also have our Sacramento center does a couple of
9 different things. They do -- actually three --
10 they do aviation training, okay. They do
11 locomotive training, okay, the rail. They do the
12 air and they also have -- we also have three
13 centers that have a motorcycle program, okay, that
14 teach motorcycle technicians, okay.

15 So we are, you know, expanding out.
16 Again, Long Beach does a lot of CNG down there.
17 So we do have the -- you know, there are many
18 different things.

19 If you're interested, again I have some
20 business cards. I'll put some business cards out,
21 but our website is attcolleges.org. Okay. And
22 that will give you a good overview of the
23 locations and what some of the projects that we
24 actually are doing.

25 Any questions? If not, thank you very

1 much.

2 MR. WARD: Thank you, Roger.

3 The next presenter is Dr. Stephen Kaffka
4 from the University of California at Davis. He
5 wants me to call him Steve, I'm still not
6 comfortable. He's the doctor, Dr. Kaffka to me
7 because I really highly respect him.

8 Throughout out process of AB-118, I have
9 viewed Steve as a very welcome breath of fresh air
10 and rationality to the process. He's got the
11 boots-on-the-ground perspective, which I think is
12 excellent. He's kind of both worlds, on the
13 ground and in academia. And his contributions
14 have been invaluable to us as we've gone forward
15 with our investment plan.

16 Steve.

17 DR. KAFFKA: It's always a little
18 difficult to live up to an introduction so kind
19 like that.

20 Just a few things for introduction. I'm
21 going to talk about biomass, and particularly
22 agricultural biomass. Here in Fresno and in
23 Fresno County and in the San Joaquin Valley in
24 general, we're in one of the most extraordinary
25 agricultural environments in the world. And

1 anybody who's traveled or lived abroad knows that.

2 Productivity and diversity of crops are
3 unexcelled when we have water, of course. But so
4 I just want to talk a little bit about the -- and
5 we don't have very much time because there's a
6 number of speakers on the program, but a little
7 bit about the potential of agricultural biomass
8 particularly from this region, as playing a role
9 in meeting some of our fuel, biofuel needs.

10 I, in fact, think there is a role for
11 farmland and products in helping the state meet
12 its very very demanding carbon targets. I don't,
13 in fact, see how the state can do it without
14 agricultural biomass at least as a contributor.
15 Not necessarily the sole source.

16 But to put things in perspective, we've,
17 all of us -- some of this doesn't show up very
18 well, there's some very fine dots. You have you
19 strain to see the red dots on this slide -- on
20 this screen, but those of us that are -- yeah,
21 there you go, good; thank you very much. Got a
22 good guy here.

23 We can all congratulate ourselves for
24 living right at the peak of that curve. This is
25 right now. That's the peak of the oil era. The

1 coal era, the black line, will last longer. I
2 mean there's lots of coal around, but it's not
3 clearly as good a source of energy from a fossil
4 expectation.

5 Prior to this oil and coal era, human
6 life has been powered by biomass. And, in fact, a
7 large portion of the population of the world still
8 is primarily powered by biomass.

9 So the question for us in the future is
10 to what degree we will rely on biomass either in
11 an increasing amount or in a sustained amount in
12 the future.

13 Just for agriculture, one of the things
14 that's happened -- historically, if we were going
15 to increase our use, our productivity from
16 agriculture, historically people had to expand the
17 area of land that they used.

18 Now, in the modern era, since the fossil
19 era began we haven't had to expand our use of
20 agricultural land. In fact, it's declined to some
21 degree. Or not increased nearly at the same rate
22 as the productivity of the land has occurred.

23 So we've had this intensification
24 process of using fossil fuels in our productive
25 processes that has led to not only agricultural

1 surpluses for the most part on a world scale, but
2 also a disassociation from the need to expand our
3 land use.

4 Now, some of this has led to global
5 warming. And scientists have been busy collecting
6 data. I have to thank Greg Mitchell from UC San
7 Diego for this slide.

8 So there are quite, you know, clearly
9 signs of global warming. But on a more serious
10 level, we do -- many of us are familiar with this
11 Mauna Loa curve.

12 So the question is can we both maintain
13 our agricultural productivity, and also look to
14 agriculture for some feedstock supply or
15 substitute source for petroleum to help to reduce,
16 to some degree, this increasing rate of CO2
17 accumulation in the atmosphere that is, at least
18 the majority, probably derived from fossil fuel
19 use.

20 Now I'm sure you saw some policy slides
21 earlier. This comes from the Energy Commission,
22 Ken Koyama put this together. We are all of us,
23 on a carbon diet. We are now in California on a
24 carbon diet.

25 The state government has committed

1 itself, and us with it, to reducing our CO2
2 outputs. And as you can see here, there's quite a
3 bit of emphasis on finding alternatives and
4 renewable sources of transportation fuels. And so
5 that's where we think agriculture comes in.

6 The energy companies are very concerned
7 about this. So reiterating what I said just a
8 minute ago, it seems likely that all sources of
9 inputs will be needed to meet both the standards
10 and also even the supply necessary.

11 For the background you can see the San
12 Joaquin Valley along the west side there, at the
13 peak of the irrigated agriculture some years ago.
14 To what degree, or how can we think about our
15 agriculture perhaps contributing to this.

16 I'm the current Director of the
17 California Biomass Collaborative. It was
18 established initially led by Bryan Jenkins in the
19 Department of Biological and Ag Engineering at UC
20 Davis.

21 But it is a statewide organization. It
22 includes academics, government folks, nonprofit
23 sector, people with biofuel and bioenergy
24 businesses. You can all join, it's free. Go to
25 biomass@ucdavis and you'll find it; and you can

1 sign up and become a member.

2 One of the things that the Biomass
3 Collaborative does is to collect data and create
4 estimates of the amount of available biomass by
5 sector and by location around the state. This
6 information is useful for people who would like to
7 have a business. It might be useful for people
8 who are interested in thinking about whether they
9 want to contribute feedstock.

10 And so these are some of the current
11 estimates of the potential biomass available in
12 California and its location. And a distinction is
13 made between what is actually out there physically
14 and what might be technically recoverable.

15 Now, all those estimates of technically
16 recoverable are subject to change. I'm going to
17 talk to you about a method that we're proceeding
18 with currently to try to improve our estimate of
19 the technically recoverable biomass from
20 agriculture.

21 This is from some recent work from the
22 Collaborative that shows, that tries to link the
23 infrastructure in the state. These, some of these
24 are terminals of rail-lines and things like that
25 where biomass is actually physically located.

