

California Energy Commission

DOCKETED**14-IEP-1B****TN # 3010****APR 16 2014**

COMMITTEE HEARING

BEFORE THE

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT

COMMISSION OF THE STATE OF CALIFORNIA

In the matter of,)
) Docket No. 14-IEP-1
Integrated Energy Policy)
Report (IEPR))

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

THURSDAY, MARCH 27, 2014

10:08 A.M.

Reported by:

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Assemblymember Nancy Skinner, 15th Assembly District

Senator Fran Pavley, 27th Senate District

Cliff Rechtschaffen, Governor's Office

Randy Roesser, Deputy Director for Fuels and
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Laurie ten Hope, Deputy Director for Energy Research &
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1 P R O C E E D I N G S

2 MARCH 27, 2014

10:08 A.M.

3 MS. RAITT: Good morning. Welcome to today's
4 IEPR workshop on Transportation. We'll go ahead and get
5 started.

6 This kicks off the development of the 2014 IEPR
7 Update. I'm Heather Raitt, Lead for the IEPR. And I'll
8 just begin by going over a few of the usual housekeeping
9 items.

10 Restrooms are in the atrium. Please be aware
11 that the glass doors next to the restrooms are for
12 staff, only, and an alarm will sound if you try to exit
13 that way.

14 The snack room is up the atrium stairs, on the
15 second floor, under the white awning.

16 If there's an emergency and we need to evacuate
17 the building, please follow staff to Roosevelt Park,
18 which is across the street and diagonal to the building,
19 and wait there until it's safe to return.

20 Today's workshop is being broadcast through our
21 WebEx conference system, so you probably should be aware
22 that we're being recorded.

23 We'll post the audio recording in a couple days
24 and a written transcript will be posted on our website
25 in about three weeks.

1 I'll briefly go over our agenda. We have a
2 number of distinguished speakers today. This morning
3 we'll have opening comments from the Commissioners, and
4 then we'll hear from Commissioner Scott, Members of the
5 Legislature, the Governor's Office, and then Energy
6 Commission Staff before breaking for lunch.

7 We'll break for lunch for about an hour at
8 noon -- or excuse me, at about noon, for an hour.

9 And when we come back we'll hear from a panel of
10 transportation experts. And at the end of the day we'll
11 open it up for public comment and questions.

12 We're asking parties to limit their comments to
13 three minutes during the public comment period. We'll
14 take comments, first, from those in the room, followed
15 by folks participating by WebEx, and then for folks
16 participating by phone-in, only.

17 For those of you in the room who'd like to make
18 comments, please fill out one of these blue cards and
19 give it to me sometime this morning or this afternoon.

20 And then when you're called upon to speak,
21 please come up to the center podium and speak into the
22 microphone. It's helpful to give your business card to
23 our court reporter.

24 For WebEx participants, you can use the chat
25 function to tell our WebEx coordinator that you'd like

1 to ask a question or make a comment during the public
2 comment period, and we'll either relay your question or
3 open your line at the appropriate time.

4 For phone-in only participants, we'll open your
5 lines after we've taken comments from the in-person
6 folks and the WebEx participants.

7 Materials for this meeting are available on the
8 website and hardcopies are on the tables, at the
9 entrance to the hearing room.

10 Written comments on today's topics are
11 encouraged and due at the close of business on April
12 10th.

13 The workshop notice, which is posted on our
14 website and also available on the table, provides
15 instructions for how to submit written comments.

16 And with that, I'll open it up to the
17 Commissioners for opening remarks. Thank you.

18 COMMISSIONER SCOTT: Good morning. Thank you,
19 Heather.

20 Well, good morning everybody and welcome. I'm
21 really excited to have you with us here today at the
22 first workshop for the 2014 Integrated Energy Policy
23 Report update.

24 I am Janea Scott. I'm the Lead Commissioner for
25 the 2014 IEPR update.

1 And I'm joined on the dais here by Commissioner
2 Karen Douglas.

3 And we'll have some Assembly Members and
4 Senators joining us as they arrive around 10:30.

5 And it's a pleasure to have you here with us,
6 today, to kick off this IEPR update, which is going to
7 focus a great deal on transportation-related issues.

8 I'm excited about this not only because I'm the
9 Lead Commissioner for Transportation, and I oversee the
10 Commission's Alternative and Renewable Fuel and Vehicle
11 Technology Program, but also because transportation is
12 such an important area that we need to focus on if
13 California is going to meet all of its energy, clean air
14 and climate goals.

15 The recent passage of Assembly Bill 8 reaffirms
16 California's commitment to cleaning up our
17 transportation sector.

18 In addition to the incentive funding being
19 provided, California currently has a strong set of
20 government policies and legislation for greenhouse gas
21 emissions reductions under AB 32, the Low Carbon Fuel
22 Standard, the Governor's Executive Order for Zero
23 Emission Vehicles, and the ZEV Mandate, and some
24 petroleum displacement goals.

25 Over the course of the day I'm looking forward

1 to hearing from a broad set of folks about their visions
2 for how we transform our transportation sector,
3 including what types of achievements we would like to
4 see and how we should define success.

5 I'm really interested in your perspectives, and
6 to listening, and learning today.

7 So, with that I'm going to stop the introductory
8 remarks and turn it over to Commissioner Douglas.

9 COMMISSIONER DOUGLAS: Good morning everyone.
10 I'd like to join Commissioner Scott in welcoming all of
11 you to the Energy Commission.

12 I'm also very excited to be here. Sometimes we
13 get really focused in, like lasers, on our dockets, and
14 our subject matter, and assigned responsibilities. And
15 it's a pleasure through the IEPR, especially, to have
16 this opportunity to work with Commissioner Scott and
17 kind of dive into a broader set of issues, and
18 especially transportation issues.

19 I had the please in my first two years on the
20 Commission of working with Commissioner Boyd, in the
21 first two years, the really formative years of this
22 program at the Energy Commission, and with a number of
23 staff who are also sitting here today, who were kind of
24 with us through the very early days. It's been a real
25 pleasure to see how this program has evolved, and

1 strengthened.

2 And with the reauthorization of the program, and
3 with Commissioner Scott's leadership, and the
4 participation of everyone here it is really poised to
5 take the State much further in terms of our policy
6 goals, and to bring great benefits to Californians.

7 So, I'm very excited to be here and I'll turn
8 this back to Commissioner Scott.

9 COMMISSIONER SCOTT: Okay, so I am going to
10 start with an update for you on where we are with the
11 Alternative and Renewable Fuel and Vehicle Technology
12 Program here, at the Energy Commission.

13 Can I use this here? Okay, what do I point it
14 at? Oh, I see. There we go, okay.

15 So, this is probably not news to anybody in the
16 room, but California is sort of a nation state here, and
17 we've got a population of almost 40 million people. We
18 are the eighth largest global economy. That kind of
19 wiggles up and down a little bit depending on what day
20 you're looking, what study you're looking at.

21 We're putting out about 450 million metric tons
22 of greenhouse gas emissions, and that makes us the tenth
23 largest emitter on a global scale.

24 And here, in California, transportation accounts
25 for about 40 percent of all of the greenhouse gas

1 emissions.

2 We've got about 27 million vehicles on the road
3 and our annual fuel consumption is about 18 billion
4 gallons of fuel.

5 I wanted to highlight for you some of
6 California's policy goals and objectives that I
7 mentioned in my opening remarks. And these are what's
8 driving us to take a look at transportation, and trying
9 to figure out why we need to make the transformation in
10 our transportation technology towards cleaner and zero
11 emission technologies.

12 And we've got greenhouse reduction goals. We
13 have petroleum reduction goals. We have an in-state
14 biofuels objective. We've got a Low Carbon Fuel
15 Standard. We have -- that's actually a Federal policy
16 here, but the renewable fuel standard, too.

17 We've got some air quality goals. We're trying
18 to make an 80 percent reduction in the nitrogen oxides
19 that come from vehicles by 2023.

20 Governor Brown's Zero Emission Vehicle Executive
21 Order, which calls for one million electric vehicles on
22 the road by 2020, and 1.5 million vehicles on the road
23 by 2025.

24 So, the Alternative and Renewable Fuel and
25 Vehicle Technology Program is -- this was created under

1 AB 8, and amended under AB 109, and then just recently
2 reauthorized by AB 8.

3 Through the years we have invested more than
4 \$400 million into transforming California's
5 transportation system. It's gone into more than 250
6 projects to date.

7 And the program allows the Energy Commission to
8 invest up to \$100 million annually into these projects.

9 On the right-hand side of the screen, what I
10 have here, to show you, is a map that we have put up on
11 our webpage that shows where all of the projects are
12 located across the State.

13 We're currently working on adding some
14 additional functionality to that map, which we plan to
15 debut at our Business Meeting in April, so stay tuned.

16 It's got the address down here at the bottom for
17 the map, and so I hope you'll go there and check it out.

18 So, Assembly Bill 8, as most of you probably
19 know, extends the Alternative and Renewable Fuel and
20 Vehicle Technology Program, in addition to several other
21 transportation-related programs, through January 1st,
22 2024.

23 And the purpose of it, right out of the statute
24 is, "To develop and deploy innovative technologies that
25 transform California's fuel and vehicle types to help

1 attain the State's climate change policies".

2 And so what we have done over the years is
3 invested in a portfolio of projects that have the
4 potential to be transformative.

5 Sorry about that, this is a little bit of an eye
6 chart but, hopefully, you can see it on your paper copy.
7 We've also got copies of it up on the webpage.

8 And it just shows you, across the categories,
9 the types of investments that we have made in
10 alternative fuel production, in the infrastructure that
11 goes along with alternative fuels, in advancing some of
12 the technologies, and that includes everything from
13 natural gas vehicle development, medium- and heavy-duty
14 electric vehicle development, trying to do some advanced
15 technology demonstrations.

16 And then a broader, kind of catchall category
17 that we call related needs and opportunities, and that
18 covers workforce training, some fuel standards,
19 manufacturing. It's a pretty broad category.

20 But this kind of shows you the cumulative
21 funding to date and the number of projects that we have
22 together.

23 And so, now I'd like to talk to you a little bit
24 about some of the program successes.

25 So, our program has helped us to deploy electric

1 vehicle charging infrastructure to support the drivers
2 of electric vehicles today.

3 And as you can see from the chart, that's about
4 7,700 charge points. And this breaks down, for you,
5 where those charge points are.

6 And the green shows you the ones that are
7 installed and the blue shows you the ones that are
8 funded, but planned, so those are going to be installed.

9 And it's got level one and two, and it also
10 shows you the DC fast chargers.

11 We've also funded ten plug-in -- oh, no, thanks.
12 We've also funded ten plug-in electric vehicle readiness
13 planning grants. And those help the regions throughout
14 the State plan for the plug-in vehicle deployment for
15 new charging infrastructure, and for permit
16 streamlining.

17 We also host phone calls for those folks, and so
18 they're able to exchange data and information, exchange
19 lessons learned, give each other helpful tips on, oh, we
20 had this happen in our region and this is how we dealt
21 with it. And so, they can share information with each
22 other across this.

23 Four other planning grants have also been issued
24 for multiple alternative fuels. And one has been issued
25 specifically for hydrogen in early deployment area for

1 fuel cell electric vehicles.

2 The next slide, please. The program, the
3 Alternative and Renewable Fuel and Vehicle Technology
4 Program, also supports the zero emission vehicle goals
5 that I mentioned; the Governor's goal of having one
6 million electric vehicles on the road by 2020, and 1.5
7 million electric vehicles on the road by 2025.

8 And so, about \$20 million of the program's
9 allocations have gone to help with the Air Resources
10 Board Clean Vehicle Rebate Project. And that's funded
11 about 9,000 incentives for the battery-electric vehicles
12 and the plug-in hybrid electric vehicles.

13 There was also an addition \$24.5 million that
14 was transferred from our program fund over to the Air
15 Quality Improvement Fund, which again the Air Resources
16 Board manages. And that is anticipated to help us cover
17 an additional 12,000 or so of vehicle incentives.

18 The program is building a foundation for
19 hydrogen fueling stations. Right now, we have funded
20 about 17 stations, and those are in existing awards.

21 We have one, if you look at the picture down
22 here on the bottom right, it's in Diamond Bar, and it's
23 under construction. And so, we're really delighted
24 about that, to see this project moving forward.

25 We've got five station upgrades that have been

1 funded. And we also helped fund the AC Transit bus
2 station.

3 We have a current solicitation that is -- the
4 solicitation is closed, but we're in the process of
5 reviewing the applications that we got. And it's about
6 \$30 million, and we anticipate that that will fund about
7 11 or 12 new stations.

8 It's also going to help provide some operation
9 and maintenance for the stations so that folks will be
10 able to -- well, it's to help with the transition while
11 we're waiting for the additional fuel cell cars to get
12 on the road.

13 Some of the other things that we've funded under
14 the hydrogen fueling stations are working with CDFA,
15 Division of Weights and Measures.

16 And really, what this is about is making sure
17 that if you think you're getting one kilogram of
18 hydrogen fueling that you actually are getting one
19 hydrogen -- one kilogram of hydrogen.

20 And we helped with the UC Irvine Street Model,
21 and with some of the South Coast Air Quality Management
22 District's Regional Readiness Projects.

23 The Energy Commission's Alternative Renewable
24 Fuel and Vehicle Technology Program is also helping us
25 to advance low-carbon biofuels. In this category, to

1 date, we've invested over \$90 million.

2 It's 34 projects that are going to expand the
3 reduction of low-carbon biofuels. More than 20 projects
4 are going to primarily waste-based feedstocks. And this
5 is going to be capable of the potential to produce more
6 than 36 million gallons per year of the biofuel
7 production capacity by 2017.

8 And if you go to the next slide, I have an
9 example of one of those projects for you. It's the
10 Buster Biofuels' Commercial Project.

11 We awarded Buster Biofuels over \$2.6 million to
12 install and operate a commercial scale biodiesel
13 facility that will divert nearly 5.65 million gallons
14 per year of used cooking oil, while locally producing 5
15 million gallons of ASTM quality biodiesel transportation
16 fuel per year.

17 This will displace petroleum diesel fuel and
18 increase in-state biofuels production. The project is
19 expected to increase the cost efficiency associated with
20 the production, distribution and use of biodiesel in the
21 San Diego regional market.

22 This project is estimated to produce 28 full
23 time contractual jobs and 16 to 18 full time jobs
24 through the operation of the facility.

25 And I just want to pause and welcome Senator

1 Pavley. Hello.

2 The next slide, please. The Alternative and
3 Renewable Fuel and Vehicle Technology Program is also
4 going to help accelerate fleet turnover with natural gas
5 vehicle incentives and infrastructure.

6 We've invested over \$17 million in this
7 infrastructure and over \$30 million for the vehicle
8 incentives.

9 And this works out to be about 62 fueling
10 stations for compressed or liquefied natural gas. A lot
11 of this is going towards school districts to help them
12 with their infrastructure so that they can transition
13 from higher polluting buses to cleaner buses.

14 And we've also provided incentives to help speed
15 the adoption of more than 1,000 natural gas vehicles.

16 And so here's an example of one of the natural
17 gas projects. It's the Bear Valley Unified School
18 District. And this is a -- we awarded \$300,000 to
19 install a new compressed natural gas fueling station to
20 service the district's existing natural gas-fueled
21 school buses, and to allow the district to acquire more
22 natural gas-fueled buses.

23 The Bear Valley Unified School District's CNG
24 buses are currently refueling at the Rim of the World
25 School District, which requires a 68-mile roundtrip to

1 refuel.

2 By being able to fuel its own fueling station,
3 by installing its own fueling station, the district will
4 save money on both travel time to refuel and the cost of
5 the fuel.

6 The fueling can be done overnight and the
7 vehicles will be full the next day.

8 The proposed system also has a fast-fill option
9 for other school district buses traveling into the
10 valley or for midday fills.

11 On average, a school bus in California can emit
12 more than 13 pounds of particulate matter and 460 pounds
13 of smog-forming pollution each year. So, replacing a
14 1988 school bus with a new CNG bus can reduce pollution
15 by 75 percent.

16 The CNG buses can also reduce diesel bus
17 emissions of the smog-forming pollutants by
18 approximately one-third.

19 So, the next slide, please. The Alternative and
20 Renewable Fuel and Vehicle Technology Program that we
21 run here at the Energy Commission is also incubating
22 innovation in medium- and heavy-duty advanced technology
23 vehicles.

24 We've gotten 28 projects that demonstrate these
25 technologies. And it's all across the range. It's

1 advanced natural gas engines, it's electric, it's
2 hybrid-electric, it's fuel cells.

3 And we've also put in about \$50 million to help
4 design, develop and deploy the medium- and heavy-duty
5 range, extended in all-electric drive.

6 And this electric vehicle that you see here, the
7 UPS truck, is something that's made by Electric Vehicles
8 International. They're in Stockton. And they
9 manufacture the electric motor that goes into the truck
10 body. And they're deploying these trucks all around
11 Northern -- probably all around California, but the ones
12 that I see most often, anywhere, are the ones that drive
13 around here in Sacramento.

14 The next slide, please. So, the program also
15 helps to support manufacturing in California. We've got
16 18 manufacturing -- we've funded 18 manufacturing
17 projects.

18 Most of these have been related to the electric
19 drive related batteries, their components in their
20 vehicles.

21 And one of the ones that I'd like to highlight
22 for you is the Boulder Electric Vehicles. We awarded
23 that \$3 million to design and construct a 20 million --
24 I'm sorry, 20,000 square foot manufacturing facility in
25 Los Angeles to produce medium- and heavy-duty all-

1 electric drive trucks and buses. And, actually, that's
2 in your district, Senator Pavley.

3 There are four models, including an electric
4 delivery van, a 15-passenger shuttle, a service body,
5 and a flatbed. They are all light weight, all-electric,
6 and can travel 100 miles on a single charge.

7 Boulder Electric Vehicles has sold 50 vehicles
8 so far. And the cost per truck is approximately
9 \$150,000, but it will pay for itself within three years
10 with diesel savings.

11 Boulder Electric Vehicles estimates that it will
12 be able to produce up to 6,000 trucks, or 6,000 buses
13 per year, with an annual savings of 1.2 billion pounds
14 of CO2 per year, based upon the figures for direct
15 replacement vehicles for typical diesel-powered trucks.

16 This project is estimated to create about 15
17 jobs during the plant facility improvements and up to
18 300 jobs when the plant is fully functioning with three
19 shifts.

20 The next slide, please. Another thing that our
21 program does is align clean technology investments with
22 economic development. And so we are investing in
23 workforce training agreements. We've put about \$25
24 million into 39 agreements.

25 That's helped provide training for about 12,000

1 individuals and more than a hundred businesses and
2 municipalities to support all aspects of the hybrid, the
3 hydrogen, CNG, LNG and biodiesel technologies.

4 We've also provided awards to community colleges
5 in Northern, Central and Southern California for the
6 development of their curriculum, Training the Trainer
7 Programs, and training materials development and
8 essential equipment needs.

9 The next slide, please.

10 I'd like to welcome Cliff Rechtschaffen from the
11 Governor's Office.

12 So, here's an example of one of our workforce
13 training and development projects. This is about a
14 million dollar grant.

15 And the funding is used to provide training and
16 maintenance in the repair of energy efficiency
17 equipment, technical documentation and specifications,
18 test equipment and procedures, and sustainability
19 management systems that will capture industry-wide best
20 management practices in planning, operations,
21 procurement, administration, construction and human
22 resources under one system.

23 The employment training panel funds support this
24 skills upgrade so that the workers can maintain and
25 improve the quality of service on existing rail and bus

1 lines, and initiate and maintain service on expanded
2 rail lines.

3 The training supports only the training -- only
4 the portion of the training that is needed for the
5 people to know how to work on the new green vehicles and
6 equipment.

7 And it helps California transit agencies
8 continue to be a role model in clean public
9 transportation innovation for the rest of the country.

10 So, on the next slide, please, these are the
11 jobs that the Alternative and Renewable Fuel and
12 Technology Program has helped create.