1 And you can also see some projections
2 for the use of biomass in the future. You can
3 see, you know, lots of sources. Not only -- we've
4 been talking about agriculture here, but also
5 there's forest biomass, there's waste grease that
6 someone mentioned a little earlier ago, there's
7 stover and straw and tallow and other sources that
8 we anticipate will be important in the future.

9 Now, there's a lot of uncertainties
10 about all this. And just think a little bit about
11 it, and for a little bit of time. We still, I
12 mean, nobody knows yet what are going to be the
13 best feedstocks for biomass, broadly defined
14 biomass processes.

15 How are we going to actually pay for
16 this and contract this, and get this to happen.
17 So, for example, down in Imperial Valley there are
18 at least three groups that are trying to establish
19 sugarcane for production.

20 One of those folks makes a very good
21 point that it was a lot easier with corn, because
22 the corn was already there. All you had to do was
23 divert some for fuel.

24 If you're going to try to establish
25 sugarcane, which for example is a perennial, you

1 first have to grow it out. But that's before you
2 build the factory. So what do you do with it
3 while you're growing it out. And how do you pay
4 for it and how do you get growers to do it. And
5 then you can't build a factory till you get a
6 sufficient supply. So, it's kind of a chicken-
7 and-egg process.

8 So, all those kinds of processes affect
9 the potential for starting ag-based biomass
10 businesses, and many other types of biomass
11 businesses.

12 There's constant evolution in terms of
13 the technology of how to convert biomass of
14 various sorts. Should it be ethanol; should it be
15 for biodiesel; should it be thermochemical; should
16 it be biochemical. What combination of all those.
17 Those are still things that are really very much
18 in research and in play.

19 Public policies are evolving. We have
20 taken a large number of steps in California with
21 AB-118 and AB-32 and other policies. But even
22 those are still evolving in the sense that the way
23 in which they're going to be implemented, the
24 rules that are going to be used in how to
25 calculate things and what qualifies or not are

1 still being developed. It's hard to make an
2 investment without that kind of certainty.

3 And, of course, the price of oil. Who
4 would have thought a year ago we'd be at 38 bucks
5 a barrel or 39 bucks a barrel, when it was 140-
6 something. And who would have thought it was
7 going to be 140 two years ago. So there's a lot
8 of volatility and there's a lot of uncertainty in
9 these things.

10 Now, California is a -- we're clearly a
11 hydraulic landscape. Our agriculture's intensive.
12 It's high-valued. It's largely dependent on
13 irrigation. So the question is can and should we
14 produce these biofuels in California. And if so,
15 where. Those are really the key questions.

16 The most likely crops in that short- to
17 mid-term are the things that we know about.
18 Certainly corn is the major feedstock for ethanol
19 in California. We don't grow corn for grain that
20 much. Most of our corn in this part of the world
21 is for silage and for feeding cows. But there is
22 still some corn.

23 Sorghum can substitute for corn. The
24 Europeans use wheat and other small grains to make
25 ethanol. All the oil seeds are potentially

1 feedstocks for biodiesel if they're in surplus and
2 available at a low enough price.

3 Sugar crops are also feedstocks for
4 ethanol. And also for other sources of energy.
5 So in the Imperial Valley I mentioned sugarcane.
6 Sugarbeet factory in the valley here just closed.
7 But there's a growers coop that's interested in
8 perhaps pursuing sugarbeet production for ethanol
9 and other forms of power. Sweet sorghum might be
10 a good crop in the central valley. I think it
11 could be.

12 In the longer run we're going to be
13 looking at things that are maybe perennial
14 grasses. And maybe even ready crops like a
15 jojoba, jatropha, paulownia. And I say, finally,
16 algae. Actually, we don't know when algae might
17 become commercially viable. It's not commercially
18 viable currently yet, but it has potential, like
19 all these things that have potential.

20 I think many growers would like to
21 reduce their input costs for fuel and stabilize
22 its price. And so there's some potential, there's
23 incentive to try to address that, perhaps through
24 agriculture.

25 This is just a little bit of data from

1 recent projects on canola production. Some of
2 this was done at the West Side Research and
3 Extension Center. This data is from up on the
4 Davis campus. And it shows variety trial yield
5 differences in canola.

6 This is planted in November and
7 harvested in May/June. You can see nitrogen
8 response curve. That's the straight line. Pretty
9 much responsive to nitrogen. And you can see the
10 green and the black bars are differences between
11 varieties and irrigation, plus or minus irrigation
12 in a dry year up at Davis. That was 12 inches of
13 rainfall there.

14 And the next one is just a little bit of
15 work from a recent sweet sorghum trial at the
16 Imperial Valley station. We hope to establish
17 trials at West Side and Shafter this year, as well
18 as at Davis and Imperial again. You can see
19 yields of different varieties from a summer-
20 planted/fall-harvested crop.

21 These are just not here for you to
22 necessarily, you know, ponder what the data means
23 in this case, but just to show that there's some
24 agronomic work going on in these areas.

25 Just want to finish up by talking

1 briefly about a project that, in fact, we're
2 working on, I'm down here partly to work on today
3 with a grad student who's with me here, Fujin Yi,
4 from agricultural and resource economics. And a
5 bunch of the farm advisers who work in the valley,
6 in this part of the valley, and elsewhere in the
7 state, as well as some professors from
8 agricultural resource economics.

9 And it's also part of our bioenergy work
10 group. If you Google that, you can join that.
11 That's a cooperative extension-related work group,
12 if you're interested in feedstock production.

13 We're trying to estimate much more
14 realistically what are the real thresholds or
15 potentials for some alternative crops that we can
16 model on farms actually in the area.

17 This is just, again, for background.
18 Those of you who know about agriculture, or even
19 the landscape in general, realize it's not
20 uniform. And the opportunities and the
21 constraints that farmers face vary across the
22 state.

23 So here you can see just a map of soil
24 formation and soil disposition, and where, you
25 know, as you go from the west side of the valley,

1 this is looking from the delta north, but the west
2 side of the valley into the valley bottom, the
3 kinds of crops that you find on the various types
4 of soils that have formed, and how the crops and
5 the soils fit together.

6 As you go north and south, as you go
7 farther north you have more rainfall; as you come
8 down here you have a longer growing season and
9 it's warmer, but you have less rainfall. On the
10 west side you have salinity issues.

11 So each of those combinations cause a
12 whole different set of constraints with a whole
13 different set of kinds of potential solutions for
14 growers.

15 So if we were to calculate the average
16 recovery from farm crops across the whole state of
17 California we'd both over-estimate and under-
18 estimate the potential for individualized biomass-
19 type enterprises. So we think that this needs to
20 be done on a more individualized basis.

21 I just, again, put a slide in to show,
22 you know, those of you that are down in this part
23 of the world know the west side, which is a great,
24 highly productive region, also has these saline
25 sodic areas.

1 But there are opportunities even in
2 those areas. They might be actually great
3 opportunities to re-use drainage water and saline
4 salts for the right kinds of crops. Which might
5 also not only be feed sources for cattle, but also
6 biomass sources for power and energy.

7 So, we're using these economic
8 optimization models to better estimate the actual
9 potential of biofuel crop production residue use
10 in California. And we want to estimate the yield
11 and the cost goals that we need to introduce
12 biofuel crops into California.

13 As an agronomist I want to know how high
14 a yield of sweet sorghum do I need to achieve, and
15 at what cost of production to make it interesting
16 to grow. So that's a nice target for me for my
17 research. And it would be true for any of these
18 other crops. So we can get this kind of
19 information from them.

20 We also can use these models, if they're
21 accurate, to estimate, say, well, what if farmers
22 get extra money to store soil carbon, how much
23 could we store. And how much is that worth. How
24 much would it have to be to get them to produce a
25 certain kind of crop.

1 What if there is an N2O constraint, a
2 nitrous oxide loss constraint. Or in other words,
3 what if we want to reduce that greenhouse gas,
4 what does that cost to have happen if you reduce
5 fertilizer inputs in the farming systems to meet
6 that constraint. And so on.

7 So we want to create these realistic and
8 representative models. We're going to model each
9 of the major areas of the state separately. And
10 within those areas we'll have separate models for
11 individual farms to be able to predict these
12 potentials.

13 And we're using linear programming,
14 which is an economic optimization technique. It's
15 modified from the simple linear programming model.
16 But what it does is it tells the farmer what's the
17 best, most profitable combination of crops for his
18 farm. And it tells you then why didn't this other
19 crop get grown. How much more money did you have
20 to get for it to have it come into the rotation.
21 That's the kind of information that will very much
22 help us assess potential for a new crop like sweet
23 sorghum.

24 I'll just skip that. So, what are we
25 doing. We're actually surveying farmers. I'll

1 show you some data from that. In fact, Fujin is
2 going to be serving another two -- meeting with
3 another two growers tomorrow in the area.

4 Create models based on the information
5 they give us. And then you can use these
6 sensitivity analyses to estimate the potential for
7 biofuel crops. I left out this is partly in part
8 supported by the Energy Commission, because the
9 California Biomass Collaborative is also an Energy
10 Commission-supported project. And the Energy
11 Commission wants to get realistic samples.

12 So these are some of the locations where
13 we have interviewed growers. We've done some up
14 in the intermountain region, some in the
15 Sacramento Valley, and the majority so far in the
16 San Joaquin Valley. We have some interviews
17 scheduled for Imperial Valley next week, actually.
18 So we're going to be going down there.

19 And some, I think, we'll set up in the
20 Salinas Valley in a little while. Surprisingly,
21 growers in the Salinas Valley, by their own
22 testimony, are interested possibly in growing
23 vegetable oil crop for diesel. Just they say, oh,
24 we've got little spots where we can do it.
25 Surprising, even though they have an extremely

1 high land grant in alternative enterprises, there
2 seems to be interest in this anyway.

3 This is hard to see, though you do have
4 about 12 dozen screens here to view it on. What
5 you can see is the cost of production from some of
6 the different growers that we've interviewed.
7 This isn't, by any means, all of them.

8 And just even looking just at alfalfa
9 the number in parentheses is the proportion of
10 that figure that's due to water costs. And I find
11 that -- Fujin made this slide, this is a nice
12 slide -- I find that very interesting because even
13 in the San Joaquin Valley growers have
14 substantially different water costs, and they're
15 not necessarily that far apart from each other.

16 Could be due to different irrigation
17 districts, the fact that they have good wells or
18 not, what those wells cost them and so on.

19 So, this kind of variation in cost
20 structure means that there's variation in the
21 thresholds at which crops could be produced at the
22 different farms.

23 So, we've tried to vary the purchase,
24 you know, taking just canola, which is a winter
25 mustard oil crop, November through June, and sweet

1 sorghum, which will be grown in the warm
2 weather -- and the whole plant is harvested, it's
3 a bit like sugarcane -- you can vary the price
4 received per ton, you can vary the yields over
5 certain range, and you can start to get an idea of
6 where the threshold points, at which different
7 growers will introduce the crop.

8 And so here's an example from our
9 current model run for both sweet sorghum and
10 canola. And you can see there's a fair price
11 spread there, especially in the sweet sorghum
12 arena.

13 Now, we're going to continue to refine
14 our understanding of what the costs and returns
15 are for sweet sorghum as our research comes in.
16 So these numbers aren't necessarily cast in stone,
17 but that process is ongoing. The same is true for
18 canola and any other new crops that we do work on.

19 One of the things that seems apparent --
20 here you see some sugarcane being harvested in the
21 Imperial Valley. It's a nice little piece of
22 machinery, isn't it?

23 Anyway, if you think about it, you take
24 the sugarcane model, if you were a grower selling
25 just the biomass to the factory based on some kind

1 of potential ethanol yield, it might not be very
2 profitable for you.

3 But, from that biomass you get ethanol;
4 you get the gas is burned and you generate
5 electricity; there's waste material that might go
6 to animal feed. Three products. Somebody
7 mentioned you might capture CO2 which could go
8 into an algae production system. Possibly four
9 products, all of which generate money.

10 So, then on a per-acre-foot of water-
11 basis or for acre basis, if some of that value
12 goes back to the grower it all of a sudden looks
13 not like the bottom end of the price differential,
14 but towards the top end.

15 So it seems clear that some sharing of
16 the whole value chain is going to be needed to
17 generate this.

18 And it's also clear that some growers
19 are willing to sacrifice some profit for security.
20 In other words, if they have a long-term contract
21 that guarantees them a return on variable costs,
22 that might be worth more than being in the crap-
23 shoot of growing a produce crop for a big price,
24 or losing money. So, I think, in fact, there are
25 realistic and reasonable opportunities here.

1 Just a bit about sustainability.
2 Sustainability is hard to define. It will be
3 defined, in part, through a set of rules,
4 regulations and guidelines that the state, for AB-
5 118 and for AB-32 legislation, like the low carbon
6 fuel standard, are actually formulated.

7 For me, simply sustainability means the
8 ability to continue over time. You can also
9 associate sustainability with productivity trends
10 over time, with soil health, or if you will, soil
11 quality over time, and things that can be
12 measured.

13 But there are other things. And I think
14 we heard an interesting example of it today, in
15 which people have to decide about what they
16 believe is most important, where they start to
17 trade off values. Things that aren't necessarily
18 measurable.