13 And this is just -- the numbers here are an
14 estimate that we provided in our 2013 Integrated Energy
15 Policy Report.

16 We got this, the staff reached out to all of the
17 188 or so companies that we had funded with projects,
18 and asked them to tell us how many jobs that they
19 thought their projects would support, and so that's what
20 you see here.

21 I'd like to welcome Assemblymember Perea. Thank
22 you for joining us.

23 And so, this is where the jobs numbers came
24 from. But it's about 6,000 jobs and so we're proud that
25 the investments that the Alternative and Renewable Fuel

1 and Vehicle Technology Program has made, or is helping
2 to create jobs here in California.

3 And the next slide, please, and it's my last
4 one. The other thing that the program has really been
5 doing is we're trying to engage a broad set of
6 successful applicants.

7 So, in most instances this program is always
8 over-subscribed, but what we're doing is we're
9 continually striving to reach broader audiences.

10 And Randy Roesser, from the Fuels and
11 Transportation Division is going to talk about that a
12 little bit in his presentation and with Laurie ten Hope
13 at the end of the morning.

14 We host pre-application workshops and we do
15 those to help people answer questions that they might
16 have, to give people additional information that they
17 need to submit successful proposals.

18 We also do post-solicitation debriefings for
19 anyone who wants one. So, if you had a terrific winning
20 proposal, if you had a proposal that didn't quite make
21 it this time, you can come back and talk to the Energy
22 Commission and we'll walk you through exactly what was
23 in your proposal, things that we think could be
24 improved.

25 And so, again, we're trying to just work hand-

1 in-hand with folks to figure out how to continue to have
2 a broad set of successful applicants.

3 Our investment plan meetings, which are how we
4 decide how to spend the \$100 million that comes to us
5 each year, are open to the public. And so, people have
6 a chance to provide us comments both at meetings, or in
7 writing.

8 We oftentimes have workshops for the
9 solicitation design -- good morning -- so that we have
10 an opportunity to hear from folks about what's the best
11 way for us to design a solicitation so that we're really
12 capturing the portion of the market that we're trying to
13 do, that we're really going to get a set of proposals in
14 for us to continue to advance transportation.

15 And so, we're constantly reaching out to folks.
16 A good example of that, I think, are the hydrogen
17 workshops that we hosted over the summer. We held
18 several of those to try to figure out the best way to
19 design a successful hydrogen solicitation.

20 It's the one that I mentioned a little bit
21 earlier and it is -- we had lots and lots of
22 applications come in, and so we feel that that worked
23 quite well.

24 And we always want to try to apply the lessons
25 learned from previous solicitations into new

1 solicitations. So, we're working always to constantly
2 improve, to constantly be reaching out to a broader set
3 of folks, to listen to them and to give them information
4 about how to be successful applicants, and also how to
5 design well-designed solicitations.

6 And so here, you can see at the bottom one
7 project that I'd like to highlight, the San Joaquin
8 RTD's all-electric bus.

9 And that's something that they were really
10 excited about, that we here at the Energy Commission
11 were really excited to have an opportunity to help fund.

12 They've got two of those on the road in
13 Stockton. And they are terrific buses and they're
14 helping to provide the cleaner air that we need in the
15 San Joaquin Region.

16 So that is -- that's me. And I'd just like to
17 good morning, welcome Assemblymember Skinner and thank
18 you for joining us.

19 And so what we'll do, since we have you all
20 here, let's turn to the next portion of the workshop.
21 And welcome.

22 Give me just a minute here. So, let me -- you
23 probably know all of our wonderful Legislators, but let
24 me just welcome them and say thank you so much for
25 coming to participate in our workshop. But also, thank

1 you so much for your terrific leadership and the
2 wonderful work that you have done both in authoring and
3 championing AB 8 and helping to get that across the
4 finish, shepherd that across the finish line.

5 It's just something that we are delighted. It's
6 just a terrific celebration. We appreciate your
7 leadership, your commitment and your dedication to that.

8 And why don't I read the bios and then what
9 we'll do is Commissioner Douglas and I just thought we
10 might ask you some questions and have a little bit of a
11 dialogue. Okay, great.

12 So, Assemblymember Perea represents the 31st
13 District in the California State Assembly, which
14 encompasses Western Fresno County in the Central Valley.

15 He was elected to the California State Assembly
16 in November 2010 and is currently serving his second
17 term in the Legislature.

18 During his first term in the Legislature,
19 Assemblymember Perea chaired the Assembly Committee on
20 Revenue and Taxation, and currently chairs the Assembly
21 Committee on Insurance.

22 Some of Assemblymember Perea's legislative
23 accomplishments are within the areas of healthcare,
24 energy, air quality, alternative fuels and clean
25 drinking water.

1 In 2013, Assemblymember Perea successfully
2 authored AB 327, California's first comprehensive
3 electric rate reform bill since the 2001 energy crisis.

4 Assemblymember Perea also brought a diverse
5 coalition together to pass AB 8, which allocates \$2
6 billion into the alternative fuel infrastructure and
7 electric vehicles, and lowers the cost to farmers and
8 truckers who choose cleaner burning vehicles.

9 So, welcome Assemblymember Perea.

10 Assemblymember Skinner represents the East Bay
11 Cities that stretch along the I-80 corridor from
12 Hercules to Oakland.

13 She serves as the Chair of the Assembly Budget
14 Committee and previous served as the Chair of the
15 Assembly Rules Committee.

16 A graduate of UC Berkeley, Assemblymember
17 Skinner was active in Cal student government, served on
18 the Berkeley City Council, and the East Bay Regional
19 Park District Board.

20 She is a former small business owner and the
21 founder of an International Association of Cities and
22 Local Governments for Sustainability.

23 Assemblymember Skinner has an extensive
24 background in climate change, including being the
25 Director of the Cities for Climate Protection Campaign

1 and Coordinator of the 2005 Climate Action Summit
2 between CEOs, Governor Schwarzenegger, and the UK Prime
3 Minister Blair.

4 Welcome, Assemblymember Skinner.

5 And here, Senator Pavley; Senator Pavley has
6 focused on energy and environmental issues throughout
7 her career as a Legislator.

8 In 2002, she authored a law limited greenhouse
9 gas emissions from new cars and light trucks, creating a
10 model for national standards that were adopted eight
11 years later.

12 In 2006, she authored the landmark Assembly Bill
13 32, which set a long-term cap on statewide greenhouse
14 gas emissions.

15 In 2013, Senator Pavley was the co-author of a
16 law to invest \$2 billion in successful vehicle and fuel
17 technology, and air quality programs to improve air
18 quality and keep California at the forefront of the
19 transition to a clean economy.

20 She worked with the author, Assemblymember
21 Perea, and a broad coalition of stakeholders, including
22 environmental organizations, and the auto and clean
23 technology industries.

24 She also wrote a law to regulate hydraulic
25 fracturing and other oil extraction practices, for the

1 first time to ensure accountability for the
2 environmental and safety risks, and provide scientific
3 data to inform future policy decisions.

4 This year, Senator Pavley introduced Senate Bill
5 1125, which calls for long-term targets for reducing
6 climate pollution beyond 2020.

7 A native of Los Angeles, Senator Pavley spent 28
8 years as a public school teacher. In 1982 she became
9 the first Mayor of the City of Agora Hills, and she
10 served four terms on the city council.

11 She was elected to the Assembly in 2000 and to
12 the Senate in 2008.

13 Welcome, Senator Pavley.

14 So, I feel like I've been talking a lot. Maybe,
15 Commissioner Douglas, would you like to throw the first
16 question out there?

17 COMMISSIONER DOUGLAS: Yeah, I think I will.
18 So, the first question that we have to ask our guests to
19 speak briefly, if you could, to your vision for this
20 program and how you'd like to see it go forward, you
21 know, what do you see as success in this program?

22 SENATOR PAVLEY: Age or what?

23 (Laughter)

24 SENATOR PAVLEY: Thank you. Thank you, Nancy.
25 Henry will be last then, right. Pecking orders.

1 Well, thank you very much for hosting this
2 workshop. Look forward to continue working with the
3 Energy Commission. It's doing an amazing job.

4 And I also wanted to take this opportunity to
5 thank Assemblymember Perea, in particular, for the
6 coalition and the teamwork we brought to AB 8. And so,
7 thank you very much. It was sort of a shared
8 authorship, with a lot of drama behind the scenes, which
9 we won't go into at the moment.

10 But the good news is \$2 billion of smart
11 investments over the next ten years can do amazing
12 things.

13 And so, one of my goals that I'm very interested
14 in is to help be a voice in the Legislature for what
15 you're doing here; we need to be engaged and informed.

16 We're always sort of second guessing how money's
17 being spent and things. But I am concerned that some
18 people will try to look for short term gains, without
19 getting the understanding of the smart investment in
20 long-term, breakthrough technologies or fuels.

21 If we're going to reach not only the 2020
22 targets, but moving forward 2030 and 2050, we need your
23 expertise and innovative ideas in order to look towards
24 the future.

25 And so, you know, we have this sort of cliché

1 saying, we don't pick winners and losers, we need to
2 look at investing not only in hydrogen fueling stations
3 and infrastructure, but also in biofuels and other
4 breakthrough technologies, and vehicle battery
5 technology is essentially critical.

6 So, I just wanted to take this opportunity to
7 thank you for your good work Commissioner Scott, and
8 Commissioner Douglas for putting this workshop together
9 to begin this discussion of let's move forward together.

10 COMMISSIONER SCOTT: Great.

11 ASSEMBLYMEMBER SKINNER: Oh, I've got to turn
12 that on.

13 Thank you all, also, for putting this together.
14 And I think my role in the effort of AB 8 was mostly to
15 monitor my -- not only my colleagues in the Assembly,
16 but perhaps some of our allies as Henry worked to
17 broaden the coalition and engaged some stakeholders that
18 some other folks might have been slightly nervous about.

19 I think I kept that nervous side calm because we
20 needed, well, their votes. The bill needed a two-thirds
21 vote and you wanted -- look, these programs benefit
22 everyone in California, everyone. And there's no reason
23 any sector should have at all been, you know, felt like
24 they were going to play either some kind of a leveraging
25 role, or a role where they didn't appreciate the benefit

1 to them.

2 But, you know, those kinds of dynamics happen
3 sometimes in the Legislature. So, Henry and I are
4 seatmates and we sit in the back. We're in the very
5 back row so we can kind of monitor. We know -- we watch
6 who's talking to who and so that's when I know that I
7 have to go over and whisper sweet nothings into
8 somebody's ear. But that's pretty much the lovely role
9 I got to play.

10 I'd say that the programs that AB 8 continued,
11 which is more than just the Carl Moyer, it's really the
12 advanced fuels and alt vehicles so, you know, AB 118,
13 also, the Air Quality Improvement Program.

14 These are all efforts in California that have
15 made our vehicles, obviously in addition to Senator
16 Pavley's excellent work, and then of course the work of
17 CARB and the work of our different air quality
18 management districts up and down the State, but we have
19 the cleanest vehicles and the cleanest fleets in the
20 entire U.S.

21 That said, we still have a serious problem
22 because we still have many, many areas of our State that
23 are out of -- nonattainment, and transportation is the
24 single largest source of our GHG emissions, and the
25 fastest growing.

1 So, we are approaching it from many levels.
2 We're looking at, obviously, trying to deal with the
3 length of trips, the number of trips, that sort of
4 thing, expanding transit.

5 But even those efforts, as we look in the
6 projections over time, as our population grows and just
7 different development patterns, we see that we are
8 continuing a trajectory of increased transportation
9 greenhouse gas emissions. And that's why this is so, so
10 essential.

11 So, I was really proud to be part of it. And
12 I'm sure you'll ask us some questions about our vision
13 and I'll express those later.

14 ASSEMBLYMEMBER PEREA: Great. Well, first,
15 thank you to the Commission for hosting this workshop
16 and for inviting us to be a part of it. I think this is
17 the first time that I know I've been invited to a
18 Commission, or an agency or department workshop to get
19 my input.

20 Usually, I'm reacting to something else, so it's
21 nice to be invited on the front end. So, thank you for
22 that invitation -- for this invitation.

23 And I'll just open up by thanking my joint
24 author for sticking it through the process in the
25 Assembly. And I want to thank Senator Pavley for the

1 leadership role she played in the Senate.

2 I'll just make this one political comment and
3 then I'll go into sort of, you know, a specific piece of
4 AB 118 that I'd like to have some input in.

5 But just to say I really believe that the
6 coalition of both Legislators and stakeholders that came
7 together on AB 8 should really be the model for doing
8 business in California.

9 Certainly, you know, no process and no product
10 is perfect. But I think when you can engage the number
11 and diverse coalition of stakeholders, as well as
12 members -- and I believe what really put this together
13 in the beginning was the ability for more moderate
14 Democrats, like myself, who come from moderate regions,
15 partnering with more progressive members really coming
16 together and agreeing around the goals and the vision,
17 and then working out the details as we worked through
18 the process.

19 I really think that is the model for getting big
20 things done in California. So, I was just honored to be
21 a part of it with such seasoned veterans in the
22 building.

23 But, specifically, to the vision of the program,
24 something I'd like the Commission to consider really
25 centers around the alternative fuel infrastructure.

1 I'd really like the Commission to really think
2 about how we use this funding in a way that will have
3 the most environmental or best environmental impact in
4 California.

5 And I would suggest that we consider, really,
6 one sort of big issue. And that is really look at our
7 nonattainment areas and how we can deploy the
8 alternative fuel infrastructure to encourage more
9 alternative-fueled vehicles in those regions.

10 Now, I represent a region that is --
11 economically, you know, it's very -- it's tough. And so
12 a lot of my constituents can't afford -- even with the
13 rebates they can't afford many of the electric vehicles
14 that are on the market today.

15 But I do think that if we invest in the
16 infrastructure in those regions and provide some greater
17 certainty that we will -- that drivers of alternative
18 fuels will have places to charge or to fuel up with
19 hydrogen, or whatever it might be, then I do think then
20 you encourage sort of the middle class within those
21 communities to maybe think differently about those
22 purchases in sort of the vehicle space.

23 And so, I would just encourage the Commission to
24 consider that.

25 And that comes from a place of I sat several

1 years as a board member of the San Joaquin Valley Air
2 Pollution Control District. And one of the things I've
3 learned, I learned as a member of the board is that
4 while we're doing a lot on stationary sources, and
5 working with ag, and doing everything that we can, the
6 real culprit are all of us who drive every day to and
7 front work, and to the grocery store and just in living
8 our daily lives.

9 So, we need to figure out how we get
10 alternative-fueled vehicles into the valley. And I know
11 it's very complicated, but that would be my pitch as far
12 as a vision for AB 118 funds and infrastructure money.

13 COMMISSIONER SCOTT: Thank you for that. I
14 think I will just note that one of the things we are
15 trying to do here is target some geographic regions of
16 the State.

17 It's a commitment that the Chair Weisenmiller
18 made on the EPIC Program and that I've also committed to
19 do with this Alternative and Renewable Fuel and Vehicle
20 Technology Program.

21 We're just kind of getting up and running on how
22 we would specifically target some of the areas of the
23 State, how we can do better outreach to make sure we're
24 including more women-owned businesses, minority-owned
25 businesses, disabled veteran-owned businesses as part of

1 that.

2 And then I think another component of the
3 program that we think about and is also really
4 important, especially on the issues that you raise, is
5 the work that we're doing on the trucks and the buses
6 because that starts to capture some of the freight and
7 the delivery. And it also starts to capture some of the
8 transit for folks who aren't able to drive a car.

9 But then it also helps bring down the overall
10 air quality in some of those areas. And so, those are
11 things that we're also thinking very much about.

12 And so, I very much appreciate that comment and
13 look forward to continuing to work with you on that.

14 Cliff, would you like to add anything to this
15 part or --

16 MR. RECHTSCHAFFEN: No.

17 COMMISSIONER SCOTT: Okay.

18 COMMISSIONER DOUGLAS: Any opening comment,
19 Cliff?

20 MR. RECHTSCHAFFEN: No.

21 COMMISSIONER DOUGLAS: All right, we'll ask you
22 questions later, don't worry.

23 COMMISSIONER SCOTT: We will.

24 One thing I thought might be interesting for us
25 to hear about, coming from such dedicated leaders as

1 yourselves, is what captured your interest as you were
2 shepherding this legislation? What made you think that
3 this is really something I want to work on and get
4 across the finish line?

5 ASSEMBLYMEMBER SKINNER: I'll start. I've been
6 working on this issue of how do we deal with
7 transportation emissions for a very long time and
8 authored, as one of the founders of ICLEI, Local
9 Governments for Sustainability.

10 One of our first projects from USEPA was focused
11 on this and we wrote, we did research and wrote two
12 publications. One was called, *Commuting in the*
13 *Greenhouse*. And we were trying to deal with, well, just
14 how to reduce the vehicle miles traveled for a commute
15 and also just the less fuel used per commute.

16 We then did a subsequent thing around trip
17 reduction strategies because back in the early nineties
18 there was a very huge effort towards employers and
19 others to do trip reduction.

20 And after that we ended up getting funding from
21 different -- DOE and a couple of others. And we
22 provided the first funding in the U.S. for fuel cell
23 buses.

24 We provided Chicago a grant and Chicago then,
25 through Ballard fuel cells, had the very first fuel cell

1 bus in the U.S.

2 And we also funded Santa Monica to do the first
3 car share program in 1993, I believe.

4 Anyway, so I've been working on this for a long
5 time. And making sure that California was still at the
6 forefront was very, very important to be because, you
7 know, we've learned subsequently that the commute trip
8 is really not always the most miles traveled by a
9 person with their vehicle. Often it's the errands and
10 the picking up the kids, and the various things like
11 that versus the commute trip.

12 So, we just need to get a lot better at
13 understanding how we can affect this issue of
14 transportation emissions.

15 And, clearly, land use is still a significant
16 portion. Though, obviously, now, advanced vehicle
17 technologies and fuels has got to be one of the main,
18 main focuses.

19 SENATOR PAVLEY: What inspires me for your
20 priorities for the next few year, and you mentioned it,
21 Commissioner Scott, is your work on the freight
22 component and modeling some clean technologies, and
23 things that can be used in freight.

24 Senator Lara has introduced a bill that I'm a
25 joint author with him on, on that component. And that

1 certainly dovetails very nicely with Assemblymember
2 Perea's priority of trying to maybe prioritize those
3 areas that are in nonattainment standards because it
4 all -- there's a reason for nonattainment. Not just
5 geography, but they're the major transportation
6 corridors.

7 So, whether it's in Los Angeles, or in the
8 Central Valley, trying to get a handle on freight and
9 goods movement, which is going to be increasing and
10 accelerating what -- how do we gradually transition
11 either to the fuel side or technology side on cleaning
12 up those vehicles.

13 And the other exciting program that you've
14 worked on so successfully is with school buses. I think
15 any time we can have what's called a win/win, sort of
16 win situation where we are not only cleaning up the air,
17 but reducing greenhouse gas emissions, and especially
18 reducing the health impacts to children, and elderly,
19 and those sensitive populations that has an incredible
20 support across the charts, all over California.

21 So, at the end of the day when you were doing up
22 at Big Bear area, on the school bus program, those
23 cleaner-fueled buses are also less expensive to run,
24 you're saving school districts money.

25 And by putting that fueling station there to

1 make it accessible, because that's sort of an isolated
2 location up at the top of the mountains above L.A.,
3 those are the kinds of programs that are incredibly
4 supportive.

5 And I wanted to take this opportunity to thank
6 you and brag about Boulder Electric. It's in
7 Chatsworth. Yes, it's in my district. But it's Boulder
8 Electric. Where did they come from? Boulder, Colorado.
9 Talk to them, why did they come here? Because of the
10 policies California passed, because we've created a
11 market for their innovation.

12 And they are doing some amazing work and
13 creating a lot of jobs, while working to clean up the
14 air, reduce greenhouse gas emissions. So, yes,
15 businesses do come to California because of our policies
16 and our innovation.

17 So, those would be some of my priorities for the
18 next few years, where do we get those win-win-wins
19 across the board?

20 COMMISSIONER SCOTT: Just add that, to me that's
21 one of the most exciting things about the program as
22 well, right, because that's exactly what we're trying to
23 do with the funding that we've put in here.

24 SENATOR PAVLEY: Thank you.

25 ASSEMBLYMEMBER PEREA: Okay, so I'll just say so

1 what captured my interest in the legislation and just
2 the issue is -- really just goes back to my time serving
3 on the air board and living in a region that has some of
4 the highest pollution rates in the country, that has
5 some of the highest asthma rates.

6 I mean, virtually, what strikes me about the
7 Central Valley is we're on -- we're on the top of a lot
8 of lists that a lot of people don't want to be at the
9 top of. And many of those lists deal with environmental
10 issues surrounded around air quality, water quality and
11 different issues.

12 So, you know, from a person perspective what
13 really has changed my world, since coming to the
14 Legislature, is I became a dad.

15 And I think when that happens you start looking
16 at the world in a very different way. And so, I'm in a
17 place where I have a vote, I have a voice, and I can be
18 part of a -- be part of good things and good policy.

19 And so, when I think about where my life will
20 be, both personally and professionally, back in Fresno
21 when this is all done, what inspires me to get involved
22 in issues like AB 8 and others are not just, of course,
23 the health of my family, but the health of my neighbors
24 and those that will rely on us as both Legislators, to
25 make sure we do the right thing in terms of policy and

1 you, as Commissioners, to implement that policy in a way
2 that's most beneficial to the most people.

3 It really got me excited about the opportunity
4 to work with AB 8 and, quite frankly, I enjoyed being
5 the floor jockey when Senator Kehoe carried the bill.
6 You know, having the opportunity to work a two-thirds
7 bill is something that I think every Legislator should
8 try.

9 (Laughter)

10 ASSEMBLYMEMBER PEREA: Because oftentimes you
11 won't be successful. But when you are, it's something
12 that you really appreciate and really understand how to
13 really drill down to what people are interested in, and
14 how you bring those coalitions together.

15 So, that's sort of my background and what led me
16 into AB 8 and that discussion.

17 COMMISSIONER DOUGLAS: So, let me throw a
18 question out. And to some degree I think all of you
19 have hit on this or have answered it.

20 But it would be really helpful to us to hear
21 from you how you would define success for this program,
22 if you think ahead a couple years, and especially if you
23 can think in terms of tangible achievements, tangible
24 changes.

25 You know, what sorts of things would you like to

1 see coming out of this program that would make you
2 think -- you know, that would really, for you, begin to
3 capture what you think of as success?

4 ASSEMBLYMEMBER PEREA: Well, for me, I define
5 success really on an equity basis and how the funds are
6 deployed in, not just equity in region, but making sure
7 that the funds are used where they have the highest
8 impact.

9 And so, it gets me back to my opening comments
10 around vision. I want to make sure the money goes where
11 it's needed the most.

12 And I think that ensuring that infrastructure
13 projects are -- as we look at the entire State and where
14 we're going to encourage alternative-fueled vehicles to
15 flourish, I think we need to take a look and ensure that
16 all of our regions are equally competitive in a way that
17 it's not just, you know, one part of the State that
18 receives the bulk of the benefit, and then you get
19 places like the Central Valley who have -- who are
20 chronically in nonattainment status, who then maybe get
21 sort of one or two sort of -- sort of the scraps off the
22 table as opposed to really taking a concerted effort to
23 say we know the region needs it, we know that we need to
24 encourage alternative-fueled vehicles in these areas if
25 we're really going to make, I think, even stronger

1 progress on meeting our federal attainment standards.

2 But we need to do it -- that's smart
3 economically, as well. I mean, I'm not asking anybody
4 to just throw money towards a certain region, but it
5 needs to be done in a very thoughtful and measured way
6 so that we can encourage more regions, like in the
7 Central valley, who may not be -- who may not have the
8 income to afford the cars right away.

9 But there is a segment of our population who
10 can, but if the infrastructure were there, then it
11 creates that encouragement for them to do that.

12 And so, I would define success in a way that
13 allows for these funds, specifically the infrastructure
14 funds, to be spent in the most equitable way possible
15 across the State.

16 ASSEMBLYMEMBER SKINNER: It's interesting, my
17 perspective on it is similar to Henry's, and that I'll
18 do a slight variation on it.

19 When we look at the data around who, in
20 California, is taking advantage of, and now I'm talking
21 now about passenger vehicles, of our sort of rebate,
22 it's been middle to upper income folks by and large.
23 Not exclusively, but by and large.

24 And some of the data on passenger vehicles --
25 well, actually, I think this data is beyond passenger

1 vehicles but, still, there's 10 to 15 percent of the
2 vehicles on the road that are responsible for about half
3 of the smog.

4 Now, smog and GHG emissions are not completely
5 equal. Meaning, for GHG it's, you know, a gallon of
6 fossil fuel with X amount of emissions, no matter
7 what -- just if you burn that.

8 Whereas the smog is much more dependent on the
9 type of engine and such like that.

10 But you still have to assume that that 10 to 15
11 percent vehicles that are responsible for the majority
12 of smog have got to have a big, significant amount of
13 GHG, too.

14 So, I'd like to drill in deeper and have more of
15 our rebate towards that category of the vehicles. And
16 maybe not just our rebate, but really focus this program
17 to getting that 10 to 15 percent of vehicles off the
18 road.

19 Now, we know amongst the passenger vehicles,
20 many of those are owned by low-income people. And just
21 a flat rebate on an EV is not going to -- is not going
22 to serve that.

23 So, if we can get at that -- those vehicles that
24 are contributing most to smog, which I think in many
25 cases are folks that are pretty low income, not only,

1 but I think it would be very beneficial from an equity
2 point of view and give us huge accomplishment in terms
3 of the reductions.

4 And I think that rather than the rebate for
5 the -- what I might call higher end EV, which I would
6 lessen even though there's -- you know, we want to drive
7 that market. I think the infrastructure will drive the
8 market.

9 I think many of, who are drawn to buy those
10 vehicles, are drawn regardless and we don't so much need
11 that per-vehicle rebate. We need the satisfaction or
12 the assurance that the infrastructure's there so that if
13 we need a charge, we can get it.

14 So, I guess around, you know, if we're buying
15 vehicles or taking them off the road, I want to focus
16 towards the ones with the most smog.

17 And if we're trying to support, say, EV
18 expansion, I'd go with the infrastructure.

19 SENATOR PAVLEY: All good comments that we can,
20 I think, all agree on.

21 A hundred million dollars the next ten years, I
22 suppose, is our sort of short-term focus, but with
23 really an eye to the future investment.

24 And just to add on to what they said, any time
25 we can accomplish cleaning up the air, as moving forward

1 in investment and cleaner fuels -- I thank you for your
2 good work on the low-carbon fuel standard and looking at
3 full life cycle analysis.

4 Because there is a direct correlation, as we
5 work collaboratively, together, to reduce greenhouse gas
6 emissions in mobile sources, and also criteria air
7 pollutants critically important.

8 So, continuing that investment in buses and
9 fleets. I'm really concerned about the dramatic
10 increase in truck, and freight, and goods movement.
11 Frankly, we're going to see more of it in the future, 5,
12 99 through the Central Valley, those are -- and I-80,
13 you can add trains to your list there, too, carrying
14 Tarzan's oil.

15 So, a lot of work needs to be done. But I don't
16 want us to be so afraid of the short-term, cost-
17 effective metrics that we don't invest in that future
18 technology.

19 I don't know how we get from 2020 goals of AB
20 32, to 2030, let alone 2050. It shows new technologies
21 are needed.

22 Now, as far as individuals riding cars, I agree
23 a hundred percent with Assemblymember Skinner and Perea,
24 we need to make more in investment for all owners of
25 vehicles. And be looking at not only the scrappage or

1 retirement program, and this is something CARB's working
2 on.

3 But I should just note for the record, one thing
4 I've been really impressed on the rollout of AB 32 is
5 the amazing relationship, working relationship between
6 CARB, the Energy Commission and the PUC. We're not
7 seeing the silos, we're seeing collaboration.

8 So, on the Scrappage and Replacement Vehicle
9 Program, the Scrappage Program's been fairly successful.
10 And you're right, Assemblymember Skinner, a small number
11 of drivers are 25 percent of the pollution problems.
12 But what's the replacement program?

13 Maybe it's electric cars, but maybe it's more
14 just fuel-efficient regular cars.

15 In our environmental caucus, that I Chair, last
16 week we had a man from the Central Valley, Mr. Ray Leon,
17 come in and talk about the difference between someone
18 who owns a 1995 Ford Explore and their fuel costs, \$400
19 to \$500 a month. But did the analysis, at the same
20 time, of how much greenhouse gas emissions that was, and
21 how much criteria air pollutants.

22 Then switch them to, let's say, a 2012 smaller
23 passenger car, it doesn't have to be a hydrogen car or
24 an electric car, and how you cut your fuel consumption,
25 but your bottom line budget by 50 percent or more, so

1 down to \$200 to \$250 a month.

2 That's disposable income that goes back into the
3 economy, cleans up the air, reduces greenhouse gas
4 emissions.

5 So, on the vehicle side, the Clean Car For All
6 Program that we're working on with CARB is trying to
7 accomplish those kinds of objectives. They're looking
8 at maybe some of those infrastructure and bigger --
9 bigger goals under the -- and I'm really excited about
10 looking at the types of fuels.

11 We're seeing success stories, or people coming
12 into our office who, because of the Low Carbon Fuel
13 Standard are making those investments because we're
14 creating a market.

15 And if you talk to people, if we get to our 2050
16 goals, that's going to have to be expanded even more, so
17 we're relying on the Energy Commission and your
18 expertise.

19 ASSEMBLYMEMBER SKINNER: I'm very glad, Senator
20 Pavley, that you pointed out the reduction to the
21 person, the cost reduction to the person. That was my
22 subtext, but I'm really glad that you made it explicit
23 that we would then be benefitting -- we'd be benefitting
24 all of us because the smog-use vehicle would be off the
25 road, but we'd very much be benefitting those families

1 or persons using those vehicles because we'd reduce
2 their costs. So, thank you for bringing it up.

3 COMMISSIONER SCOTT: I just want to be mindful
4 of our time. I am so happy to have all of you here
5 today. Thank you so much for coming. You, of course,
6 are welcome to stay all day, if you like.

7 But just let me say that I very much look
8 forward to continuing to work with you. I wanted to say
9 thank you again for your leadership and your dedication
10 on this.

11 To me, it's pretty incredible that California
12 has a program like this, where we can make investments
13 in transforming the transportation fleet. And I'm
14 honored to get to work on it and honored to get to work
15 on that with you.

16 And I thought I might just ask if there was
17 anything else that you -- any closing remark that you
18 might like to make?

19 If you have a favorite story from passage of the
20 legislation, or anything you'd like to say?

21 ASSEMBLYMEMBER PEREA: I can't talk about it.

22 (Laughter)

23 ASSEMBLYMEMBER SKINNER: Yeah, I thought about
24 those and I thought I can't share them.

25 SENATOR PAVLEY: I just wanted to let you know

1 that Rob Oglesby and Jay Dickenson did an excellent job
2 on your behalf coming with facts, working with members,
3 working with that coalition.

4 And Assemblymember Perea, here's a challenge for
5 us all. This two-thirds vote was obtainable, why,
6 because we broadened the coalition. We didn't compete
7 with each other. That should be the model for the water
8 one. All right.

9 COMMISSIONER DOUGLAS: I'll just join
10 Commissioner Scott in thanking you for being here. This
11 session has been just extraordinarily helpful to us and
12 so we really appreciate your time, your leadership,
13 obviously, in the passage of this bill, but your time in
14 being here today.

15 ASSEMBLYMEMBER SKINNER: Well, Assemblymember
16 Perea, you may have a closing point, but I have a
17 closing point, so I won't preclude yours.

18 I did want to bring up something on fuels. I'm
19 always attracted to looking at, sometimes you call it
20 the co-benefits but, you know, how do we use whatever
21 program we have or objective to meet multiple
22 objectives?

23 And we know that we have a lot of municipal
24 waste. I mean, in California, and we didn't talk about
25 this, but California was the first state to adopt a 50

1 percent reduction, AB 939, back in, what was that, '89,
2 which we've expanded.

3 But we still have, per person, you know, much
4 higher waste generation than most every other country in
5 the world, even though we've done a huge amount around
6 diversion, right?

7 So, we've got tons of municipal waste, tons
8 literally. We've got lots of ag waste. We've got
9 forest, we have different biomass byproducts and they
10 all produce methane, right.

11 And while we have these huge goals for
12 recycling, you know, much of -- if we take paper and
13 such, we're sending it to China. And to be perfectly
14 blunt, we don't really have the 100 percent assurance
15 that that is being remade into other paper products.

16 So, can we -- can we link our waste with our
17 fuel production more in a way that does not create other
18 environmental negative byproducts?

19 I mean, we know that combustion, straight
20 combustion has different byproducts that are not great.
21 But are there other -- is the pyrolysis, if I get it
22 right, you know, or enzymatic, or other type of systems?

23 And I think we need a lot more testing on these
24 and I think that, again, if we were to do this well,
25 possibly then there could be more of these types of

1 biofuels in the Central Valley, using the ag waste and
2 perhaps other materials that would address two different
3 issues for the Central Valley.

4 But I think we need more work on that and I
5 would like these programs to play a role in it.

6 MR. RECHTSCHAFFEN: I would, if I could just
7 respond to that, to the extent that you're talking about
8 energy as opposed to fuels, which is outside their
9 particular mandate it is -- okay, but while I have you
10 on the table, on the dais --

11 (Laughter)

12 MR. RECHTSCHAFFEN: -- we are looking very hard,
13 the Administration is, about a more thoughtful policy
14 about just doing that using all forms of waste to
15 increase energy, to meet our renewables, diversion and
16 other goals. And so, stay tuned in the next few months.

17 ASSEMBLYMEMBER SKINNER: Yeah, I was thinking
18 specifically fuels just because of -- that -- all right,
19 obviously, in a huge landfill you can produce
20 electricity because you've got a big enough quantity of
21 methane. But in many of these other, these are smaller
22 sources and so the electricity generation, yes, you can
23 do it. But I just felt that the linkage, at least in
24 what I've been looking at, you can get the fuel more
25 quickly to the direct use. So, I've been looking much

1 more at these sources for fuel generation than
2 electricity generation.

3 COMMISSIONER SCOTT: I just also wanted to say,
4 Senator DeSaulnier really wanted to join us here today,
5 as well, but he is -- he sends his regrets, he's sick
6 today. So, we're sorry he wasn't able to join us, but
7 delighted that you all were.

8 Thank you very much again for coming and I look
9 forward to continuing to work together.

10 Why don't we do a five-minute break and then
11 we'll start up with Cliff at 11:15.

12 (Applause)

13 (Off the record at 11:10 a.m.)

14 (On the record at 11:19 a.m.)

15 COMMISSIONER SCOTT: Okay, everybody, please
16 come on back in the room, we're going to get started
17 again. Should I do the gavel?

18 Welcome back everybody. I would like to
19 continue on with our discussion and warmly welcome Cliff
20 Rechtschaffen, who is a Senior Advisor in the Office of
21 California Governor Jerry Brown.

22 MR. RECHTSCHAFFEN: Thank you very much,
23 Commissioner Scott and Commissioner Douglas. I'm very
24 glad that Senator Pavley left because I don't know how
25 we're going to get a two-thirds vote on the water bond

1 and I was very nervous that I would have to explain it
2 here. But don't tell her I said -- well, maybe
3 Assemblywoman Skinner just heard that, actually. Now,
4 I'm in trouble.

5 (Laughter)

6 MR. RECHTSCHAFFEN: It's a pleasure to be here
7 and to be celebrating, as the Legislators and
8 Commissioners just talked about, the passage of AB 8 and
9 the reauthorization of this incredibly important
10 program.

11 It wasn't a given, so everyone who worked on it
12 should really feel wonderful about its passage.

13 And we sort of take for granted here, in
14 California, programs like this. But we shouldn't.
15 They're not a luxury, they're essential, but we are in a
16 very different position than lots of other states.

17 And I'll give you just one example. We had a
18 summit a couple weeks ago about zero emission vehicles
19 and we had a very dynamic person from Oregon, who's
20 their zero emission vehicle czar, and they're talking
21 about their program.

22 And they don't have any purchase incentives for
23 zero emission vehicles right now, nothing.

24 They have a lot of other programs, they have a
25 fancy czar and they wanted us to have a czar. But

1 something like that, which is embedded in our program as
2 a result of AB 118, other states don't have it. And
3 Oregon is one of the leaders in clean energy and clean
4 transportation.

5 So, we have a wonderful program here. The CEC's
6 been a national and, indeed, international example on
7 this area.

8 And I can tell you, Governor Brown has been
9 meeting with lots of foreign leaders about climate and
10 energy, and I'll talk about that in a second, and he
11 loves trotting out the CEC because they really have been
12 international leaders on so many issues, and this is one
13 of them. So, they deserve their props, as well.

14 And also, importantly, what the Legislature did
15 is establish, reauthorized this program for ten years.
16 That is enormously helpful because we have heard so many
17 times that business needs certainty and security in
18 making their investment decisions.

19 Especially, when you're doing something small
20 like trying to decarbonize your entire electricity
21 system and your transportation system businesses need
22 time, they need a long lead time to make those kind of
23 transformative investments.

24 We see constant back and forth politicization at
25 the federal level with the renewal of the investment tax

1 credit and the production tax credit.

2 We now have put this program in place for ten
3 years.

4 One thing I didn't -- I don't know if you've
5 done it and I apologize if you mentioned this in your
6 earlier remarks, Commissioner Scott.

7 We have leveraged hundreds of millions of
8 dollars with the AB 118 Program in private investment.
9 I think it's a really important story and I think it's
10 something that the Commission should trumpet, if it
11 hasn't.

12 It's not just attracting jobs and businesses
13 immediately; it's all the attended capital that comes
14 along with that.

15 So, I guess I'm allowed to do things, right?

16 COMMISSIONER SCOTT: Yes.

17 MR. RECHTSCHAFFEN: Not just the Legislature.
18 Or I guess I can tell you to do -- you're an independent
19 Commissioner, but I can make suggestions.

20 (Laughter)

21 MR. RECHTSCHAFFEN: So, with advanced permission
22 from the Chair, I'm going to focus a little bit on a
23 broader context of climate change.

24 I'm also going to be channeling the Governor,
25 who talks about climate change whenever he goes

1 anywhere. And he also doesn't pay attention to what's
2 on the agenda, he just talks about what he thinks is
3 most important.

4 So, with that permission, I'm going to talk
5 mostly about climate change and how it relates to this
6 program, and focus largely on the efforts we've been
7 undertaking to promote zero emission vehicles in
8 California.

9 For Governor Brown, climate change is an
10 overriding consideration. He talks about it in the
11 starkest possible terms. He thinks it's a challenge
12 like none other than California has faced, indeed the
13 world.

14 And this is what he said in last year's state of
15 the state: "No long-term liability presents as great a
16 danger to our wellbeing."

17 He said something, I guess, arguably stronger
18 last fall. This is when he signed an agreement with
19 Oregon, Washington and British Columbia to deal with
20 climate. He said, "It is the world's greatest
21 existential challenge, the stability of our climate."

22 And that sharp focus and overriding concern
23 underlies lots of this current Administration's policies
24 on climate and clean energy.

25 The Governor is reaching out to other

1 jurisdictions. We have a real vacuum at the federal
2 level because of inaction in Congress.

3 The Governor says, well, we're the eighth
4 largest or seventh largest economy in the world, we
5 should partner with other jurisdictions and leverage
6 what we can do.

7 On the right, you see the Governor signing an
8 agreement with someone from the National Reform and
9 Development Commission in China.

10 We are the first sub-national government to sign
11 a climate agreement with China. We've actually signed
12 four agreements on climate change, air pollution and
13 clean energy this year.