19 Social- and value-based issues, I think,
20 can only be derived -- can only have a definition
21 of what sustainability means in a constant kind of
22 dialogue and process around what those values are.
23 Because, in fact, those things change. What we
24 value today is quite different than what we might
25 have valued even five years ago.

1 Some things can be measured. Some
2 things can be assessed in terms of trends. But
3 other things will have to have a process for
4 discussion.

5 And about those things, we get down to
6 some of our personal and perhaps even some of our
7 deepest values. So, we're talking about
8 environmental issues. Some people regard them as
9 moral and ethical issues. In fact, I think
10 there's good argument to be made that, in fact,
11 many of them are. So that necessitates dialogue.

12 There are things that we can measure,
13 things that we can estimate, things that we can
14 predict. And then there are other things that
15 we'll have to be in a constant state of discussion
16 about.

17 So, what is a little bit of NOx loss
18 versus a little bit of greenhouse gas gain worth
19 to us. Well, I mean, there are some physical
20 consequences, but there are also some of these
21 other judgment calls that have to be made.

22 Can we produce biofuels in California
23 from crops and crop residues. I think we have to
24 consider the issue of sustainability from the
25 start. And the regulations, I think, are going to

1 try to do that.

2 I think we will know the most, if you
3 ask me, about the sustainability of the crops we
4 produce right here in the state. We'll know a lot
5 more about it than we will about what the
6 Brazilians or the Ecuadorans are doing.

7 And I think that could potentially
8 provide additional value, that knowledge, for
9 feedstocks produced in California. And I don't
10 think we should export all of our pollution by
11 importing our biofuels from elsewhere.

12 And remember that the alternative in the
13 future isn't necessarily, you know, a more perfect
14 biofuel or a no biofuel use, or no agricultural
15 biomass use at all, the alternatives aren't
16 necessarily better alternatives than the ones that
17 we have potentially for using some biomass in a
18 prudent way.

19 So, just want to finish by mentioning
20 the bioenergy work group. You can contact me or
21 my colleague, Kent Brittan, in Yolo County. We're
22 co-chairs of that. If you're interested in
23 participating in meetings and discussions about
24 this, and perhaps projects, if you have a farm and
25 you want to work with us.

1 And I did want to mention again the
2 California Biomass Collaborative. It's
3 biomass.ucdavis.edu. And you can join that and be
4 a part of this process, as well.

5 Questions?

6 Yes?

7 MS. SIMUNOVIC: (inaudible)

8 DR. KAFFKA: There can be. If public
9 policies mandate -- you're interested in the food-
10 versus-fuel issue. If you had a public policy
11 that said no matter what, we have to meet this CO2
12 reduction standard for our -- we have to have 10
13 percent biodiesel no matter what, no matter what
14 it costs, that would tend to divert some of that
15 vegetable oil supply to biodiesel. And raise the
16 price of seed, because you have to buy it no
17 matter what it costs. And that would tend to
18 raise the price of food for people who have very
19 little money and can't compete.

20 So you could have public policies if
21 they're not prudent that force that kind of
22 demand. In fact, that went on because the
23 Europeans had a mandate for biodiesel and the
24 price of oil seeds went through the roof last
25 year. People got \$450 a ton for safflower, which

1 is unheard of ever. They were very happy about
2 it.

3 On the other side it was quite good for
4 growers, because it was a low-water crop and it
5 was a high price, and they didn't have any water
6 anyway. So that was on the good side.

7 Generally the cost of food is higher
8 than the cost of the use of crops for energy. So
9 we're only going to use crops, in general, outside
10 of those distorting public policies when, in my
11 view, when we have surplus relative to the demand
12 for food.

13 So, generally I'm not so concerned about
14 it, but there are potentials where you have third
15 world cities which are dependent on the importing
16 of food from the U.S. and Australia, or wherever.
17 In the short run, until those countries revive
18 their own agriculture, due to higher prices that
19 they can get for producing it locally because of
20 the general rising of the price of food, in the
21 short run there's potentially problems with that
22 population. Could benefit rural people, poor
23 people with access to land. Just that their
24 prices will rise.

25 It'll have a mixed set of benefits. I

1 don't think that the ag and crop use will be
2 necessarily in the future of the major source of
3 fuels, but it'll be a contributor and could have
4 positive benefits for agriculture.

5 Certainly if growers make more money it
6 keeps them in business, and keeps their land out
7 of development in California.

8 A mixed answer, but I think that, in
9 fact, is the case.

10 MR. WARD: I have to say each time I
11 listen to Steve I learn something. And every
12 time. I'm looking forward to the next time, too.
13 Thank you. It was a very good discussion, a very
14 well-reasoned discussion about what we need to do
15 and what we need to avoid, I think, in the future.

16 We have some blue cards here, and I'd
17 like to go through those. Carla, Carla Neal, with
18 Green Footprint.

19 MS. NEAL: (inaudible).

20 MR. WARD: Okay, okay. All right. I
21 know that we have a gentleman from outside
22 California wants to make a presentation to us
23 today. Mark Aubry with Smith, Smith EV.

24 So, Mark, would you like to go ahead. I
25 think your presentation is already loaded up,

1 right? Good.

2 This is a fascinating presentation by a
3 company that's actually producing EVs and they're
4 going to be available for here in California. I
5 heard this last week from Mark. And I think
6 you'll enjoy it, as well.

7 MR. AUBRY: I'm going to let this run.
8 There may be sound, there may not be sound. It's
9 a four-, maybe five-minute clip. Shows you a
10 little bit about us as a company. And I'm a very
11 visual person, I like to look at things as opposed
12 to just listening to me.

13 And then I'll make a brief comment about
14 us and our expansion into the U.S.

15 (Whereupon, a video was played.)

16 MR. AUBRY: Okay, thanks, Joanne, I
17 appreciate it. All right.

18 Again, my name is Mark Aubry; I'm the
19 Vice President of business development and sales
20 for Smith Electric Vehicles in the U.S. And I
21 want to thank Peter, even though he's not here at
22 the moment, thanks for letting us be here, the
23 CEC, Tim Olson, if he was here, and as well the
24 San Joaquin Valley District.

25 I'm going to read a basic brief overview

1 of what our expansion involves coming into the
2 U.S. Probably some of the things that you see on
3 there you wouldn't normally expect to be in an
4 all-electric vehicle.

5 Most of the size of products that we
6 make really set us apart. Partly because we are
7 the world's oldest electric vehicle manufacturer.
8 And then, too, we make the world's largest all-
9 electric commercial products.

10 So, I'll read something that is our
11 expansion process coming into the U.S., and our
12 desire to work with the California Energy
13 Commission.