14 They call for lots of things, but perhaps most
15 notably here it calls for cooperation in increasing
16 electrified transportation and expanding markets for
17 clean technology.

18 So, here's another example where we are
19 leveraging the innovation that we are accomplishing here
20 in California, working with other jurisdictions in the
21 world to help achieve that.

22 By the way, we are also partnering with the
23 Chinese government to help them develop seven cap and
24 trade programs.

25 The Chinese government -- seven provinces in

1 other jurisdictions are starting cap and trade programs,
2 and there's about 220 million people impacted by those.
3 So, it's very, very important to show that we can deal
4 with climate in a responsible way.

5 We also have agreements with Japan. The
6 Governor's interested in an agreement with Mexico and
7 other jurisdictions.

8 And in the fall, the Governor signed a -- on the
9 left, you see the Governor signed an agreement with
10 Washington, Oregon and British Columbia.

11 Of note here, all the jurisdictions agreed to
12 put a price on carbon. They didn't say how they're
13 going to do that, it could be a tax, or a cap and trade,
14 cap and dividend, as well as adopt a low-carbon fuel
15 standard, and work together on longer-term targets.

16 And also work jointly to expand purchases of
17 zero emission vehicles. If we have a broader market,
18 the four jurisdictions, collectively, are the fifth
19 largest economy in the world, we can help grow the
20 market for zero emission vehicles, expand technology,
21 share lessons, and so forth.

22 Yeah, in California, of course, the central
23 element to our strategy is AB 32. I was delighted to
24 hear Senator Pavley boast about how well the energy
25 agencies are working together.

1 I'm going to put that on a business card and use
2 it when I need it, such as when others criticize us.

3 But the central policy is AB 32, which pulls
4 together many of our clean energy policies.

5 And this is a familiar slide to many people, but
6 as Assemblywoman Skinner said, transportation is the
7 largest source of our greenhouse gas emissions, both
8 because we love to drive here in California, we don't
9 have as well-developed mass transit, we have cities that
10 are spread out. And also because, frankly, some of our
11 industrial emissions are lower than elsewhere and we
12 have a cleaner energy mix.

13 But in any case, transportation is the biggest
14 source.

15 This, again, is our AB 32 scoping plan. The
16 main point here is we are pursuing a balanced and
17 thoughtful approach to climate change. And it's
18 working; we are on track to meeting our 2030 goals,
19 including our goals for transportation.

20 But transportation's only one part of it; for
21 renewable energy we're already at about 23 percent
22 renewable. And our goal is, of course, 33 percent by
23 2020.

24 We're continuing to move forward with
25 efficiency. The CEC continues to adopt path-breaking

1 standards for appliances in new homes. We're moving
2 forward on innovative programs on energy storage, and
3 cap and trade, as well as clean transportation.

4 Transportation, as I said, 40 percent of GHG
5 emissions is a central part of AB 32.

6 And more importantly, and I think more
7 importantly for our task here today and for the CEC
8 going forward, every serious plan for looking at how to
9 deal with climate change over the long term, in
10 California and elsewhere, talks about the need to reduce
11 GHGs dramatically from transportation.

12 Just in general, the scientific consensus is
13 that the developed world, and this is familiar to many
14 people, needs to reduce emissions by 80 percent below
15 1990 levels by 2050.

16 And in California, as part of the Governor's
17 Zero Emission Executive order in 2012, he set a goal
18 that we would reduce greenhouse gas emissions from
19 transportation to 80 percent 1990 levels by 2050.

20 So, we know that we will need dramatic
21 reductions. There's just simply no way around it.
22 There's no other choice.

23 And, of course, as Assemblyman Perea said, we
24 will need those same reductions to meet the health-based
25 standards of the Clean Air Act, especially in the

1 Central Valley and the South Coast. CARB and the local
2 air districts have done the analysis, there's simply no
3 way to deal -- meet those standards otherwise.

4 Interestingly enough, and some of you may be
5 familiar with this, we're recently seeing the role that
6 zero emission vehicles could play in stabilizing our
7 electricity grid over time as we rely on more and more
8 renewables.

9 And without getting into a lot of -- into too
10 much of a tangent, the independent system operator tells
11 us that as we have higher penetrations of renewables
12 during the middle of the day, in the winter, we will
13 have over-generation. We will have a lot of solar that
14 we need some place to put. And a massive group of
15 electric cars taking energy off the grid, or charging at
16 that point in time could be just the solution to some of
17 our energy problems.

18 So, we're talking about win/win, this is
19 win/win/win/win/win/win/win, it's a lot of wins for
20 clean transportation.

21 We have a comprehensive approach for dealing
22 with transportation in California. We have the Advanced
23 Clean Car Standard that Senator Pavley helped author
24 that really has resulted in national fuel economy
25 standards of 54 miles per gallon.

1 We have the Low Carbon Fuel Standard, which I
2 don't want to talk about too much today, but I do think
3 the AB 118 Program has a very -- has played and will
4 continue to play a very important role in helping to see
5 technology achieve that standard.

6 That, of course, requires a reduction in the
7 carbon intensity of fuels used in California based on a
8 lifecycle analysis, a reduction of 10 percent by 2020.

9 We have some technologies available, some have
10 not materialized. We need a lot more innovation and,
11 experimentation, and development. And we will get there
12 and it's essential that we get there. It's essential we
13 have a signal to develop lower carbon-intensity fuels or
14 we'll never meet our greenhouse gas or Clean Air Act
15 goals.

16 Yeah, so there's lots of work to be and that has
17 been done in this area for the AB 118 Program.

18 We have the SB 375, which encourages sustainable
19 land use development.

20 Don't forget high-speed rail. It's a
21 transformative technology that over the long term is
22 critical to reducing greenhouse gases in California as
23 we grow to a population of 50 million.

24 Port electrification, of course it's critical
25 that we have our ships using electric power on shore

1 instead of oil, on-based diesel engines. Huge clean air
2 benefits, as well as GHG benefits, and localized, as
3 Senator Pavley talked about.

4 And then we have our bold zero emission vehicle
5 goals, and that includes electric vehicles, plug-in
6 hybrid vehicles, and fuel cell vehicles. And I want to
7 talk about those in a little bit more detail.

8 I think for us and very relevant to this
9 discussion, hydrogen-powered vehicles are a key part of
10 the State's strategy to meet both our climate and Clean
11 Air Act goals. We just don't see a way to get there any
12 other way.

13 Fuel cell vehicles provide better value for
14 larger vehicles, especially the heavy-duty and the
15 freight sector. They have much longer range than
16 current electric vehicles. They can go up to 300 miles
17 without fueling. And the public is more accustomed to
18 filling up at a fuel cell station, where it's much more
19 like a gas station than putting a plug into your car.

20 So, that is a critical part of what needs to be
21 done. Of course, that was a central element of the
22 reauthorization of AB 118.

23 I'm going to talk a little bit more about --
24 talk a little bit more about what we're doing
25 administration wide to promote zero emission vehicles,

1 and then tie it back to what the Commission can do going
2 forward.

3 The Governor adopted an executive order in 2012,
4 calling for a million and a half zero emission vehicles
5 by 2025. Again, all forms of electric vehicles.

6 And then we adopted, in 2013, an action plan to
7 get there, with many elements of particular salience
8 that brings together lots of agencies. I would say the
9 Air Resources Board and the CEC are the key implementing
10 agencies, or most important in helping us think through
11 that. There are lots of things that CEC needs to do.

12 We need to have all agencies, as well as local
13 governments, working to provide the infrastructure, the
14 charging stations we need.

15 We have a very steep task in expanding consumer
16 awareness and demands. We have goals for transforming
17 our internal fleets. They're modest goals.

18 By the way, we've got -- we're on target to meet
19 those. And the other Pacific Coast Collaborative States
20 have agreed to join that.

21 And we want to grow jobs and investment in this
22 sector. And that's not a throwaway. It's critically
23 important AB 118 funds some of that job development and
24 workforce development.

25 TESLA, a homegrown company, it has a market

1 share value as large as Mazda now. It has 4,000
2 employees. It has the largest manufacturing facility in
3 the State, maybe west of St. Louis. We're trying to see
4 if they will locate their very ambitious battery factor
5 here in California.

6 That only happens, as Senator Pavley said,
7 because of the policies that we have in place.

8 We've been able to leverage what we're doing
9 with zero emission vehicles to other states. Eight
10 states signed an agreement last year to join the
11 standard that we have in California that the Air
12 Resources Board has also adopted by mandate. And
13 they're about 25 percent of the market.

14 And we agreed to harmonize the work that we're
15 doing, and including incentives, and other standards
16 that we need.

17 So, how are we going to do all this? Well, we
18 need a lot of dramatic change. We need a lot of
19 innovations. We need to dream big, as we talked about
20 before.

21 We're going to need, over time, to radically
22 change our mix of fuels and technologies.

23 And we will need the CEC's program, the AB 118
24 Program that supports programs that do these many
25 things, that develop new fuels, expand infrastructure

1 and fueling stations, that help retrofit medium- and
2 heavy-duty vehicles, establish workforce training,
3 expand public awareness, create technology centers for
4 that new technology that's coming, coming forward.

5 Let me talk about how we're doing, a little bit
6 of an advertisement, if you don't mind.

7 This is a chart that's maybe a little bit hard
8 to read, but I know the slides have been posted and
9 handed out.

10 We're doing pretty well in terms of zero
11 emission vehicles. Three percent of all vehicles, new
12 vehicles in California, the last quarter of 2013, were
13 zero emission vehicles. Fifteen percent of cars priced
14 over \$25,000.

15 We sold 40,000 zero emission vehicles, twice as
16 many as the year before, and we now have about 74,000
17 statewide.

18 So, we're doing well. The EV market's growing
19 faster than hybrids, at a comparable pace in their
20 time -- in a comparable pace of their introduction.

21 I'm going to talk about this only very, very
22 quickly. In the implementation plan that we set for
23 zero emission vehicles, we set tasks for ourselves. The
24 most important by far and away, bar none, XYZ/ABCD, was
25 reauthorizing AB 118.

1 So, again thank you, thank you, thank you, we
2 did that.

3 There are other things that we've achieved that
4 are necessary for the development of zero emission
5 vehicles. Providing open access and universal to
6 stations so that people can't be charged a subscription
7 fee or membership fee to use a charging station, and
8 that these charging stations have to accept credit
9 cards.

10 We want these to be -- we want charging to be
11 normalized. We want it to be just like filling up at a
12 gas station. We want it to be easy to search for
13 stations, not dependent on which service you've signed
14 up for. That's interoperability.

15 Our building codes are being updated to be ready
16 to install ZEVs. That's a very important foundational
17 step that will bear fruit over time.

18 OPR and DGS have issued guidance that's very
19 useful.

20 One thing we've done is carpool stickers are a
21 very important incentive for drivers. We're actually
22 doing so well with electric vehicles and plug-in hybrids
23 that we're running out of the number authorized by
24 statute and we have to get urgency legislation to
25 increase that number because we're running out. And

1 that's one of the incentives most cited by purchasers
2 for buying cars.

3 And then some of these other thing;, establish a
4 vehicle-to-grid roadmap so people can realize the
5 benefits inherent in batteries. You can provide demand
6 response or storage services in your car. We need to
7 figure out how to do that.

8 The Treasurer's Office, just last week, issued
9 regulations providing a loan loss guarantee for property
10 assessed clean energy financing, and they include the
11 ability to charge -- to spend money for a charging
12 station, if you're a homeowner.

13 And we have hired, in the Governor's Office of
14 Business and Economic Development, an ombudsman to help
15 hydrogen fueling station and also ZEV infrastructure.

16 Future challenges, where do we need to go? Many
17 of these directly relate to the work funded by AB 118
18 and we'll be looking to the CEC for support and creative
19 solutions here.

20 So, how do we judge success as to how well you
21 do on all these things, make them all happen and right
22 away?

23 So, a major challenge remains just getting more
24 people in cars, increasing consumer awareness and
25 demand, and figuring out creative ways to reduce up-

1 front purchase cost because it's still more expensive to
2 buy these cars. So, there may be -- we have the ongoing
3 incentive programs. We may need new ideas in this area.

4 A central challenge, and you've heard a lot of
5 discussion in the panel before, is how do we increase
6 access for low-income and middle-income consumers?

7 And we know that the percentage of consumers who
8 take advantage of the Clean Vehicle Rebate Program right
9 now is in the single digits. So, most consumers are
10 middle or upper income consumers.

11 We are working, doing a lot of work to try to
12 fix that. One of the best things we can do is just sell
13 more cars so that there are more used cars, and that the
14 used car market is cheaper.

15 We're also thinking about some creative ways, in
16 addition to what Senator Pavley and Senator Skinner were
17 talking about.

18 The Air Board and the Bureau of Automotive
19 Repair have proposed some reforms to the Car Scrappage
20 Program that Senator Pavley was talking about.

21 And the gist of those repairs is that you can
22 retire older polluting cars, get credit for that, and
23 also get an incentive for buying an electric vehicle or
24 a plug-in hybrid vehicle at a higher amount. The
25 combined total would be higher than just the single

1 silos of the program.

2 And that will, hopefully, encourage more people
3 to participate.

4 We also need to think about creative financing
5 mechanisms. Some people have suggested and this is
6 something the CEC may consider, do we need a loan loss
7 reserve program to increase financing subsidies, buy
8 down -- make it a credit enhancement program. Make it
9 easier for people who would otherwise have difficulty
10 doing the financing to buy a zero emission vehicle car,
11 to otherwise qualify.

12 We should look at pilots for car sharing because
13 not everyone can afford a car, but they may be
14 interested in car sharing.

15 So, there are lots of things, like that, that we
16 need to explore.

17 Similarly, financing of public stations, right
18 now it's still a challenge for people to finance those
19 because it's a new model, the investment community
20 doesn't know about it.

21 We may need to have loan loss guarantee programs
22 or other programs to make it easier to finance public
23 stations. We do not want to have people getting the
24 kind of range anxiety that Assemblywoman Skinner talked
25 about.

1 We absolutely need to grow medium- and heavy-
2 duty fleets. We need, probably, additional incentives,
3 demonstration projects. That's something that's part of
4 the investment plan.

5 And we need, in a big way, to support hydrogen
6 development and help build the network of hydrogen
7 fueling stations. I will say that really is a central
8 challenge for this plan and the CEC right now.

9 We've heard from most of the large automakers
10 and they are planning to produce commercial volumes of
11 hydrogen vehicles in the next few years. Toyota, Honda,
12 Hyundai, GM, Nissan, Ford, Daimler. They're all
13 building the cars. So, they've said, well, if we send
14 the cars to California, you better have those stations.
15 And we do need the stations to support them.

16 You know, we have a plan from experts about how
17 to get to the first 68 and the first 100 or so. Those
18 of you who have followed the issue know that that's sort
19 of a magic number, the minimum number that people who
20 have looked at this think is necessary to support a
21 rollout of hydrogen vehicles.

22 And, of course, AB 8 provides that the CEC has
23 to provide funding of \$20 million a year until a hundred
24 of those stations are built.

25 So, we need to make that happen and make that

1 happen right.

2 I think we also need to have a new roadmap,
3 given the new timing of AB 8. And I think the CEC is
4 already looking very hard at that to see where the --
5 what makes sense, in what period of time, and where the
6 stations should be sited, including some of these
7 questions about how -- just like not to just to grow the
8 market, but to provide equitable benefits.

9 And I think we're going to -- we also probably
10 need to look at having some kind of permitting guidebook
11 to help local governments in permitting questions, just
12 like we've had for zero emission vehicles.

13 So, those are some of the ongoing challenges.
14 We're not putting those all on the CEC, there's just a
15 small part of them. But those are some of the things
16 that AB 118 can help fund.

17 I think I'll stop there. We look forward to a
18 robust discussion, development of this plan. It
19 continues to provide breakthroughs in support
20 technologies that are critical for our long-term clean
21 energy and climate goals.

22 And we look forward to ten more years of this
23 program working.

24 COMMISSIONER SCOTT: Thank you so much, Cliff,
25 for that terrific, thoughtful presentation.

1 It's really great for us to be able to hear what
2 the Governor's Office vision is for this. I do think I
3 heard some let's do them all and do them right now. And
4 we will do our best to help out with that.

5 And also, just to bring to us the Governor's
6 vision and how important the climate imperative is for
7 him and for us to all be doing things that take action
8 towards addressing those challenges.

9 I also just wanted to highlight the Zero
10 Emission Vehicle Conference, which was just on March
11 7th. And I thought it was a terrific conference. It
12 was neat to see all the momentum, and the energy, and
13 how many of the actions in the action plan that have
14 been accomplished so far.

15 And then have the opportunity to think of things
16 that we need to continue on with.

17 So, thank you all for putting that together, it
18 was a great conference.

19 I will see -- so, we have about three minutes.
20 Cliff has generously agreed to take a couple of
21 questions. And so I don't know if, maybe, Commissioner
22 Douglas, do you have a question or should we --

23 COMMISSIONER DOUGLAS: Not a question, just a
24 comment, really. I mean, then overall perspective is
25 very helpful. As, you know, one agency sitting down and

1 trying to figure out its priorities, and its process for
2 moving forward, it's always very helpful to have the
3 broader perspective, bring in the coordination with
4 other agencies to try to figure out how the larger
5 vision is effectuated.

6 And so, it's really helpful to have that brought
7 into this process. Because of course, then, all of our
8 stakeholders who work with us on a day-to-day basis,
9 through the development of programs, also see it and can
10 also think about how they fit in, and how they work
11 within the forums that different agencies have to help
12 bring this to fruition.

13 So, it's very valuable to us to hear that and to
14 hear that in this forum. So, thank you. I don't have
15 any questions at the moment.

16 But I'm sure, if we give them the opportunity,
17 we could have a line at the podium any minute now.

18 COMMISSIONER SCOTT: We're hungry. All right,
19 well, Cliff, thank you for your terrific presentation.
20 We're glad to have you here today.

21 We will go, now, to our --

22 (Applause)

23 COMMISSIONER SCOTT: Oh, thank you.

24 Go ahead.

25 So, we will turn, now, to the California Energy

1 Commission's Transportation Division and Program
2 Synergies. And you will hear from Randy Roesser, who
3 runs our Fuels and Transportation Division and from
4 Laurie ten Hope, who runs our Energy, Research and
5 Development Division.

6 MR. ROESSER: Good morning. I'm Randy Roesser.
7 I'm Deputy Director of the Fuels and Transportation
8 Division.

9 And with me is Laurie ten Hope, Deputy Director
10 of the Energy, Research and Development Division.

11 Let me just say that Laurie and I appreciate
12 everyone's time here, obviously, the impressive panel
13 that we had here this morning and all the stakeholders
14 out in the audience. It's very nice to see all the
15 interest at this first, opening workshop for the 2014
16 IEPR Update.

17 And we certainly appreciate the value
18 contributions that the panel made this morning and we
19 expect to get from stakeholders, as this process evolves
20 throughout the rest of the year.

21 So with that, Laurie and I would just like to
22 spend a few minutes to describe our programs, the
23 coordination between both of our programs and, frankly,
24 just a few examples.

25 You had some terrific examples this morning,

1 Commissioner, but we have a few other examples of worthy
2 projects that our programs have funded.

3 MS. TEN HOPE: Good morning, I'm Laurie ten
4 Hope, Deputy Director for Research.

5 And we can go to the next slide, please. So,
6 we've spent the morning really talking about the
7 Alternative and Renewable Fuel and Vehicle Technology
8 Program, which really needs a shorter title and better
9 acronym. It's a mouthful.

10 COMMISSIONER SCOTT: We should have mentioned
11 that while the Legislators were here, huh.

12 MS. TEN HOPE: But that program is also
13 supported by the research -- a couple of research
14 programs in the Research Division, which prior to the
15 EPIC Program has been supported by the PIER Electricity
16 Program, and the Natural Gas Research Program, and going
17 forward by the Electric Program Investment Charge,
18 commonly known as EPIC.