14 Smith Electric Vehicles Group is the
15 world's largest manufacturer of all-electric
16 commercial vehicles. We are currently developing
17 the ZEV commercial marketplace in the U.S.

18 SEV, which is Smith Electric Vehicles
19 Group, a North American corporation, will begin
20 producing the Smith Newton, of which you saw in
21 this short, brief video clip. That's anywhere
22 from 16-5 up to 26,000 pound gw, in mid-2009,
23 Based on its already popular model on the European
24 continent.

25 Our facilities in the midwest allow us

1 to implement the initial 150 vehicles that we'll
2 have to launch. Various pre-qualified launch
3 partner fleets within this timeframe.

4 Smith Electric Vehicles already has a
5 California footprint, including upright powered
6 access, actually based right here in Fresno,
7 California. Our mainstream engine and drivetrain
8 suppliers, which are based in the L.A. region,
9 along with our desire to build a service network
10 of employees and various introductory California
11 cities, of which that will come online into 2009.

12 So it's SEV's desire to introduce the
13 first 150 vehicles that we're bringing to the
14 California market beginning this summer. And with
15 the California Energy Commission's support, SEV
16 product portfolio will deliver the following
17 benefits to California:

18 One, vehicle operations. There's no
19 tailpipe emissions. There's no vehicle-based
20 diesel or gasoline fuel consumption. From the
21 manufacturing side, the California-based
22 components, supplier and support network buildout.

23 From a maintenance perspective, a total
24 of four moving parts as opposed to over 1000 in a
25 traditional-style vehicle. You have the energy

1 efficiency and environmental benefits. The energy
2 security.

3 And last of all, which we think is a
4 pretty critical part, is a fully commercialized
5 full production line of electric vehicles. You
6 saw two of them listed on there.

7 If you have access to your internet
8 later on today, you'll see that we also have a
9 collaboration with Ford Motor Company here in the
10 U.S. That was just announced yesterday on
11 autobloggreen and various nationwide newspapers,
12 specific to the transit connect, which is a 5000-
13 pound gw. That will be an all-electric car, made
14 in collaboration with Ford. And their service
15 network helps us to continue to expand.

16 So, as outlined today in today's public
17 hearing, we recommend that the commercial ZEV
18 program opportunity be included in the California
19 Energy Commission investment plan.

20 We're excited about coming into not only
21 the state, obviously as you saw in there you'd
22 recognize Tony Blair. He is obviously the ex-
23 Prime Minister for England. We are a UK-based
24 organization, but specifically a corporation that
25 has come here into the United States, bringing our

1 technology, bringing our R&D into the U.S.

2 And have various entities within the
3 state of California. We're excited about taking
4 all of our launch customers, which could be
5 anything, like in Europe with TNT, which is
6 similar to a FedEx-type style operation, to a DHL,
7 to a British Airways.

8 A commercial-type application. Some 50
9 miles. Dense urban populated areas. And we'd
10 like to take all of these prequalified customers
11 that have already taken vehicles or want to take
12 them, and push them here into California.

13 So when we think that there's a
14 viable -- it's a viable product. It's a viable
15 model. And as well, if we can have the support
16 behind us from the Energy Commission, we feel it
17 will make a good process to move here into
18 California.

19 So, with that I'll open up to questions,
20 or certainly -- I will add, if what you didn't see
21 on there, it just said Edison coming in 2007. So
22 you can kind of see the age of that.

23 But I do have a Smith Edison that's
24 outside of the building today. If you wish to
25 drive it at the end, it's a fully functioning,

1 full production vehicle that we have in Europe.
2 It will be made here in the States later on this
3 year. So if you wish to drive it, you're more
4 than welcome to.

5 Yes, sir.

6 MR. SPEAKER: Would you identify
7 yourself, please.

8 MR. CLEMENTS: John Clements, Kings
9 Canyon Unified School District. Have you
10 considered those for lunch delivery vehicles for
11 school districts, delivering meals out from
12 centralized kitchens?

13 MR. AUBRY: We've really not limited any
14 group or any customer. What we've gone through in
15 this past year, my team has really looked at
16 various business segments. Obviously the delivery
17 market is our perfect market, like the DHL. That
18 works very very well.

19 On the other side, it could be catering,
20 it could be beverages, it could be school
21 districts, it could be colleges. And so we've
22 gone right down the list of all these nationwide
23 companies that are really part of a logistics
24 team. They've got vehicles everywhere.

25 But obviously, with the size of

1 California and the size of the population, it's a
2 good fit. So we've identified various cities
3 throughout the state of California that we'd like
4 to implement the first vehicles in. So if it
5 includes schools, we'd certainly entertain the
6 idea.

7 They work perfect as long as you don't
8 want to say, hey, I want to go over-the-road
9 trucking and I want to go from Sacramento down to
10 L.A. in a day. That's not the program.

11 MR. OLDHAM: Joseph Oldham with the City
12 of Fresno. What is the typical range of say your
13 class 5 chassis?

14 MR. AUBRY: We really have between three
15 different options. Obviously because it falls on
16 mostly a Ford product, we don't change the
17 payload. So if you can't deliver anything, or if
18 you can't move anything it's a pretty worthless
19 product.

20 Outside of that, we limit the range in
21 order to capture -- we limit the speed, excuse me,
22 in order to capture the range. So typically, like
23 on the vehicle, if you see it outside, we limit to
24 about 60 miles an hour in order to reach a range
25 of between 100 to 150 miles on a single charge.

1 Now, we're working with companies, as
2 well, that are based here in Arizona from a fast-
3 charging perspective in order to, instead of
4 waiting for three and half to four hours to have a
5 full charge, be able to make that two or three
6 times in a given day, and really extend your
7 range.

8 MR. OLDHAM: Okay, so it's basically 60
9 miles per hour and about 120 to 150 miles range?

10 MR. AUBRY: It depends again on what you
11 want your range to be. If you --

12 MR. OLDHAM: Okay.

13 MR. AUBRY: If you're worried about
14 range, then you need to keep your speed down. If
15 you're not --

16 MR. OLDHAM: Yeah.

17 MR. AUBRY: -- so worried about range,
18 you can certainly increase your speed.

19 MR. OLDHAM: Well, that's pretty
20 reasonable for urban environment. Thank you.

21 MR. AUBRY: I think one of the big
22 challenges that you see for any electric vehicles
23 is one, production. How many full road-worthy
24 vehicles are commercialized today that are
25 physically out on the road. Not a lot.

1 And then certainly when you see the
2 vehicles that are in this size, meaning a gvw
3 capacity, you don't see a lot of them. And so we
4 really feel that we have a good commercial niche
5 market, but a very viable market, as well.