19 So, these programs are relatively a small dollar
20 amount dedicated to transportation as the primary
21 objective. But, still, they provide the underpinning
22 for some of the goals and challenges that were laid out
23 by the Commissioners, Assembly Members, Senators, and
24 Cliff this morning.

25 So, on the electric side, so for those of you

1 who aren't familiar, there's historically been a
2 surcharge on electricity use to fund research by the
3 PIER Program and now, going forward, by the EPIC
4 Program.

5 And it's really designed to provide benefits to
6 the ratepayers in the three investor-owned utilities.

7 And in the transportation area, we're looking at
8 some of the enabling technologies that will lower the
9 cost or facilitate electrification of transportation.

10 A couple of the examples are electric vehicle
11 battery second use. If batteries have a second use for
12 stationary applications, maybe grid stability on the
13 electricity system, or even as a battery source at a
14 residential or commercial facility, it could lower the
15 cost of electric vehicles by having a secondary revenue
16 stream for the batteries.

17 We're looking at some battery standardization,
18 which could -- you know, it has a similar goal and it
19 also facilitates not only second use, but battery
20 recycling.

21 We have a project with Electricorp to examine
22 the potential for standardization.

23 We're doing some battery recycling work with a
24 company called Farasik (phonetic), and they're recycling
25 the lithium and putting the lithium back into new

1 batteries. That research project is complemented with a
2 project with Lawrence Berkeley Lab to identify the most
3 promising sites for the EV recycling.

4 And along to sort of facilitate what Cliff was
5 talking about, we have a couple of projects in vehicle
6 grid integration. So, we have one pilot project with
7 L.A. Air Force Base.

8 The Air Force is committed to clean energy, as
9 is the State of California, and they're looking at
10 converting their non-tactical vehicles to electric
11 vehicles, and doing the first pilot in the country to
12 use the vehicles for vehicle-to-grid. So, not only
13 taking power from the grid, but being able to put power
14 back in the grid and participate in the ISO's ancillary
15 services market.

16 And we have some planned work in Smart Charging.
17 To again follow up on Cliff's comments, there might be
18 certain times of the day where we have over-generation
19 of renewables that might be a good opportunity for
20 charging; how to make the charging infrastructure really
21 seamless with our electricity grid system.

22 Just quickly, we're still on this slide, sorry.
23 On the natural gas we spend about \$4 million a year on
24 natural gas, looking at renewable natural gas
25 production, storage tanks for light-duty vehicles,

1 fueling infrastructure for natural gas, and focus most
2 of the funding on natural gas vehicles in medium and
3 heavy duty.

4 So, that's sort of a quick overview of the
5 research that then feeds, often feeds into projects in
6 Randy's program.

7 And staying on this same slide, since I cannot
8 let Laurie have the last word, I will.

9 So, I just want to add that, as Laurie said, a
10 lot of the great work that the EPIC Program and the
11 Natural Gas Research Programs do related to
12 transportation, the Alternative and Renewable Fuel and
13 Vehicle Technology Program follows that up with
14 providing, as you mentioned earlier, Commissioner, up to
15 \$100 million annually in supporting the demonstration
16 and deployment of low-carbon fuel alternatives, fueling
17 infrastructure and advanced vehicle technologies.

18 Annually, the Commission adopts an investment
19 plan for the ARFVTP -- I still struggle with that
20 acronym, as Laurie pointed out.

21 And that investment plan is driven by good
22 support, and engagement through the Legislature, and
23 active advisory committee membership, and active
24 stakeholders.

25 And, of course, I cannot fail to mention the

1 dedicated Energy Commission staff that participate in
2 pulling all of the comments, creating the first draft,
3 and leading to a final Commissioner report that you
4 support, or don't support, going forward.

5 So, and that investment plan provides a good
6 pathway to ensure that the funds through this program
7 are spent wisely.

8 Leveraging additional funds, as Cliff has
9 mentioned earlier. I can comment on that just a little
10 bit more that in the vast majority of awards, through
11 the program, they require a match share equal to or
12 exceeding the investment that the State funds to go into
13 the program.

14 So, leveraging is a key element of the program
15 and we push hard to bring, not just the additional money
16 to the table, but it's also important to bring those
17 partners to the table so that everyone has skin in the
18 game, and we have a common goal in moving forward in
19 those different projects.

20 And I'll just add that the projects that are
21 funded by the program range from biofuel production to
22 EV, natural gas, hydrogen, biodiesel and E-85
23 infrastructure. EV, and natural gas, and propane
24 vehicle deployment has been funded, as well as medium-
25 and heavy-duty EV deployment.

1 You know, fitting in nicely with some of the
2 comments by our Legislators here today, and the
3 importance of that goods movement in the heavy-duty
4 sector.

5 Clean energy advanced technology manufacturing,
6 we've done funding there that has provided good support
7 and project development in this area, as well as lots of
8 good, high-paying manufacturing jobs in California.

9 We've funded regional alternative fuel readiness
10 and planning assistance, emerging opportunities and
11 federal cost-share opportunities and, of course,
12 workforce training that was mentioned previously as
13 being a key element to help support as this new
14 technology comes online, and make sure there's a
15 workforce out there that can perform the necessary work
16 that comes with technology advancement.

17 MS. TEN HOPE: The next slide, please. So,
18 these programs really provide the legs or underpinning
19 for us to achieve these policy goals.

20 We heard this morning what the goals are. You
21 know, they're a heavy lift and, you know, these funds
22 really enable us to achieve the goals that I think, you
23 know, most of us are quite aware of.

24 So we're, you know, obviously interested in
25 cleaner air, maintaining our leadership in greenhouse

1 gas emission reductions, improving access to clean
2 technology.

3 We want to do it in a way that doesn't
4 jeopardize grid reliability. In fact, could really,
5 perhaps, strengthen, stabilize, strengthen the grid,
6 reduce the costs of vehicle-to-grid connection, and do
7 that in a way that also provides economic stimulus to
8 California in terms of jobs, manufacturing and, you
9 know, in-state development.

10 In the Research Program, we put a premium on the
11 research being developed and demonstrated in California,
12 and we've found that that's -- you know, that's resulted
13 in some companies moving to California or expanding
14 their base where which has, you know, obvious economic
15 benefits for the State.

16 The next slide.

17 MR. ROESSER: The next slide, please. So, I'll
18 quickly go through and just point out some of the major
19 collaborations between Laurie's program and the Fuels
20 and Transportation Program.

21 The first and Cliff did a nice job of speaking
22 about that, is the ZEV Action Plan implementation, which
23 targets the infrastructure to support a million ZEVs in
24 California by 2020 and with a goal of 1.5 million actual
25 ZEV vehicles deployed by 2025.

1 That effort includes R&D funding and work,
2 demonstration, deployment strategies, which the Energy
3 Commission has the lead or support responsibility in
4 many of those tasks within the Action Plan.

5 The FTD and Transportation Research staff
6 coordinate on a regular basis to ensure that we are
7 fulfilling our obligations under that plan, and do the
8 outreach to the necessary stakeholders, the Legislature
9 and the Governor's Office.

10 And as far as the ARFVTP Investment Plans, and
11 the EPIC Investment Plans, program staff coordinate
12 regularly also in the development of plans for both
13 programs.

14 And, actually, I should say all three programs,
15 the Natural Gas Research Budget Plans.

16 We reach across the aisle, and if I can use the
17 Legislative quote there, reach across the aisle and
18 utilize the resources and the skills within each
19 division that fit into that area.

20 I know I can speak for the ARFVTP, we often
21 consult with the folks in the EPIC and Natural Gas
22 Research Area to use their skills and their knowledge
23 that they've developed over years of their program
24 running. So, that creates a lot of good help for our
25 investment plan. And I trust that Laurie's folks also

1 gain from reaching across and speaking to some of the
2 skilled folks in the ARFVTP.

3 Similarly, the Energy Commission has supported
4 the Cal-ISO in development of the vehicle-to-grid
5 integration roadmap. And we'll support the
6 implementation of that roadmap through, as Laurie had
7 mentioned, one of the projects, the Vehicle-to-Grid
8 Integration Research, Development and Demonstration
9 activities.

10 An example, again, of the collaboration in the
11 specific project that Laurie was talking about, the L.A.
12 Air Force Base, we're using -- or they're using their
13 expertise in managing research contracts, and their
14 connections with those necessary stakeholders.

15 We've provided some co-funding out of the
16 program that supports that important work, so that's
17 just another good example of actual dollars invested in
18 projects in the State.

19 And lastly, let me just say that while nearly
20 all the projects supported under EPIC, under the PIER
21 Natural Gas Program, and under the ARFVTP program are
22 selected through a competitive process, some projects
23 are extremely successful and timely. They move ahead in
24 a timely manner where they end up winning awards in the
25 research side, through Laurie's shop, and then they

1 actually can then go through the deployment side,
2 compete into the ARFVTP Deployments Program, and win
3 funding there.

4 And we continue that without a break in service
5 and then we can move that technology forward and
6 actually get it commercialized into the State.

7 So, those are some, I just think, good examples
8 of how we collaborate here in the programs.

9 The next slide.

10 MS. TEN HOPE: And we're going to provide a
11 couple of examples of some of the projects that have
12 successfully competed in these programs and moved from
13 innovation in the programs in my division, to deployment
14 in Randy's division.

15 So, the first one is Solazyme. And with
16 research funds they did some experimental work on high
17 lipid algae feedstocks, and looking for which feedstocks
18 would be the most promising in developing a renewable
19 diesel fuel.

20 And they were successful in the lab phases
21 through the work we did in 2008 to 2011, and later
22 competed in an ARFVTP program to take that -- the
23 feedstocks up to a pilot scale oil production facility.
24 This is in South San Francisco.

25 They are now providing the algae-based diesel to

1 retailers in the Bay Area. They have had testing done
2 by the National Renewable Energy Lab. And the renewable
3 diesel significantly out-performs ultra-low sulfur
4 diesel in hydrocarbons, carbon monoxide and
5 particulates.

6 And now, they are in conversations with the U.S.
7 Navy for trials for military applications.

8 MR. ROESSER: The next slide. So,
9 Assemblymember Skinner mentioned her interest in
10 utilizing waste products to turn into fuel, and Cliff
11 expanded on that a little bit as far as energy in
12 general.

13 But this is a good example of a project, Clean
14 World Partners, which is located in Sacramento County,
15 South Area Transfer Station, which the ARFVTP funded to
16 scale up an existing 25-ton-per-day bio-refinery to 100
17 tons per day.

18 At the Clean World Partners facility they will
19 receive -- when it's at full capacity, will be receiving
20 over 36,000 tons per year of food waste from local
21 restaurants, groceries that would otherwise have gone to
22 landfills.

23 And when that -- through that system, they will
24 produce, annually, over 500,000 diesel gallon
25 equivalents of renewable natural gas, so that is a good

1 example of waste-to-energy fuel projects in here.

2 And I can tell you that I don't have the numbers
3 at my fingertips here, but I know the match share, for
4 instance, on this project exceeded what the Energy
5 Commission invested through the ARFVTP so, again,
6 another good example of leveraging additional dollars.

7 The next slide, please.

8 So, here, there was an original PIER grant that
9 targeted the use of renewable combined heat and power
10 for supporting biodiesel production. There was research
11 done through that grant on the digester, the
12 gasification and solar cogeneration was also conducted
13 under the grant.

14 Following onto that, the ARFVTP funded a project
15 that supports the production of the biodiesel from this
16 integrated bio-refinery.

17 At full production, this project is targeted to
18 produce approximately 3 million gallons of biodiesel
19 annually and is another example of a project that
20 leverages -- there are dollars leveraged in here, and
21 leveraging good, strong partners.

22 Some of the partners on this project include the
23 U.S. Navy, Aerojet, UC Davis, CalPoly, and that's just
24 to name a few. Strong partners and, as I said,
25 leveraged funds play key roles in successful projects

1 that the ARFVTP funds and, really, I think showcases the
2 best use of funds on both of our programs.

3 The next slide, please. This technology example
4 might actually be the best demonstration of synergies
5 between the Commission's Transportation R&D Program and
6 the AFRVTP Deployment Program.

7 This technology began with the PIER natural gas
8 funding of the Cummins Westport natural gas engine
9 development and continues with the ARFVTP funding with
10 Gas Technology Institute to demonstrate this resulting,
11 and produce low-emission, high-efficiency natural gas
12 engine, designed for regional hauling in the heavy-duty
13 sector.

14 This does fill a gap where there is not a lot of
15 good, demonstrated technology for the heavy-duty sector
16 in here.

17 And this particular project is expected to
18 produce -- an engine, I should say, that was produced is
19 expected to increase fuel economy up to ten percent,
20 reduce greenhouse gas emissions by up to 25 percent over
21 the current Class 8, natural gas truck engines that are
22 commercially available.

23 Under the ARFVTP project, all necessary testing,
24 certification, demonstration to commercialize this
25 advanced natural gas engine will be conducted with full

1 reporting going on.

2 And again, this is just a good example of the
3 startup through the Research Program, under Laurie's
4 shop, continuing through deployment under the ARFVTP.

5 The next slide.

6 MS. TEN HOPE: And the last example is a
7 collaborative project between our two programs, the
8 South Coast Air Quality Management District and Southern
9 California Gas Company.

10 Typically, the research programs in my shop are
11 doing the early work, but in this case our programs --
12 the program funding can facilitate some natural gas
13 engine development that fits both our funding sources.

14 And the goal here is to demonstrate near-zero
15 NOx natural gas engines for heavy-duty on-road vehicle
16 applications.

17 So, looking for applications in goods movement,
18 refuse, transit or school buses, and bring the emissions
19 down to near zero.

20 This work is going to -- our funding is pooled
21 and then the South Coast Air Quality District will be
22 doing a competitive solicitation for awards. And those
23 awards are pending.

24 The next slide, please. So, as Commissioner
25 Scott mentioned in her comments, and others underscored

1 the importance, we're very interested in obviously
2 continuing collaboration between our programs, but also
3 increasing the outreach to various participants who can
4 both participate in our programs, and also benefit from
5 the programs.

6 So, we have implemented what we call the Spirit
7 of AB 340, which was an Assemblymember Bradford bill, to
8 increase the outreach and encourage participation of
9 women-, minority- and disabled-owned businesses in the
10 research program.

11 The Chair Weisenmiller sent a letter to
12 President Peevey that in the implementation of the
13 Electric Program Investment Charge the Energy Commission
14 is committed to expanding its outreach, and we're doing
15 that in several ways.

16 It was mentioned earlier that we have a
17 transparent process for doing our solicitations. And we
18 have what's called a bidders conference, when applicants
19 can come in and learn more about the solicitations.

20 We're also planning a webinar that will be on
21 our website, and our staff will reach out to various
22 organizations. So that, you know, if more people are
23 aware of the funding opportunities they can participate
24 in the solicitation process.

25 In addition to, you know, expanding the pool of

1 qualified researchers and, you know, organizations for
2 deployment, we're also targeting some of the programs to
3 reach particular communities, whether they're
4 disadvantaged communities that may not be benefitting
5 from the program.

6 So, we want to make sure that energy efficiency,
7 renewables, and clean transportation are deployed widely
8 around the State and that we're also targeting
9 particular programs and sectors in the State.

10 So, the Chair's made that commitment. He's
11 asked us, in our programs, to look for ways to be
12 inclusive. And those goals are imbedded in our
13 implementation strategy.

14 MR. ROESSER: And Commissioner Scott, I'll just
15 add that you've also made that similar commitment under
16 the ARFVTP.

17 And my staff and Laurie's staff are working
18 together. We're not going to reinvent the wheel here.
19 We're going to learn from Laurie's good examples and
20 good work in the past, in going forward.

21 And we're going to move to -- hopefully, move
22 together in that effort to further outreach and ensure
23 that there's adequate and appropriate spreading of the
24 benefits of all of our programs throughout the State of
25 California.

1 MS. TEN HOPE: And Randy said, already, he
2 insisted on the last word so --

3 (Laughter)

4 COMMISSIONER SCOTT: Well, thank you both for
5 that terrific presentation. I think it's just really
6 important for folks to understand, I think, how some of
7 the major funding efforts that we have at the Energy
8 Commission actually fit together.

9 And so, seeing those examples of projects that
10 started out as research and then are on their way to
11 pre-commercial or commercial is, I think, really
12 enlightening. So, thank you for sharing those.

13 I wish Assemblymember Skinner had been here to
14 hear the part about the Clean World Partners. Because
15 one of the neat things that they're doing there, I had
16 an opportunity to go and visit that site, is they're
17 making the renewable natural gas and their fueling the
18 trucks, the waste-hauler trucks that then go out and
19 pick up the food waste and bring it back to the center.

20 So, it's exactly the type of project that she
21 was highlighting.

22 So, thank you guys for that terrific
23 presentation.

24 MS. TEN HOPE: Thank you.

25 COMMISSIONER SCOTT: We are -- it's about 12:10,

1 so why don't we break until 1:10 for lunch.

2 And any announcements from Heather or --

3 MS. RAITT: No, that's great, 1:10 we'll start
4 back.

5 COMMISSIONER SCOTT: Terrific, see you all in an
6 hour.

7 (Off the record at 12:10 p.m.)

8 (On the record at 1:15 p.m.)

9 COMMISSIONER SCOTT: Hey, well, good afternoon
10 everybody and welcome back.

11 We have a terrific set of experts who are going
12 to talk with us this afternoon about clean air, and
13 transportation, about the role of a portfolio approach
14 and incentives, and also how California's innovation is
15 helping to lead the world.

16 And let me give Sandy just one minute and then
17 we'll jump in.

18 So, please join me in welcoming Sandra Berg.
19 Sandra Berg is a proven leader and experienced board
20 member for private, public policy, and nonprofit boards.

21 As the President and CEO of Berg Family of
22 Companies, Vice-Chairman of the Board of American Coding
23 Association and a Board Member of the California Air
24 Resources Board.

25 In 2004, Ms. Berg was appointed to the

1 California Air Resources Board by Governor
2 Schwarzenegger.

3 The California Air Resources Board is the lead
4 policy agency responsible for the air quality in the
5 State. They are recognized nationally and
6 internationally as a leader in policy, innovative
7 technology, and driving green business to California for
8 clean air solutions.

9 In Ms. Berg's capacity as a board member she has
10 chaired several committees and an advisory committee
11 overseeing a billion dollars of public incentive funding
12 dollars, and has facilitated key policy implementation
13 groups, as well as influencing policy to protect health
14 and environment, while keeping business strong.

15 Besides the California Air Resources Board, Ms.
16 Berg serves on the Board of Directors of the American
17 Coding Association in Washington, D.C., and is the
18 incoming Chairman of the Board.

19 She has a passion for our youth and education,
20 and is a past board member of the Hollenbeck Activity
21 League, and has served eight years on the 34th
22 Congressional District Student Art Competition Board.

23 She is a member of the World Presidents
24 Organization City of Angels Chapter, and C 200, a
25 leading business women and philanthropic organization.

1 And I must say, she and I had an opportunity to
2 do a panel together at the Association of Women and
3 Water, and Energy, and the Environment, and she gives a
4 terrific speech.

5 So, thank you for joining us today.

6 MS. BERG: Thank you, Commissioner Scott, thank
7 you very much for having me here today.

8 My goal, of my presentation is really to set the
9 foundation for transformation as we truly look at the
10 next 25 years to 2050.

11 We've made significant progress with advanced
12 clean cars. heavy-duty truck standard, low-carbon fuel
13 standards, and renewables, and understanding the way we
14 work, live and play, and the role transportation has in
15 this California lifestyle.

16 But as we heard this morning, to meet those
17 state's long-term goals to reduce pollution, and both in
18 criteria pollutants and greenhouse gas, and to remain an
19 economic powerhouse we've only scratched the surface of
20 what needs to be done.

21 With the looming lowering of ozone standards and
22 the 80 percent reduction in greenhouse gases by 2050,
23 the challenge has become a call for transformation,
24 transformative solutions with visionary leadership.

25 We want to thank CEC for the role that they play

1 in the leadership of this and really look forward to
2 working with you in order to accomplish these goals.

3 So, let's start; our need for transforming
4 transportation with our clean air and public health.
5 Then, I'll follow that by the importance of a holistic
6 approach. And then wrap up with four keys of
7 transformation.

8 There's no question that we have strong progress
9 on our fight for clean air. As a native Californian and
10 a child that grew up in the South Coast Air Quality
11 Management District, in Arcadia, California, up against
12 the mountains, I remember the days when I couldn't see
13 the mountains, and when I played outside until my lungs
14 hurt, and then we would come back.

15 The progress that we have made, as we see on,
16 yet, these two regions are most challenging. This is,
17 of course, San Joaquin Valley and the South Coast Air
18 Quality Management Districts.

19 The green are areas that are doing well and the
20 yellow areas are still areas that are out of compliance.

21 It's fair to say that ten years ago most of that
22 map was yellow. And so, the progress we have made,
23 there's no question, it's remarkable.

24 And as I think back to 50 years ago, it's a very
25 impressive progress.

1 But now for the challenge, the challenge is that
2 when the ozone standards are reduced, and it's my
3 opinion they will be reduced, I think that's pretty well
4 a consensus, many of the areas -- many of the State's
5 attainment areas are going to still -- are going to
6 become challenged once again. But these two regions are
7 going to continue to be very challenged.

8 Transportation, as we heard this morning, is a
9 key driver. And I'm not going to spend much time on
10 this slide because we've seen it in other presentations.

11 But it's overwhelming when you look at the blue
12 area that transportation is going to be a solution.

13 We couple that with the fact of the timeline
14 that we have. And this slide here represents the
15 regulatory timelines that we're looking between 2010 and
16 2050.

17 With 2020, we heard even from the Governor's
18 Office, this morning, is attainable.

19 But looking out to 2050, it is still
20 transformational. In fact, it is still visionary. We
21 don't know how we're going to get there and, yet, we
22 only have 35 years to do it, with systems that
23 overwhelmingly need more time to transform.

24 So, it absolutely requires that transformational
25 leadership.

1 In looking at the various areas that we've been
2 talking about, that we've heard about both this morning,
3 and the discussion looking at technology, energy,
4 efficiency, I remember serving on the advisory -- the
5 Incentive Advisory Group, when Dr. Wallerstein talked
6 about a portfolio, the need for a portfolio and to be
7 looking at our solutions holistically.

8 And he's going to speak more to that this
9 afternoon.

10 But to meet our multi-pollutant goals, air
11 quality, climate, toxins we need to be looking at how do
12 we take that portfolio and interweave it into each area?

13 Our job, as regulators, is to set clear
14 performance standards, participate in innovation through
15 incentives and education, and let the market decide what
16 technologies, fuels and systems to meet those standards.

17 CEC's leadership has been active to participate
18 in promoting those innovations through AB 118, and we
19 look forward to working with you as we go through this
20 next generation. And it's going to be even more --
21 there's no question about the challenge.

22 This slide here takes a specific area to
23 demonstrate why transformation is the path. If we take
24 just light-duty vehicles, for example, 90 percent of
25 today's fleet of combustion engine vehicles, passenger

1 cars I'm referring to, will need to transition to zero
2 or near zero technologies.

3 We've been talking about PHEVs, BEVs, of course
4 the new fuel cell vehicles that we're really looking
5 forward to coming on board in 2015.

6 Along with the infrastructure and consumer
7 behavior to support such a dramatic change is nothing
8 less than transformational.

9 In looking at the portfolio idea or concept, to
10 combine that with what fuels we need, and the delivery
11 mechanisms for those fuels, combined with the
12 lifestyles, and reducing VMT, relooking at the meaning
13 of sustainable communities and taking these concepts as
14 a holistic whole is going to be critical in this
15 transformation.

16 I was really appreciative of Senator Pavley's
17 observation that we need to spend more effort in looking
18 at the future goals and long-term investments.

19 Where I personally see that we need to be moving
20 short term is closing the gap to commercialization.
21 But, ultimately, if we don't have a clear vision of
22 where we're going to end up in 2050, we're still going
23 to be hit and missing.

24 And so, in looking at absolutely building
25 momentum to get over that threshold, that truly takes

1 the businesses, the consumer, and the policy all melding
2 together.

3 I see that we need transformative mobility
4 through alternative vehicles, fuels, markets, smart
5 mobility and those need to be solidly launched in the
6 next five to ten -- well, I'm sorry, those innovations
7 need to be in place over the next five to ten years,
8 with momentum growth. You've got to be looking at that
9 from about 2025, or we need to be looking at that for
10 about 2025 to 2050.

11 The thing was, as I was preparing these comments
12 is it's comparable to the IT world. Think i-Phone, i-
13 Phone because the size of the entire Microsoft business
14 in seven years. Seven years, one product became as
15 large as the entire Microsoft business.

16 Now, we can't compare quite to i-Phone because,
17 I don't know, we're just not quite that cool.

18 But there is no question we need some visionary
19 leadership that is being bold, and as the Governor's
20 Office suggested, dream big.

21 That; along with transformative industries and
22 markets that are encouraged, supported and rewarded
23 through innovation and clear policy; transformative
24 citizens and consumers that are making choices that are
25 supporting this dramatic change.

1 And along with that, the infrastructure, whether
2 it is physical infrastructure or whether it is delivery
3 mechanisms on how we're getting these electric vehicles
4 through dealers who, by the way, are independent
5 businesses, all the way down to the consumer.

6 And I believe that all of this is wrapped up in
7 transformative leadership; the ability to envision and
8 to develop strategic, purposeful, integrative, dynamic,
9 clear, multi-stakeholder public policy.

10 And one could suggest could I get another
11 description on this line of transformative leadership?

12 My reality in this is that this is akin to a new
13 industrial revolution and it's going to take dynamic
14 leadership of this magnitude to accomplish this goal in
15 2050.

16 The great news is, is I think we have a solid
17 foundation to build on and we absolutely have seen time
18 and time again, through this great State, and great
19 leaders, and really, really smart people that we can in
20 fact tackle anything we put our mind to, and without
21 compromising the very important engine that has made
22 this State great.

23 So, I will leave you with a quote from Albert
24 Einstein, "We cannot solve our problems with the same
25 thinking we used when we created them."

1 Thank you very much for having me.

2 COMMISSIONER SCOTT: Thank you very much for
3 that terrific presentation. It's like we've got to get
4 our sleeves rolled up and get going right now.

5 Let me turn to Professor Joan Ogden, welcome.
6 Dr. Joan Ogden is a Professor of Environmental Science
7 and Policy at the University of California, Davis, and
8 Director of the Sustainability Transportation Energy
9 Pathways Program at the campus's Institute of
10 Transportation Studies.

11 Her primary research interest is technical and
12 economic assessment of new energy technologies,
13 especially in the areas in alternative fuels, fuel
14 cells, renewable energy and energy conservation.

15 Her recent work centers on the use of hydrogen
16 as an energy carrier, hydrogen infrastructure
17 strategies, and applications of fuel cell technology in
18 transportation and stationary power production.

19 She has served on California State Committees on
20 Hydrogen and Greenhouse Gas Issues, the USDOE Hydrogen
21 Technical Advisory Committee, the IPCC Panel on
22 Renewable Energy, and on National Academies Committees
23 Assessing Hydrogen Fuel Cell and Plug-In Hybrid
24 Vehicles.

25 She holds a BS in Mathematics from the

1 University of Illinois and a PhD in Theoretical Physics
2 from the University of Maryland.

3 And I look forward to being out at the HTAC
4 presentation with you next week. So, thank you so much
5 for joining us today.

6 MS. OGDEN: Thank you, Commissioner Scott.

7 I'm going to take a few minutes, now, and I
8 think reinforce the message we're hearing quite a lot in
9 this meeting about the importance of a portfolio
10 approach tackling these interlinked problems of moving
11 toward sustainable transportation.

12 So, I'm going to give you some highlights of
13 what the research and recent studies are telling us
14 about these topics.

15 Okay, so the first point, which has been made a
16 couple times before, is the transport sector is
17 absolutely key to reaching economy-wide goals for a low
18 carbon energy future.

19 This shows a graph from the International Energy
20 Agency looking globally at what we would have to do to
21 move from a baseline scenario, where we have a
22 considerable amount of global warming going on, to
23 something called a BLUE map scenario where there's a lot
24 less, where it will stabilize the climate.

25 You'll see transport reduction, shown in green

1 there, are a major thing. Achieving transport policy
2 goals on the order of an 80 percent reduction in
3 emissions by 2050 is going to mean very deep cuts in
4 transport-related GHGs.

5 There are diverse options for addressing these
6 energy challenges, climate change, but also air quality,
7 energy security, and they sort of fall in three general
8 buckets.

9 One is improving efficiency. This could be
10 things like improving vehicle fuel economy, designing
11 roads so that you relieve congestion, that sort of
12 thing.

13 Another bucket is alternative fuels and vehicle
14 technologies, including some of the fuels we've been
15 talking about, electric vehicles, biofuels and hydrogen.

16 And, finally, reducing the vehicle miles
17 traveled through carpooling, mass transit, urban design.

18 So, all of these things can be done to help
19 reduce the greenhouse gas emissions and improve our air
20 quality.

21 What our research shows at UC Davis, as part of
22 the Sustainable Transportation Energy Pathways project,
23 we looked at each one of these options. And, you know,
24 there have been advocates who would say, well, let's put
25 all our eggs in one basket. Let's do this all with

1 battery vehicles, all the five fuels.

2 What we find, instead, is that a portfolio
3 approach is needed. If we're going to do the deep cuts
4 that we want to see in carbon emissions by 2050, we're
5 going to have to do several things at once.

6 One is raising the efficiency, making our
7 vehicles as efficient as possible, reducing demand
8 through smart growth policies, and implementing low-
9 carbon fuels, biofuels, electricity, hydrogen.

10 And one of the nice things about going with
11 electric drive vehicles, and I'll put both battery cars
12 and hydrogen fuel cells there, is that using those fuels
13 gives you a couple of benefits.

14 You can have a much more efficient vehicle.
15 Battery vehicles are maybe three or four times as
16 efficient as a comparable gasoline internal combustion
17 engine. Fuel cells may be two to three times.

18 You get the efficiency. You also can access
19 vast low-carbon resources you can make electricity from.
20 You know, think wind, solar, lots of renewables, and the
21 same thing for hydrogen.

22 So, our study suggests that a future sustainable
23 transportation system, by 2050, will have a variety of
24 highly efficient vehicle types and low-carbon fuels.

25 And these will include plug-in electric

1 vehicles, hydrogen fuel cells in the light-duty sector.

2 We may see some low-carbon liquid fuels, could be

3 biofuels and other things, in heavier-duty applications.

4 And we're going to have a variety of primary

5 sources for fuels, not just petroleum.

6 Here's one, and there will be a test on this, so

7 I don't know if you guys are all taking notes on these

8 next few slides here.

9 But this is what we have today, 95 percent of it

10 goes through the pathway of petroleum to gasoline or

11 diesel, used in an internal combustion engine vehicle,

12 maybe a hybrid. A little bit of biomass, maybe two

13 percent of the energy comes from that, now, and a little

14 bit of natural gas.

15 But it's mostly petroleum fuels, 94 percent,

16 internal combustion engines 99 point plus percent.

17 Here are the possibilities. And we see a whole

18 lot of things we could do and there are demonstration

19 cars on many of these pathways.

20 The green pathways are renewables. They could

21 be very low carbon. They can make electricity in a

22 variety of energy carriers, and use these in very

23 efficient vehicles, such as battery vehicles and fuel

24 cell vehicles.

25 So, there's a whole range of things we can do.

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1 And by the time we get to 2050, we're going to see a
2 number of these. It's not going to be a mono-culture of
3 petroleum and ICEs anymore.

4 This is a study, again, from the International
5 Energy Agency. They looked at the light-duty sector,
6 and going from the graph on the left, which is some
7 energy efficiency implemented, and so on, to the one of
8 the right which limits us to a two degree rise in global
9 average temperature.

10 We see a lot of electric vehicles coming in.
11 And these include hybrids, also plug-in electrics and
12 hydrogen fuel cells.

13 And so, the light duty sector in the future, in
14 a low-carbon world, we want to stabilize the climate,
15 there's going to be a lot of electric drive.

16 Let's look at economics. How much is it going
17 to cost to implement these transformative transitions
18 that we're talking about?

19 Well, our studies and a number of others see the
20 potential to cost-effectively address climate and energy
21 goals, and meet our growing needs for mobility.

22 A recent study by the National Academies that
23 came out in 2013, shows that the long-term societal
24 benefits are a lot bigger than the cost to make these
25 transitions.

1 So, what we see in this graph here, we start at
2 2010 and then 2020, 2030, and going out to 2050. The
3 dark line on the bottom, the purple line, is what you
4 might need, according to this study, to put in as
5 subsidies at the U.S. National level to get a variety of
6 these new types of vehicles, especially the light-duty
7 electric vehicles started.

8 I think in this particular scenario there were
9 maybe a lot of hydrogen vehicles and a lot of battery
10 vehicles, both.

11 And then -- so that's the negatives; that's the
12 cost. Above the line we see all the benefits. And this
13 is in terms of GHG mitigation, but also in terms of
14 reducing the effects of petroleum uncertainty, in terms
15 of saving energy.

16 If we'd put air quality on there, that would
17 have been right up there as well.

18 The dotted line on top is the net present value.
19 And so when that goes positive that means you're making
20 money, the economy is benefitting from this.

21 So, once we get through the initial costs, we're
22 going to see a lot of benefits to the economy from
23 implementing this strategy.

24 So, it's a good thing for us economically, as
25 well.

1 So, making this transition; we have a revolution
2 that we're looking at to meet GHG goals, new types of
3 vehicles, new infrastructure, incorporating low-carbon
4 primary supply, things like renewables into the supply.

5 And each of these faces some non-trivial
6 challenges as we toward full commercialization.

7 Just a couple of thoughts here on what's
8 involved. This is a new technology, so maybe think of
9 it as being something like hydrogen fuel cells.

10 Typically, with a new automotive technology you
11 have a research and development period, prototyping,
12 pre-commercial sales, early commercialization, and then
13 you penetrate the market.

14 And one of the things to look at here is this
15 takes a certain amount of time and it takes a certain
16 amount of time before you lift off the X axis. That is
17 before you start to see noticeable numbers of vehicles
18 in the fleet. But you can't short circuit any of these
19 steps if you want to get to your goal of 2050, of having
20 a major market penetration of, say, 50 percent of
21 vehicles on the road being this new technology. You
22 have to start now.

23 So, even though the time frames are long, you
24 have to start now and go through these steps.

25 And so, that's one area where policy is really

1 critical.

2 And I heard a number of things people talked
3 about today, let's say in the ZEV realm, getting those
4 chargers out there, getting the hydrogen fuel cell --
5 the hydrogen infrastructure out there for fuel cells,
6 those kinds of things and also supporting the early
7 commercialization of these vehicles.

8 So, it's very important to nurture these markets
9 so we can go through that little negative blip before we
10 get all the large, positive benefits of these.

11 This is just another thing, historically, it
12 takes a while to build infrastructure, as well.

13 So, transitions take time, but the need to
14 act -- you need to act now. And what we do today can
15 have major implications in getting us on these paths
16 towards successful commercialization of these
17 technologies.

18 So, success, we think, will require
19 public/private collaboration and adaptive learning as we
20 go along the way, and policy.

21 And so, we need to think about both the near-
22 term needs and the longer-term potential, and try to
23 fill in the gaps and leverage private investment, and
24 maybe hydrogen infrastructure would be one example,
25 charging infrastructure would be another.

1 Again, revolution is needed. It appears to be
2 technically feasible to cut our emissions very strongly
3 by 2050. In order to do this we're going to need a
4 portfolio. No single fuel or vehicle is going to
5 dominate the future.

6 And we think that the investments needed to
7 launch new clean vehicles and fuels are much less than
8 the money flows in the current energy system, and the
9 long-term benefits appear to greatly outweigh the costs.

10 So, I'll end here, thanks.

11 COMMISSIONER SCOTT: Thank you for that terrific
12 presentation.

13 I actually had a couple of questions for you.
14 One was on your economics of a portfolio strategy slide,
15 and it's where you mentioned the -- and it had the
16 purple line for subsidies.

17 And I was wondering if you could talk to us a
18 little bit more about when you say subsidies there what
19 do you mean? Because I think that's broader than just
20 funding programs like the Alternative and Renewable Fuel
21 and Vehicle Technology Program.

22 MS. OGDEN: Right. In this particular study,
23 this was built around a so-called consumer choice model,
24 this analysis.

25 And so what it did was it looked at two vehicles

1 and said if you're a consumer, which one are you going
2 to buy? And they tried to make the utility or, you
3 know, the cost benefit of the vehicle be the same as a
4 reference vehicle.

5 So, let's say our reference is gasoline. In
6 this case they said how much would you have to subsidize
7 the buyer in order to incentivize them so that they'd be
8 likely to buy, let's say, some kind of electric vehicle?

9 And this could be -- so, subsidies could include
10 things like you get a rebate when you buy the vehicle.
11 Let's say you get, you know, a few thousand dollars back
12 when you buy an electric vehicle.

13 It could also include things like subsidies for
14 fuel. It could include, say, okay, for the first, you
15 know, five years you own the vehicle you're only going
16 to have to pay, you know, the equivalent of gasoline
17 price per mile, or less.

18 So, there were a number of subsidies that they
19 put into this of that sort.

20 And they were really aimed at the consumer, at
21 helping the consumer make that decision.

22 COMMISSIONER SCOTT: Thank you for that.

23 The other question I had was two slides up, on
24 the vehicle commercialization timeline.

25 MS. OGDEN: Yeah.

1 COMMISSIONER SCOTT: And when I look at that and
2 I think about the presentation that we got this morning
3 from Randy Roesser and from Laurie ten Hope, that
4 programs like the EPIC Program or like the Alternative
5 and Renewable Fuel and Vehicle Technology Program, which
6 definitely does need a new acronym or, you know, or AB
7 8, altogether, in all of the investments we're making
8 can help accelerate that timeline, potentially.

9 MS. OGDEN: Right. Well, that is true. If
10 we're looking at, say, being down in here. Part of
11 incentivizing, getting these pre-commercial sales going
12 is building the infrastructure so people will buy the
13 cars. And that's a very important thing.

14 And also, supporting some of the early buyers,
15 maybe, you know, with a rebate when they buy an electric
16 car. All of those things are designed to help launch
17 these early sales, both pre-commercial and early
18 commercial. So, they really are critical to getting
19 that going.

20 The thought is that once you get more of the
21 electric vehicles done and, let's say, battery
22 technology advances or fuel cell technology, the cost of
23 those vehicles will come down, also. And so, maybe you
24 won't need to sweeten the incentives and there will be a
25 lot of chargers out there.

1 But these are kind of early things that are
2 absolutely critical. If you short-circuit those, you
3 never get off the X axis.

4 COMMISSIONER SCOTT: Other questions from -- no.
5 Okay, terrific, thank you so much.

6 So, now I would like to welcome Barry
7 Wallerstein, who holds a Doctorate in Environmental
8 Science and Engineering from UCLA, and MS and BS degrees
9 in Biological Science from USC.

10 He has over 30 years of experience in urban
11 planning and environmental assessment, with an emphasis
12 in air pollution control and public policy development.

13 Dr. Wallerstein has served at the South Coast
14 Air Quality Management District as the Executive
15 Director since 1997.

16 Earlier in his career, Dr. Wallerstein worked in
17 corporate environmental administration for Northrup and
18 in rule development with the State Air Resources Board.

19 He currently serves on the Mobile Sources
20 Technical Review Subcommittee for the Clean Air Act
21 Advisory Committee to the U.S. Environmental Protection
22 Agency, and as an Ex Officio Member of the Executive
23 Committee of the National Academy of Science's
24 Transportation Research Board.

25 I'm delighted that you're here and I'd really

1 like to also thank you for your role and your support in
2 the reauthorization of AB 8. It's so important. And
3 thank you for being a champion of that and thank you for
4 coming here to talk with us today.