6 Yes.

7 MS. NEAL: (inaudible) -- Is there like
8 a quick charge or how do --

9 MR. AUBRY: How do you charge --

10 MS. NEAL: -- there's a commercial end
11 and then there's the individual commuter. Is
12 there a charging station that you also have that
13 taps into the grid, like, you know, I have those
14 for my camera, the batteries. I have one that
15 charges in 15 minutes and one that charges eight
16 hours.

17 I'm just saying, what kind of technology
18 do you have to support making sure that these run
19 efficiently?

20 MR. AUBRY: Sure. Well, keep in mind, I
21 think one of the biggest benefits of our model is
22 that is in a commercial atmosphere.

23 So, let's again take a DHL for example.
24 Every morning they leave their warehouse, it's
25 fully charged. They go out, and if you look at

1 their models, again I'm just using DHL, the
2 majority of their routes are sub 50 miles a day.

3 So, we would build the vehicle to have
4 at least an 80-mile range. They go out; they
5 leave; they make their route; they come back at
6 the end of the day and plug in at that same
7 location.

8 So, as opposed to the passenger model,
9 where if I just want a car that's going to be all
10 electric, I'd never know where I'm going to be;
11 every day is different. All throughout the given
12 day is different.

13 In this case, a DHL, again, for the
14 example. It's very controlled. Everything's
15 driven by data. We know and they know exactly
16 where the vehicle needs to drive.

17 So physically to the vehicle, itself, to
18 answer your question, everything is onboard. If
19 you want to take it offboard you can do that, and
20 you can have additional infrastructure. That we
21 don't provide.

22 Back to answer this gentleman's previous
23 question, we are working with offboard charging
24 companies, some of which are based in L.A., and in
25 California, to be able to help move the vehicle

1 around various locations. And, as well, to make
2 it have faster charging than even the four-hour
3 timeframe.

4 MR. HALL: Yeah, what type batteries are
5 you using? And the cost and life expectancy on
6 one of your typical applications?

7 MR. AUBRY: I knew that question was
8 going to come at some point.

9 (Laughter.)

10 MR. AUBRY: That's the million-dollar
11 question for today. Of the vehicle that you'll
12 see outside, certainly the cost of it is over 50
13 percent in batteries.

14 So everything that we'll put here in the
15 U.S. will all be lithium ion, iron phosphate
16 batteries. In the European continent we offer you
17 that option, or we do, as you noticed on the
18 screen, we offer the Zebra technology, which is
19 sodium nickel chloride.

20 If I show you some of the old models
21 that we used to make, they all used to be lead
22 acid.

23 You can kind of do deductive reasoning
24 that if you have a truck with big lead acid
25 batteries, it weighs so much, it only drives so

1 fast, and you have major limitations.

2 So the cost, part of what we have
3 identified in the need for bringing in these
4 vehicles into the commercial marketplace, again,
5 using a DHL for example, is they know it fits.
6 They know it works because it fits in their
7 routes. But they need the additional monetary
8 help to offset the first year's cost, initial
9 capitalized cost.

10 We've already identified what our costs
11 are going to be into year number two and year
12 number three. And our costs will already go down
13 by as much as 40 percent for the second year
14 beyond, only by based on economies of scale.

15 So, the product that you'll see outside,
16 if you get a chance to drive it, is extremely
17 robust. And we've had these products; they are
18 full production products in Europe. They will be
19 full production products here in the U.S. using
20 the same technology. And they've been out on the
21 road now for four-plus years.

22 MR. BRUNNELL: What's the battery life?

23 MR. AUBRY: Battery life, that's right.

24 I knew there was one piece that I was missing.

25 Battery life, the product, itself, whether it's

1 based on Ford or whether it's on our Smith
2 chassis, will be three years, 36,000 miles on the
3 regular chassis.

4 The batteries, we do a five-year,
5 100,000-mile warranty on. The expected life, we
6 would see, is between the seven- and ten-year
7 range. The only thing that really changes that,
8 in perspective, is again how many fast-charging
9 duty cycles that you have.

10 So, that ten-year range is what we would
11 say is comfortable.

12 Any other questions?

13 MR. SHEEHAN: What's the sticker price?

14 MR. WARD: Identify yourself, please.

15 MR. SHEEHAN: Tim Sheehan with the
16 Fresno Bee.

17 MR. AUBRY: What's the sticker price.

18 MR. SHEEHAN: Yeah.

19 MR. AUBRY: Typically it's 2X of what
20 you would normally pay for an equivalent and size
21 vehicle. That's the easiest way to put it in a
22 broad audience like this.

23 MR. SHEEHAN: And the bulk of that is
24 for battery?

25 MR. AUBRY: For batteries. And, again,

1 that's where we say automatically we know, based
2 off of our economies of scale, and I should
3 mention that, we're only going to create 500
4 vehicles.

5 So one of the things that we shared last
6 week was a lot of companies that have gone into
7 this EV market, of any size vehicle, they've come
8 out and said, we're going to produce 10,000
9 vehicles. And they go to the battery manufacturer
10 and the battery manufacturer is like, there's no
11 way; you know, we haven't put out five, let alone
12 10,000, so we can't make that happen.

13 We're coming to it with a very realistic
14 model, very limited in the production. Not
15 because we have limitations or because they have
16 limitations, but we want to be realistic.

17 Next year, we'll certainly grow that.
18 But based off of those economies of scales and in
19 those models we already know, through our battery
20 manufacturer, that that cost will go down
21 dramatically.

22 Any other questions?

23 Okay, thank you very much.

24 MR. WARD: For those of you that don't
25 know, DHL used to be a company that operated in

1 the United States.

2 All right, we have one more presenter.
3 This will be John Clements. He's the Director of
4 Transportation from the Kings Unified School
5 District.

6 He's going to show us a short CD, and
7 I'm not sure those that are on the phone will be
8 able to see this, but if you need a break it'll be
9 about a minute and a half.

10 MR. CLEMENTS: A minute and a half,
11 yeah; and then maybe some questions. I'm with a
12 little rural school district, 600 square miles if
13 you call that little, serving about 9000 students,
14 part of Fresno and Tulare County, just to the
15 south of us here.

16 And we've had the pleasure of working
17 with Sempra, I see Colby there, as they're our
18 utility provider. One-third of our fleet is now
19 CNG out of the 67 buses that we have.

20 And we've worked with the California
21 Energy Commission since 1993 on AB-35, -- Save
22 School Bus Program. And the fine folks here at
23 the San Joaquin Valley with the low-emissions
24 school bus program.

25 We're looking to form a partnership

1 currently in a project that we believe could very
2 easily be supported through AB-118 funding. A
3 partnership with our local City of Reedley and
4 surrounding school district neighbors to form what
5 would be a regional transportation center that
6 could offer educational opportunities, alternative
7 fuels, opportunities to renew and cook those clean
8 air particulate traps.

9 Let's run through this and then there
10 may be some questions. This is the complex. We
11 currently own the property. This is our goal to
12 build this complex.

13 (Whereupon, a video was played.)

14 MR. CLEMENTS: This would be a
15 combination joint city/corporate yard facility and
16 school district facility with alternative fuels,
17 located in the center, that would be shared, as
18 well as a common wash facility with recycling
19 water.

20 Throughout the complex we're planning to
21 offer solar-covered carports, busports, where you
22 could plug in your hybrid electric vehicle, plug
23 in your slow-fill CNG.

24 (Video playing.)

25 MR. CLEMENTS: It's a little choppy on

1 yours. That's okay, we hadn't planned for this,
2 had we?

3 (inaudible) buildings and also trees
4 that have a high carbon intake. The alternative
5 fueling center would offer biodiesel, ethanol
6 products, low sulfur diesel and CNG.

7 In addition to owning the 40 acres we
8 currently have also a million dollars coming from
9 CMAC funds which California Consultants been
10 working to obtain for us.

11 The plan is to actually have a
12 regenerating somewhere on there where we can
13 assist our truck neighbors, our ag neighbors and
14 actually regenerate their particulate traps. Also
15 offer those alternative fuels to our neighbors, as
16 well.

17 Thanks for the opportunity to share.

18 MR. WARD: Thank you, John. That's
19 interesting. I know this has been in the works
20 for quite a few years. I'm hoping that we can
21 make it to the finish line with this. This is
22 very ambitious, but it's an exceptional project
23 for this area, I think.

24 We have one more request, a blue card,
25 from Colby Morton (sic) from the environmental

1 affairs of the Southern California Gas Company.

2 MS. MORROW: Oh, I'm sorry, I just want
3 to provide comment.

4 MR. WARD: Oh, --

5 MS. MORROW: I didn't want to -- I just
6 wanted --

7 MR. WARD: Oh, no. Come on, make a
8 large presentation.

9 (Laughter.)

10 MS. MORROW: I can't sing, but I might
11 dance a little. Okay, fine. I'm sorry, I didn't
12 understand the blue card situation.

13 Is now an appropriate time for my
14 comment?

15 MR. WARD: If you'd speak into the
16 microphone and identify yourself --

17 MS. MORROW: Yes, sir; yes, sir. My
18 name is Colby Morrow; I'm with Southern California
19 Gas Company and San Diego Gas and Electric. And
20 it's really nice to see the CEC here in the
21 valley. I mean I looked at the sign-in and this
22 is a pretty much local audience, and we really
23 appreciate that you came here today.

24 On behalf of Southern California Gas
25 Company, and we're part of the California Natural

1 Gas Vehicle Coalition, which submitted written
2 comments on the plan, a couple of comments we'd
3 like to offer is that it is a two-year allocation.
4 And that we really support funding to meet the
5 2020 goal, because I know that, as you mentioned
6 in your slides, that there were some people who
7 were concerned that we should really put the money
8 towards the 2050 goals.

9 But yet we, you know, this is just two
10 years of the funding. And we really support the
11 2020 goals, which is a mandated goal in AB-32.

12 And that we really think that natural
13 gas is a great alternative fuel that is viable,
14 that it's currently available. And because of
15 kind of ambivalent policy direction in the state,
16 it just really hasn't been realized as much, the
17 possibility, as much as it could.

18 And that it really is a true bridge to
19 2050 goals with you can use it as natural gas
20 hybrids; you can use just like gasoline hybrids.
21 You can blend it. And hydrogen, CNG fuels.

22 And so if we look at funding for
23 infrastructure, CNG infrastructure that is still
24 needed in the state, and particularly in the San
25 Joaquin Valley. I drive a CNG Honda Civic. And

1 we really do need infrastructure.

2 My personal little request would be if
3 you can get all the public stations to upgrade to
4 the VISA cards instead of having to have a
5 different fueling card for all the different
6 stations, that would be a really wonderful thing
7 for me, personally.

8 But, just that the existing CNG
9 structure and new CNG infrastructure, the existing
10 can be upgraded to accommodate hydrogen. And the
11 new stations can be planned for hydrogen, which
12 really furthers the goals towards fuel cells and
13 other types of advanced technology.

14 And then the other big part of my
15 comments relate to biomethane, particularly here
16 in the San Joaquin Valley. And we had the
17 conversation with Samir and Dr. Kaffka about the
18 digesters at the dairy plants.

19 And while if you take that biomethane
20 and put it into the pipelines you're displacing
21 conventional and natural gas, say, for energy or
22 electric production. If you can utilize it onsite
23 to produce fuel, you are really getting a much
24 better greenhouse gas reduction.

25 And so if there's a lot of benefits, and

1 we really think that the Commission should look
2 further at biomethane. That it really wasn't
3 incorporated into the investment plan at its true
4 possibility.

5 And I think that's it. Thanks so much.

6 MR. WARD: Thank you. I know you meant
7 to say also that we might want to look at the
8 existing infrastructure we have for CNG so that we
9 can refurbish, upgrade and expand that. Because
10 many of the cylinders and the tanks needs to be
11 recertified. And that's true for the vehicles,
12 the school bus fleets, as well.

13 So that's something that is in our
14 investment plan. I think we do say biomethane in
15 the investment plan. And we're trying to feature
16 that more prominently. We do see that as an
17 excellent area. It takes a, typically in a low
18 carbon category fuel, which in and of itself, can
19 add up to 20 percent reduction of greenhouse gases
20 and criteria emissions. But it can move it up to
21 ultra, or possibly even supra ultra.

22 MS. MORROW: Right, and actually that, I
23 failed to mention that. Right now it's classified
24 as a biomethane, it's classified as an ultra low.
25 And we really do think it should be categorized as

1 a super ultra low. And we would like to see that.

2 As well as the company supports the
3 Clean Cities Coalition and training. And I just
4 think right now there's so much synergy with the
5 stimulus package. You know, 118, the Air
6 District, there's so many possibilities for
7 collaboration that we really think that we should
8 go forward with the technology that, you know,
9 exists.

10 And put that in place while research and
11 development of newer other advanced technologies
12 goes on.

13 MR. WARD: Look forward to The Gas
14 Company's participation in cost-sharing these, as
15 well.

16 Are there any other questions? Yes,
17 sir.

18 MR. OLDHAM: Thank you. Joseph Oldham
19 with the City of Fresno.

20 I'd just like to add a comment that the
21 City of Fresno, for years, has been investing in
22 alternative fuel infrastructure and technology.