5 MR. WALLERSTEIN: Thank you, Commissioner Scott.
6 And I just want to thank the CEC for the opportunity to
7 be here. And I want you to all know that I think our
8 relationship is the strongest it's ever been between our
9 two agencies.

10 And so, the work you're embarking on here, you
11 can count on us to help in any way we can in the form of
12 partnership.

13 What I'd like to do is put a little more
14 context. But I think in reality what I'm going to be
15 doing is joining the AQMD's voice to the choir that
16 you've been hearing all day, and emphasize at several
17 points that we are in harmony about how we need to
18 proceed looking to the future.

19 And one of the things that has been mentioned
20 today is the need to break down silos and to do
21 integrated planning. Planning that addresses our energy
22 issues, or local air quality issues, climate change, and
23 transportation and land use.

24 And I think what we find, as you've been hearing
25 today is, in my view, it's like going to the supermarket

1 and getting a four-for-one sale. So, for each dollar we
2 need to leverage those for our multiple objectives.

3 And in fact, if you look at the plans that are
4 under development at this time, and this is not a
5 complete list, we look at your IEPR Update that we're
6 kicking off today, we look at the update of the AB 32
7 Scoping Plan that's underway at CARB. CARB's developing
8 a freight strategy.

9 Caltrans, Under Map 21, is developing a freight
10 mobility plan.

11 There's a National Freight Advisory Committee
12 that is developing recommendations relative to goods
13 movement.

14 And the last two items are really important to
15 us. We have to update the State Implementation Plan in
16 2016 for ozone, and I'll speak to how high a mountain
17 we're going to have to climb.

18 And for the first time, the SIP Update is
19 coinciding with the RTP. They're perfectly in sync.

20 So, all of these documents, all of these efforts
21 and all of the things that flow out of these plans need
22 to be coordinated, talking to one another, and
23 leveraging against one another.

24 It's been mentioned throughout the day that
25 mobile sources are a huge portion of the pollution

1 problem. This is relative to our criteria pollutant
2 emissions. And you can see, when you add all the mobile
3 source emissions together it's about 80 percent of the
4 pollution problem in the year 2023.

5 This also illustrates the fact that we're not
6 talking about just one pollutant. We're talking about
7 oxides of nitrogen that form ozone and particulate
8 matter. We're talking about directly emitted
9 particulate matter. And we're talking about air toxics
10 at the local level.

11 And as other speakers have mentioned, we're also
12 talking about greenhouse gases.

13 Those local pollutants cause very significant
14 health effects. This is well established. I know the
15 Commission is well-familiar with this.

16 But I do want to highlight the fact that in the
17 last seven years or so there has been emerging
18 scientific, medical evidence regarding the link of
19 public health impacts to air emissions related to
20 traffic, and near roadside emissions.

21 So, when we're thinking about SB 375, we're
22 thinking about sustainable communities, moving people
23 closer to their source of mobility. We have to be
24 cleaning up those transportation sources because
25 proximity does matter. And the medical literature is

1 there that demonstrates that.

2 This is a chart that you may have seen us use
3 before, but it is really a critical one that hits to the
4 heart of the magnitude of the problem.

5 And I would say that if you saw a similar chart
6 for the San Joaquin Valley, it would be very similar.
7 The only difference would be agricultural emissions
8 would be a bit larger percentage.

9 But this is looking at 2023. Just nine years
10 from now we have to reduce NOx emissions by two-thirds
11 beyond all existing rules and regulations that are on
12 the books, including the future effective ones.

13 And if we look out to 2032, to meet the Federal
14 Ozone Standard that is 75 parts per billion, we have to
15 reduce by at least three-quarters.

16 And as Board Member Berg mentioned, the USEPA
17 has under consideration a further tightening of the
18 ozone standard, which would lower it to 70 parts per
19 billion, which would be roughly equivalent to a 90
20 percent reduction in NOx emissions.

21 So, the time is short and we certainly don't
22 have the luxury of delaying actions.

23 And I want to point out one thing, as you think
24 about this challenge that we all face to meet
25 local/federal clean air standards.

1 There's a debate right now in the State about
2 should we have an interim greenhouse gas target? Should
3 we set some target for 2030?

4 I would say to all that are concerned about
5 that, we already have done it through the criteria
6 pollutant and ambient air quality standards that the
7 Federal government has set.

8 So, what I will show in a couple of charts, what
9 you've seen earlier today about 2050, that already has
10 to all be sped up or we'll have no chance of meeting the
11 Federal Ozone Standards in South Coast, San Joaquin
12 Valley and, in all likelihood, here in the Sacramento
13 Valley area as well.

14 This is also what we think is an important chart
15 to hit home how badly we need this transformation that
16 Board Member Berg was talking about.

17 In South Coast, if you look at the background
18 ozone that comes in off the ocean, you add the
19 biogenetics from our forests, and plants and gardens,
20 that takes you to 48 parts per billion of the allowable
21 75 ppb. That's about 64 percent of the allowable is
22 already background, basically.

23 Then if you look at goods movement,
24 transportation sources, what you see is that takes us to
25 63 parts per billion or 85 percent of the allowable.

1 If the Federal government lowers that allowable
2 from 75 to 70, it will take us to 90 percent. That
3 means that all the passenger cars and all the
4 stationary, and area sources combined could only be 10
5 to 15 percent of the allowable NOx emissions.

6 So, clearly a major emphasis of our efforts
7 needs to be on logistics and goods movement.

8 And as you heard from your staff, and from Board
9 Member Berg, these are, you know, a major point of
10 emphasis in our programs.

11 I also wanted to -- could you back that up one
12 slide?

13 I wanted to talk about the portfolio because we
14 can define portfolio in a lot of ways, leveraging money,
15 and how we use our pots collectively to the advantage of
16 the public, technologies.

17 But I think it's also important to define it as
18 one size does not fit all, as the Commission is aware
19 of. Vehicles have different purposes, different duty
20 cycles.

21 And so, as Professor Ogden was noting, different
22 fuels or technology types, in combination, fit different
23 needs. And so, it's important that we're nurturing and
24 developing various technologies and fuels at the same
25 time to fit the multiple niches that exist for us to

1 have a functioning society.

2 Now, we worked with the California Air Resources
3 Board a couple years ago on what we call a Vision
4 Document, and the San Joaquin District participated in
5 that.

6 And working backwards from the State's climate
7 objective for 2050, the analysis showed that by 2040
8 every vehicle sold would need to be a zero emission
9 vehicle in the light-duty sector.

10 However, as I mentioned a moment ago, if you now
11 think of the 2032, 75-parts-per-billion ozone standard,
12 and what's needed to meet that, we've got to take that
13 dashed red line and move it forward another decade.

14 So, it is a very large mountain for us to climb.
15 And the same can be said on the heavy-duty vehicle side,
16 as well.

17 Now, that just says, boy, do we have a task
18 ahead of us. And for all the people that are in the
19 room that are watching, that are a lot younger than me,
20 know that you're going to have a really fun career to
21 help develop all and implement all of the solutions that
22 are going to be needed.

23 But let's talk about the good news. In addition
24 to what Board Member Berg noted, our air quality is
25 vastly, vastly improved over what it was just decades

1 ago. And we've been able to have business growth over
2 the decades at the same time.

3 Now, I love this slide because it shows an array
4 of vehicles for various, you know, needs that are now on
5 the market, or coming on the market, or were introduced
6 as the test vehicles, as predecessors to commercial
7 vehicles.

8 And when I look at a slide like this, this makes
9 me feel optimistic about our future if we're wise about
10 our investments and our policies.

11 And the same thing can be said on the heavy-duty
12 truck side. Because as we have seen historically, with
13 the introduction of technologies in the light-duty
14 vehicle sector, and then making their way to the heavy-
15 duty vehicle sector.

16 So, in the Class 7 and 8 trucks, the very large
17 trucks, we're seeing vehicles that are battery electric.
18 We're seeing vehicles that are hybrids. We're seeing
19 fuel cell vehicles.

20 And so, the same sort of transition that is
21 hitting the market, now, in the light-duty vehicle
22 sector is also coming for the heavy-duty vehicle sector,
23 which is our largest source of NOx emissions.

24 We're also very interested in an overhead
25 catenary truck technology, and are working with the

1 Commission and other partners to have a demonstration in
2 the port area, where a vehicle of this type could serve,
3 for example, in near-port rail yard, and could come on
4 the catenary on zero emission miles.

5 And the first generation trucks could be natural
6 gas or operate on any other fuel. And maybe,
7 ultimately, we have zero emission miles for the entire
8 trip length.

9 So, you can take a segment of the highway, make
10 it zero emission miles, and then have very good range
11 once you come off the catenary, and also have that be an
12 extremely low emission or zero-mile vehicle.

13 And the lower image is the vision fuel cell
14 truck that a number of us are involved in the
15 development of.

16 I don't want to leave out natural gas, which you
17 heard from your staff about the project we're joining
18 working on because as we talk about portfolio niches,
19 natural gas has a definite niche and could play an
20 extremely important role.

21 As the Commission knows, the economics on
22 natural gas have changed significantly.

23 And so we see, even in the rail sector, or ship,
24 large ship sector, where now they're interested in
25 natural gas a fuel.

1 And the development work that our organizations
2 are doing together to develop the next generation of
3 very low-emission natural gas engines, that will in
4 essence be zero emission equivalent, can be and should
5 be an important part of our future.

6 We've heard today about technology and market,
7 and so we have to think about the market and make sure
8 that we get the technology right. You know, and so I'm
9 going to do several plays on what comes first, the
10 chicken or the egg, obviously.

11 Vehicles and stations, you've heard about this
12 today. I would be remiss if I didn't also say, relative
13 to fuel cell vehicles, we're going to get the first ones
14 later this year and then, hopefully, many more next
15 year.

16 Your work, your funding of the hydrogen fueling
17 infrastructure is absolutely critical. Otherwise, we'll
18 have a misstep with vehicles, but no fueling, or
19 inadequate fueling stations.

20 And people will get the wrong impression about
21 the technology.

22 Those of us who have driven the vehicles, the
23 demonstration vehicles, know you can't tell the
24 difference between a gasoline vehicle and a fuel cell
25 vehicle. It's a really wonderful, zero emission, low

1 GHG option for the future.

2 Regulations and incentives, this is something
3 that I think we're going to just continue to use, and we
4 need to use the incentives in a way that they truly
5 compliment and facilitate the implementation of the
6 regulations.

7 And your renewed AB 118 funding can play a very
8 important role in that regard.

9 We also heard today, and I also want to comment
10 on this, about the ability to have the incentive funding
11 in these newer vehicles serve all Californians, not just
12 certain segments of our population.

13 And we, at the South Coast District, do believe
14 that there will be a waterfall effect. As vehicles are
15 cycled through the economy, people can have an
16 opportunity to maybe buy used cars that are a couple of
17 years old, if they maybe couldn't buy a new one.

18 But one of the things I've asked my staff to
19 look at is we have been doing a lot of funding with Prop
20 1B, working with the Air Board on trucks, as an example.

21 And many of the single truck owners, they are
22 not wealthy individuals. They go out and work long
23 hours to make a living to support their family.

24 And we have found a way to get them into cleaner
25 trucks. And I think if we look at some of the economics

1 in terms of how large a loan they've had to take out,
2 and what their income is, and we then draw comparisons
3 back to, let's say, a small-sized battery electric
4 vehicle, like a Chevy Spark, that there are
5 opportunities, if we design our programs correctly.

6 We have to make sure that if we're going to
7 offer things like tax incentives, that they make sense
8 for that segment of the population, as opposed to
9 offering the incentive, for example, in a different
10 form.

11 So, I think collectively, if we get together, we
12 can think of new ways to better invest our incentives to
13 make sure all Californians benefit.

14 This is just to illustrate that relative to our
15 agency, we have a Technology Advancement Office. We do
16 an annual update.

17 And the same sort of portfolio approach that I'm
18 describing to you, that Sandy and Joan have described to
19 you is -- we don't just talk the talk, but we walk the
20 talk.

21 And you can see that we are investing very
22 heavily in electric and hybrid technology, and fuel cell
23 and hydrogen technology, but we're not leaving out other
24 technologies because we want those to progress as part
25 of the overall menu of options.

1 So, what's needed? Maximizing co-benefits, as
2 I've said. The investors, the producers of the
3 technology need policy certainty. The end-users of the
4 technology do need help, especially in the early years.

5 We have to make sure that we have a clean grid.
6 So, clean generation refers to the grid. And we're
7 working with you on that as best we can.

8 As well as making sure we have a variety of
9 fuels available to serve the needs of the public and the
10 end-users.

11 I don't think we do enough on the business
12 incentive side for California. I think we invest a lot
13 of incentive dollars and we don't necessary require, in
14 return, in appropriate places that those dollars
15 generate actual jobs and business location in
16 California. And I think that's something we should all
17 probably discuss further.

18 And you've heard all day long, leadership,
19 leadership, leadership. Do more of what you've done in
20 the past in the way of leadership.

21 And I'd like to leave everyone with this last
22 thought. I've been in this business, as Commissioner
23 Scott noted, over three decades. I think we're at an
24 absolutely critical point of time where we have to seize
25 the day if we're going to provide for our energy needs,

1 energy security, our local air quality, and public
2 health, and protect the globe from climate change.

3 And I want to assure you, again, that our agency
4 will do everything we can to partner with you, the Air
5 Board and others to seize the day and make sure that the
6 steps that are taken now will be looked upon, in
7 retrospect, as true leadership that kept California
8 strong and healthy.

9 Thank you.

10 COMMISSIONER SCOTT: Thank you very much for
11 that excellent presentation. And I want to echo that
12 offer. I appreciate very much your offer of partnership
13 and working together, with our sleeves rolled up. And
14 that is something that we are committed to, at the
15 Energy Commission.

16 I look forward to continuing our good work,
17 together with you, and with the Air Resources Board and
18 other partners on this.

19 A question that I had for you, on the Prop 1B
20 example that you mentioned with the trucks, and getting
21 the truck drivers into the cleaner trucks was are there
22 any kind of lessons learned from that, that you would
23 share with us?

24 MR. WALLERSTEIN: I think there are. But if I
25 could just first note, and it speaks to the feasibility

1 of meeting the task in front of us, when folks said
2 we're going to change out all the trucks that do drayage
3 from the ports in a period of five years, and some of
4 those trucks were as old as 1953, okay, the year I was
5 born, people thought, oh, you're out of your minds.

6 It didn't take five years. It took about three
7 and a half years because we provided the incentive funds
8 smartly and we worked well together.

9 But we've learned quite a bit through that
10 process in terms of the kind of paperwork and
11 administrative side of how we get people loans, and
12 through the process.

13 And I think we can apply some of those lessons
14 learned to how we move forward in the future.

15 And as I was saying before, the form of the
16 incentives can be critical and so, I think there are
17 also lessons learned there.

18 COMMISSIONER DOUGLAS: Yeah, and I'll just add I
19 have to step out for a two o'clock commitment. But I
20 want to thank everyone on the panel.

21 And Barry thanks for your kind words. We've
22 certainly worked closely together over the years and
23 this is a really important priority for you and for us,
24 so look forward to the partnership. And, of course,
25 it's a long-standing partnership.

1 COMMISSIONER SCOTT: And I think next, do we
2 have Alan Lloyd on the phone? Okay, terrific.

3 So, our next panelist is Alan Lloyd. Alan
4 served as the President of the International Council on
5 Clean Transportation from 2006 to 2013.

6 He is one of the founding members of the ICCT
7 and now serves as President Emeritus and is an active
8 Board member.

9 Dr. Lloyd served as the Secretary of the
10 California Environmental Protection Agency from 2004
11 through February 2006, and as the Chairman of the
12 California Air Resources Board from 1999 to 2004.

13 Prior to joining the California Air Resources
14 Board, Dr. Lloyd was the Executive Director of the
15 Energy and Environmental Engineering Center for the
16 Desert Research Institute at the University and
17 Community College System of Nevada, Reno, and the Chief
18 Scientist at the South Coast Air Quality Management
19 District from 1988 through 1996.

20 Dr. Lloyd's work focuses on the viable future of
21 advanced technology and renewable fuels, with attention
22 to urban air quality issues and global climate change.

23 Dr. Lloyd was the 2003 Chairman of the
24 California Fuel Cell Partnership, a co-founder of the
25 California Stationary Fuel Cell Collaborative, and

1 member and prior co-chairman of the U.S. Department of
2 Energy, Hydrogen and Fuel Cell Technical Advisory
3 Committee, which is HTAC.

4 And I look forward to, Alan, seeing you there
5 next week. And please, go ahead and take it away.

6 MR. LLOYD: Good, can you hear me?

7 COMMISSIONER SCOTT: Yes.

8 MR. LLOYD: Okay, great. Well, thank you very
9 much, Commissioner Scott. And I won't take offense with
10 the Commissioner leaving there.

11 It is my place to participate. And I want to
12 congratulate, as the others, CEC for reaching out to
13 many stakeholders in this arena.

14 And I think I would also reiterate many of the
15 comments I've heard today in the importance of
16 California's leadership at all levels, which I've seen
17 throughout the world. And I've tried to illustrate some
18 of those points as we move ahead.

19 Next. What I'm going to try to cover here is
20 some of the, obviously, transportation focus, mostly in
21 light-duty, some on heavy-duty, weave some of the work
22 on fuels there, legislation and regulation, that
23 importance.

24 U.S. leadership, the importance on the global
25 scene, and then some of the lessons for future

1 directions, what I feel is important for California and
2 continue to that.

3 Next. So, why is California a recognized
4 leader? And I think this comes really back to the
5 historical air quality challenges that have been
6 referred to today, the people living down in L.A.

7 And, of course, now is familiar to those in
8 China. And now, they're looking to California, well,
9 how did you solve the problems here?

10 The other key piece of that is the provision of
11 the Clean Air Act in 1970, and the subsequent amendments
12 which allowed California, basically, to have a
13 grandfather role to move ahead of everyone else. And
14 that's been such a wonderful piece of legislation to
15 guide us ahead.

16 And so, California's become the test ground for
17 the rest of the U.S. and, subsequently, for many parts
18 of the world.

19 The other part of it that's key is the sustained
20 public, legislative and administrative support
21 throughout the many years in California. And that's
22 been referred to today, to hear the excellent
23 relationships among all the various entities. Not
24 always the smoothest, but always in terms of committed
25 to getting the best environmental protection for

1 California.

2 And then you've had the leadership of CARB, in
3 association with the air districts for the
4 transportation side and, obviously, more recently, with
5 CEC working with some of the infrastructure.

6 Next. Just want to point out here, again, the
7 issue of the Federal Clean Air Act and how California
8 has, in fact, been the leader here. And also how, in
9 fact, the California regulations can be adopted by other
10 states.

11 Not necessarily all of them have, as we've seen
12 in some of the ZEV programs, and as we've seen in the
13 ZEV now how California still leads the way in developing
14 infrastructure for, particularly, the ZEV program.

15 And just a few examples of California First,
16 which people point to in terms of lead-free gasoline.
17 The low sulfur fuels, which continues to lead. Even
18 more recently you see EPA moving ahead, but trying to
19 attain California's low-sulfur fuels.

20 And as I've traveled over the world, the whole
21 issue of California moving ahead on low-sulfur fuels is
22 critical to all the after-treatment there.

23 The first three-way catalytic converter which,
24 of course, was enabled by lead-free gasoline.

25 The stringent NOx control, which has continued

1 to be a hallmark of what California has done, not only
2 VOC control, but also NOx control, and I'll refer to
3 that, how some people have looked at that part of it.

4 And then another leadership there was the first
5 greenhouse gas emission standard for light-duty
6 vehicles. Not in efficiency standards, late to the
7 case, because California's preempted from that, but the
8 first greenhouse gas.

9 And, of course, hearing Senator Pavley there
10 this morning reminded me of her critical role on that,
11 which allowed then, opened the door for the U.S. to move
12 ahead.