23 One of the things that we're extremely
24 excited about, AB-118, is the opportunity to blend
25 many of these technologies in a broad scale.

1 A few years ago we invested in a plug-in
2 CNG hybrid electric refuse truck. And brought
3 that to fruition. And it's been operating very
4 successfully for about a year now. And we've been
5 very excited to see the potential of that
6 technology, and how effective it is in performing
7 its daily duties.

8 The drawbacks have been that it uses
9 lead acid batteries, which added a lot of
10 additional weight.

11 We're excited about AB-118 because we
12 see this as an opportunity to invest in some
13 advanced technologies that we think would really
14 take, as Colby mentioned, conventional alternative
15 fuels and elevate them to a much higher level of
16 reductions in both greenhouse gases and criteria
17 pollutants.

18 One of the challenges with biodiesel, of
19 course, is the NOx. But, if that biodiesel-
20 powered vehicle was a hybrid, then potentially we
21 could significantly reduce the overall NOx
22 emissions on this vehicle below what a
23 conventional-powered biodiesel vehicle would have.

24 And then, you know, thereby having some
25 further benefits, and allowing that biodiesel, as

1 a more viable alternative in the San Joaquin
2 Valley.

3 So, I guess my point would be that I
4 would just encourage the CEC, as they develop
5 their investment plan further, to look at these
6 possibilities of blending varieties of
7 technologies together to really get the best
8 opportunities for us as we go forward.

9 And we certainly support the AB-118
10 program and look forward to a very very positive
11 program for this.

12 Thank you.

13 MR. WARD: Thank you, Joseph.
14 Congratulations on your blending of a couple of
15 different technologies there. And I'm glad it's
16 working well for you. And can be optimized. And
17 that's what we're looking forward to.

18 I have to say that I've worked with the
19 City and County of Fresno for many years in
20 cooperative projects with John and Kings Canyon
21 and the Clean Cities, as well. I guess that's one
22 of the benefits for hanging around as long as I
23 have.

24 But this has been a very very fruitful
25 area for partnership with the California Energy

1 Commission. I'm pleased to be here, and it's our
2 pleasure to bring our roadshow here to Fresno.

3 Any other questions or comments today?

4 Yes, Bill.

5 MR. BRUNNELL: One more question. I sit
6 on my kid's finance committee for our school
7 district. And it was looking like there was no
8 way they would take any money away from education.

9 What are the chances, in light of how
10 dire the state's budget situation is, that they
11 could pull funds from this program?

12 MR. WARD: For what specifically?

13 MR. BRUNNELL: Well, the 120 million in
14 funding that you guys have, or 75 million for
15 2008/2009. Is there any possibility that that
16 funding can be moved from our group here?

17 MR. WARD: Oh, it could be pulled, being
18 taken away from the Energy Commission?

19 MR. BRUNNELL: Yes.

20 MR. WARD: I suppose in these budget
21 times, which are fairly unprecedented for
22 California, and for the nation, I think anything
23 is possible. And we certainly hoping that won't
24 happen.

25 I think it would be a shame because of

1 the economic development that we're hoping to
2 foster with the funding that we have.

3 Because what I'm hearing, not just here
4 at this roadshow workshop, but all the calls that
5 I get, this is very important funding for economic
6 development and to start a transition away from
7 petroleum fuels and through reduced greenhouse gas
8 and criteria emissions, as well.

9 It would be a real shame, because I
10 think this is an opportunity that provides
11 California cost-share, now the federal government
12 will be bringing funding, as well. So this is
13 kind of a synergism effect that I'm looking
14 forward to. And I think it would be really a
15 shame.

16 It would come at the exact wrong time,
17 and I don't think the funding amount that we have
18 in this program is on the scale that would
19 actually improve the chances for us to get a
20 balanced budget in California.

21 But I do think it is adequate seed money
22 for us to make a very large difference if we can
23 start economic development workforce training in
24 California.

25 Yes, Bob.

1 MR. HALL: Bob Hall, A-1 Alternative
2 Fuels. Since you're primarily taking comments, I
3 think, I have many customers that have a lot of
4 interest in CNG vehicles right now.

5 As many of us are aware, this vehicle
6 technology on CNG has far out-surpassed the
7 infrastructure issue. As somebody, also, that
8 drives a CNG vehicle, you know, I've had my -- a
9 number of times where I've had my fingers crossed
10 hoping, you know, if I just had a little bit more
11 heat, I hope it's warm enough and my pressure
12 stays up till I get to the next fueling station.

13 I think there really needs to be some
14 emphasis in this plan for infrastructure for CNG.
15 At least to get up to where the vehicles are now.
16 Because the performance and the reliability and
17 the upgrading of vehicles, like I said, again is
18 far, far surpassed the infrastructure.

19 MR. WARD: A good point, Bob. We are
20 going to be featuring infrastructure, not only for
21 our new infrastructure, but refurbishing and
22 expanding the capacity of existing infrastructure.

23 I share the experiences with you. I've
24 been close to out of fuel on many different
25 alternative fuels over my lifetime. And

1 infrastructure is very important to me.

2 I've been in infrastructure program in
3 the past. This is something that's going to be
4 very important. I think it's the bricks-and-
5 mortar investment that provides a platform for
6 development of increasing the number of vehicles
7 and fleets and the usage. Therefore --
8 absolutely.

9 So I think it is a good sound
10 investment, one we can cost-share with other
11 participants and stakeholders. I think it's
12 excellent.

13 MR. HALL: Peter, they're not coming to
14 Reedley. I take VISA, MasterCard, American
15 Express. And my arrangement, we can meet your
16 fuel needs thanks to grants from the Energy
17 Commission, again, and several other sources.

18 (Parties speaking simultaneously.)

19 MR. HALL: Well, I don't know, I was
20 down to 1.95 the other day, so --

21 MR. WARD: So, Bob, John, Colby, John.

22 (Laughter.)

23 MR. WARD: I'm glad we've had this get-
24 together.

25 Any other questions or comments?

1 Well, on behalf of the Energy Commission
2 I really want to thank you all for coming. This
3 has been educational for me and I really
4 appreciate all your interest.

5 Please stay tuned to our process because
6 we do want to be an effective element that can
7 bring some transition to the central valley, as
8 well.

9 Thank you, all.

10 (Whereupon, at 11:37 a.m., the workshop
11 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 Staff Workshop; that it was thereafter transcribed into typewriting.

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

IN WITNESS WHEREOF, I have hereunto set my hand this 13th day of February, 2009.

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