13 Next. Type of policy instruments, and these
14 have been discussed, but it's not only the performance-
15 based emission standards, and these are so-called
16 technology forcing standards, including what I would say
17 not picking winners or losers.

18 And I also maintain that the ZEV program sets
19 the performance standard of zero grams per mile. Yes,
20 it does limit the technology attained to that, but in
21 the same way the strict NOx standards kept diesels out
22 of California until the technology caught up with the
23 regulation. I feel similar to the ZEV program and the
24 zero emission program there.

25 These are some examples of the zero emission

1 funding, the incentive funding.

2 The markets-based program, which is coming more
3 into play as, in fact, we've got some resources there.

4 And the key part of the enforcement and
5 monitoring programs, which in different parts of the
6 world are very lax, which there's no point in setting
7 tough regulations if in fact you don't have strong
8 enforcement and monitoring programs, and the ability to
9 recall vehicles. It's a very critical message for the
10 rest of the world.

11 Next. I think another leadership role, which
12 maybe sometimes is overlooked, but when you think of it,
13 a landmark finding in 1998, by the Science Advisory
14 Committee, that diesel particulate was a toxic air
15 contaminant.

16 This is after about ten years of very
17 contentious work where they identified diesel
18 particulate as a toxic air contaminant and a probable
19 carcinogen, which then required, once you had the risk
20 assessment, you then basically had mitigation program
21 through the Diesel Risk Reduction Plan, approved by the
22 Board and for the target of being about 85 percent
23 reduction by 2020.

24 And, of course, that also has significant global
25 implications. And Tokyo followed that with substantial

1 bans on diesel. And in fact, as a real-world example
2 here, one of the recipients of this year's Haggen-Smith
3 award basically pioneered work on diesel reduction and
4 elimination in Tokyo. Again, following the lead of what
5 California was doing there.

6 And I would also say Dr. Wallerstein, and the
7 work he's done, and his staff have done identifying the
8 need to address diesel exposure reduction through other
9 programs has also been excellent.

10 Next. This just shows the example of why, in
11 fact, diesel particulate is such a key issue in terms of
12 the toxic risk posed there.

13 Next. Some of the performance-based
14 regulations, and I think these are just highlights, just
15 some examples in terms of the cleaner engines, the
16 after-treatment.

17 I mentioned the cleaner burning gasoline. And
18 I'd like to highlight that and couple that with the
19 alternative fuels, and the importance that methanol and
20 natural gas have played in, in fact, forcing to clean up
21 both gasoline and diesel.

22 I was there in the early days when they were
23 pushing methanol, and both the CEC and ARB, because in
24 fact gasoline could not attain the tough emission and
25 tailpipe standards.

1 The industry came forward with cleaner burning
2 gasoline and developed a gasoline which, in fact, could
3 meet the requirements that the -- the targets that, in
4 fact, the performance of methanol was getting.

5 Again, a tribute there to really technology-
6 forcing from California, resulting in the industry
7 stepping forward, again, to meet that.

8 We've seen the same thing with the benefits from
9 natural gas and how that's driven the diesel cleanup in
10 a substantial way.

11 On the stationary side, we've seen the
12 development of the lower NOx burners, SCR putting the
13 power plants and cleaner fuels, generally.

14 And then on the air resources, we've seen the
15 vapor recovery, both at the gas station and on board the
16 vehicles, and many places just now putting it on board
17 the vehicles.

18 And California continuing to require some at the
19 gas stations, coupled with on-board the vehicle, again
20 trying to teach the developing world the importance of
21 VUC control at the gas station both for toxics and for
22 reactive organic compounds is extremely important.

23 And then the whole issue of the solvents and
24 consumer products, et cetera, California's leadership
25 has been important.

1 The next couple of slides just highlight the
2 dramatic improvement. You can see, over the years,
3 before 1966 how it's come down in terms of the emission
4 standards.

5 And again, how those technology-forcing
6 standards have led to the industry responding extremely
7 well so now those standards can be met.

8 But again, a key message that we point out is
9 that you don't -- you set your emission standards based
10 on the health impacts that the public is exposed to.
11 And once you set the air quality standards, you do not
12 adjust those to meet the ability of the technologies to
13 meet that.

14 And that's a key philosophy that has California
15 has followed and continues to follow through the years.

16 But sometimes it's difficult for the developing
17 world to understand. And I think Dr. Wallerstein
18 pointed this out, also, very nicely, as the global
19 background of pollution increases you don't adjust the
20 health impact, the air quality standard. It just means
21 you have a tougher job in attaining those standards,
22 which means the existing and new industry has less room
23 to emit into the air.

24 And the next slide just shows on the heavy-duty
25 slide similar progress there.

1 The next slide shows some of the key California
2 leadership programs. I referred to some of these
3 before.

4 But the Low Emission Vehicle Program, with a
5 family of technologies, and especially the ZEV
6 requirement for the light-duty vehicle. While the ZEV
7 program has been somewhat controversial, I maintain it's
8 a significant driver to get us to the zero tailpipe
9 emissions.

10 The ZeBus, similar to do something there and I
11 know it's not as straight forward, and I know ARB's been
12 working to see how that can be crafted so that it has
13 the same sort of impact.

14 And today we heard many times why the buses are
15 ideal to operate in some of the low-income communities,
16 congested communities, people living near freeways.

17 And so, here's some promising progress in terms
18 of some of the battery-electric buses, so it's very,
19 very encouraging.

20 I think the leadership program for the
21 greenhouse gas regulation, following AB 1493, from
22 Pavley, was again, as I mentioned before, extremely
23 important.

24 And then we have the Low-Carbon Fuel Standard
25 which came out to reduce the carbon intensity by 10

1 percent by 2020.

2 I'd emphasize it's still an intensity program.

3 It's not an absolute cap so, a very important piece,
4 but -- say necessary, but not sufficient.

5 And then you have AB 32, with its whole family
6 of programs which has now become world leaders in many
7 of those areas.

8 Next. And some of the policies emanating from
9 that I think illustrates where, in this case here, why
10 California's got a lot of these policies was integrated
11 across many agencies, both at the State level and at the
12 local level. And you can see some major, major targets
13 there.

14 And the CEC, of course, the role it's played and
15 again, a global leadership role in appliance standards
16 and efficiency, generally, is extremely important and
17 has been held up as examples for the rest of the world.

18 The next slide. These are just some of the
19 incentives and subsidies. Some of these we mentioned
20 today, but becomes very important in terms of California
21 showing its intent and its seriousness to move ahead.

22 The vehicle registration fees, I had the
23 privilege at being at the South Coast when, in fact, the
24 first vehicle registration fee was introduced and was
25 copied rapidly throughout the rest of the State.

1 That's just one example, now, of some of the
2 dollars flowing in.

3 And we saw recently, as you talked about today
4 and congratulate you all on the passage AB 8, and
5 signing by the Governor because that is being -- will be
6 critical for the infrastructure.

7 I think the key role for CEC and ARB in moving
8 ahead these new technologies will be critical and I
9 think an example for the rest of the world.

10 The other piece I would like to get a plug in
11 here, with no pun intended, but coupling of
12 transportation renewable energy I think needs to be done
13 in a more concerted way for both battery-electric and
14 fuel cell EVs.

15 I think we have a chance here that the ZEV
16 program will only be a true ZEV program if we use
17 renewable energy. So, by coupling the whole issue of
18 renewable energy, as that mandate is growing in
19 California, together with both storage and production of
20 hydrogen can be very effective.

21 Some work along those lines is taking place in
22 Germany. California, I think, needs to catch up a
23 little bit, but I think through this program and through
24 the Energy Commission, and through the utilities that
25 there's a real chance here of continuing the leadership

1 to couple the transportation and renewable energy.

2 So, now you've got the power and the
3 transportation, together. And, in fact, you've taken
4 the fuels out in a way. So, in terms of dependence on
5 imported oil and whatnot, that will be a thing in the
6 past because if you can then couple those effectively
7 with renewable energy, wind, solar, geothermal, whatever
8 you have, you have -- I think California has a unique
9 opportunity to marry the requirements for the zero
10 emission vehicles to not only attain the greenhouse gas
11 regulations, but also it satisfies some of the strict
12 air quality goals as well.

13 Next. Again, I think the role in the developing
14 world, and I think Commissioner Scott asked me to talk a
15 little bit about that, well, how is California looked
16 at?

17 The one thing I see, most of the countries, in
18 terms of the tailpipe standards, follow the European
19 standards, which is rather interesting.

20 However, California is looked upon for
21 technology-forcing standards. So, some people want to
22 move into California when they're looking at the
23 enforcement and compliance.

24 And in fact, Chile adopted a California stricter
25 NOx standards because they've seen, more recently, some

1 of the problems that Europe has encountered by having
2 rather less strict NOx standards, still creating some
3 NO2 problem in some of the cities.

4 And, of course, as we've seen in China, the air
5 quality problems are now well-known and show that you
6 basically have to have strict controls as you develop
7 your industry.

8 The other part, I think, on the leadership is
9 California's a desired partner for memoranda of
10 understanding. And you've had several for China,
11 resulting, particularly stimulated by the recent visit
12 of Governor Brown, but they've also preceded that with
13 the work of the Energy Commission in California and
14 China.

15 More recently in India, through the
16 India/California Air Quality Mitigation Program, which
17 ARB and Scripps, UC San Diego, Professor Ramanathan has
18 been working on.

19 Mexico has been a very strong partner in working
20 together to adopt the California standards there.

21 The other piece of that is that many other
22 countries, including the U.S., get the benefit of the
23 strict California standards earlier.

24 So, the industry, rather than making cars
25 specific to California, recognize now it's easier to

1 make one car with a tougher standard, so everybody gets
2 to breathe less emissions.

3 Finally, the next slide, I think some of the
4 lessons for future directions, and I would reiterate a
5 comment that Dr. Ogden made, I think, that this will
6 require a revolution in the transportation. And it
7 badly needs California's continued leadership.

8 As we've seen what's happening on the global
9 scene with climate change, there's no leadership.

10 I think it's important to continue to include
11 the focus on both criteria pollutants and the -- sorry,
12 I think I'm one step removed here. No, that's it.

13 Sorry. Yeah, I think continue to include both
14 criteria pollutants and greenhouse health and was
15 highlighted, I think, by Dr. Wallerstein.

16 I would also single out the work that
17 California's done in black carbon, which is largely from
18 diesel particulate, which is both a climate change
19 agent, as well as a criteria pollutant.

20 I think to continue the leadership in deploying
21 zero emission technologies, full battery electrics, fuel
22 cells with renewable energy. I think that's important.

23 I think, as we've seen before, to continue
24 support for infrastructure for EV's fuel cells and for
25 emerging natural gas vehicles, especially, in the latter

1 case, for medium- and heavy-duty sector.

2 I think this has been stressed by Dr. Ogden, by
3 Dr. Wallerstein, the industry needs some surety, so
4 they've committed to producing and supplying fuel cell
5 vehicles, for example, to California. But they will not
6 do that and they will not be a success unless there's a
7 hydrogen infrastructure to basically ensure that this
8 will be a viable technology. Otherwise, it would die.

9 California, I would say, has a critical role in
10 that.

11 I think continue the implementation of AB 32
12 objectives and set the example for other countries, as
13 they are, in terms of designing effective cap and trade
14 programs.

15 And while people may argue that California
16 doesn't produce a lot of greenhouse gas in a global
17 sense, I think its reach is global in terms of setting
18 examples for others both in leadership, and in terms of
19 technology, and in terms of the models and ways in which
20 certain programs can be implemented.

21 I think it's within you, the California action
22 revenues to benefit all California residents. That's
23 being reiterated there as, for example, SB 535 and some
24 upcoming legislation.

25 And finally, I think the final message here is

1 to stay the course. It is going to take time. As one
2 of my predecessors said, this revolution is a marathon,
3 not a sprint, so it's important that California stays
4 the course.

5 I'm encouraged, though, with the cadre of smart
6 and bright young leaders in California. I have little
7 doubt that California can and will continue its
8 leadership role.

9 Thank you very much.

10 COMMISSIONER SCOTT: Thank you very much for
11 your interesting and informative presentation.

12 I have a question for you on the -- you talked a
13 lot about California's leadership and I think it's
14 really important to show how we have, as a State,
15 continued to innovate and lead the way on all kinds of
16 clean air, and climate change, and transportation
17 issues.

18 I had a question for you about the commitment
19 that California has made with programs like AB 118, and
20 through authorization with AB 8, and I'm wondering if
21 you have seen any funding programs like that, across the
22 world, that have been sort of inspired by the way that
23 California has made investments in transforming
24 transportation.

25 MR. LLOYD: Well, to date, no. I think that

1 you've seen more incentive programs coming up in China.
2 I think, Commissioner Scott, and you were there last
3 year when I took a delegation from Germany through, from
4 the German Government Ministry of Transportation --
5 Transport.

6 They were quite astounded, in fact, that
7 California, the State of California would invest in
8 infrastructure for vehicles.

9 So, they were taking that message back to the
10 government to say, look, California is doing this. We
11 should be doing something similar.

12 So, I haven't seen the fruition of that thrust,
13 yet. But I do know that there is a follow-up program
14 that ICCT is involved with the German Government to
15 highlight these sorts of exchanges and to highlight what
16 California has done. And, hopefully, in turn that will
17 then stimulate and put to shame some of those larger
18 governments to invest in the infrastructure.

19 COMMISSIONER SCOTT: Very nice. So, the seeds
20 are planted.

21 MR. LLOYD: Yes.

22 COMMISSIONER SCOTT: So, I've got a question,
23 maybe, for all of our -- I have a couple questions for
24 all of our panelists, if you would like to take them.

25 One thing, for me, that I've really enjoyed as a

1 Commissioner here, at the Energy Commission, is the
2 opportunity to get to go and visit some of the sites of
3 the projects that we've funded. It's really great to
4 see that, you know, all of this stuff is real, right.
5 There's people that are working on it. You can go drive
6 the vehicle.

7 And I'm wondering if you have -- you know, what
8 are some of the most interesting project sites or
9 projects that you've had a chance to visit in the last
10 little bit?

11 And maybe we'll start here, in the room, and
12 then we can go to Dr. Lloyd.

13 MS. OGDEN: Well, maybe I'll just make one
14 comment on that. I've been sort of tracking the
15 development on hydrogen fuel cells, especially hydrogen
16 infrastructure plans.

17 And I've been very impressed with the plans in
18 California and in several other places in the world.
19 Notably, some in Europe, in Germany, Scandinavia, UK,
20 and also in Japan, and some interest in South Korea and
21 so on.

22 So, I guess I've been struck by how globally
23 applicable these technologies are. And you can say
24 similar things for electric battery vehicles as well.
25 There are many around the world.

1 So, I think that is one thing that has impressed
2 me. And the breadth of stakeholders who are involved
3 around the world, as well, not only auto companies, but
4 also high-tech companies that manufacture components,
5 let's say, things like fuel cells, other fuel supply
6 companies.

7 So, maybe that's that one -- it's not one
8 specific project, but I've been impressed by the overall
9 growth, by the feeling that we are moving really into
10 this -- rapidly into this pre-commercial stage.

11 MR. LLOYD: I would just like to add one. About
12 a year ago, I think, went -- maybe a little bit more,
13 went to BMW, up to Moses Lake in Washington. That's
14 where they have their carbon fiber plant.

15 So, they take the precursors from Japan. They
16 have set up a factory in Moses Lake. And you say why --
17 where is Moses Lake and why Moses Lake? Well, it turns
18 out it's not far from Richland. It's served by
19 Bonneville Power, so they can get cheap, renewable
20 energy there, electricity, which is core to BMW's core
21 values.

22 Then they ship it back to Germany and they've
23 used that for the I3 electric vehicle and some in the
24 I8.

25 And again, that's then coming back into

1 California through, basically, a lower weight, more
2 efficient electric vehicle. Again, it's a linkage there
3 which spans the globe, essentially, that comes back to
4 meet a need in California in the near term, but also
5 will supply this technology to many parts of the world.

6 MS. BERG: A couple of things have come to mind.
7 I had the privilege of attending, with Dr. Dan Spurling,
8 the Blue Planet Prize in Japan.

9 And one of the things we did do was go and visit
10 Toyota, which would think, oh. We did get to ride in
11 the fuel car and we got to see the model that is
12 actually going to be released in 2015, so that was fun.

13 But one of the most impressive things is they
14 have built two city blocks that are homes of the future.
15 And that reminded me of the opening, yesterday, of the
16 Honda House on the UC Davis campus that is also a net
17 energy program.

18 But the myriad of stakeholders that also that I
19 speak to on a regular basis, young people that are
20 building apps for smart mobility, people that are
21 looking into biofuels, and looking into investing, and
22 starting their own businesses, raising capital, looking
23 how they can come to our organizations, the CEC and the
24 ARB, as they're looking at various types of biofuels
25 have been very impressive.

1 And so there's -- it is, even when you visit
2 like UCR, and you look at the technologies that are
3 coming out of the universities and these very, very
4 bright professors and young people. There are some many
5 bright stars, as Dr. Wallerstein was indicating, a lot
6 of reasons we have to be hopeful.

7 It's how we knit those together to come up with
8 a solution at the end.

9 MR. WALLERSTEIN: I think one of the things that
10 I reflect on is where we were a decade ago with natural
11 gas as a transportation fuel, both on the vehicle and on
12 the fueling infrastructure side.

13 And when I think about the things that we did at
14 South Coast, adopting fleet vehicle regulations through
15 our Technology Advancement Program, when Dr. Lloyd was
16 with us, investing in the development of the engines and
17 the vehicles, and I think about the future, and I think
18 about hydrogen fuel cells. For me, it's do it again,
19 Sam.

20 You know, that we can get there. And so, it's a
21 myriad of vehicle projects and fueling infrastructure
22 that we built, knowing that we've shown we can do it.

23 COMMISSIONER SCOTT: Terrific. So, I would like
24 to say thank you very much. I'm thrilled to have had
25 such an expert and engaging panel, and all the

1 fascinating information. And so, thank you for joining
2 us here this afternoon. It was delightful to have you
3 all.

4 (Applause)

5 COMMISSIONER SCOTT: We are at our public
6 comment portion of the agenda and I have some blue cards
7 here in my hands.

8 The first one is from John Shears, at CEERT.
9 And he will be followed by Chuck White from Waste
10 Management.

11 MR. SHEARS: Good afternoon, Commissioner Scott.
12 Yes, my name's John Shears, I'm with CEERT, the Center
13 for Energy Efficiency and Renewable Technologies, and
14 also represent CEERT on the AB 118/AB 8 Advisory
15 Committee.

16 I just wanted to echo Dr. Lloyd's comments about
17 also making sure, and this also relates to Dr.
18 Wallerstein's remarks about siloing, that we need the
19 renewable electricity and the renewable fuel to fuel the
20 ZEVs. And some of that might, in fact, end up fueling
21 some of the fuel cell cars, although that's further down
22 the road. But people who were at the launch for the
23 Honda Smart Home, yesterday, saw that Honda and the
24 Energy Efficiency Center at Davis were also thinking
25 along those lines.

1 In terms of planning for renewable power, you
2 know, our thinking at CEERT right now is while we have
3 the cap and trade program, and that program might be
4 extended at some point past 2020, we need to inform
5 what's happening on the transmission system and the
6 electrical grid in a more methodical and well-thought-
7 out pattern than just sort of leaving it to a cap and
8 trade program to, you know, hopefully realize some goals
9 on the electrical grid.

10 So, we're talking with the sister agencies at,
11 you know, the PUC and the ISO about these issues, and
12 hope to work with the Energy Commission in terms of how
13 we can go about planning for a grid that can help
14 realize those low-carbon goals.

15 So, I just wanted to make that observation.
16 Thank you.

17 COMMISSIONER SCOTT: Thank you.

18 So, next is Chuck White from Waste Management.
19 And he will be followed by Ray Pingle from Sierra Club.

20 MR. WHITE: Thank you very much, Commissioner
21 Scott. My name is Chuck White, with Waste Management.
22 Waste Management, also a member of the Bioenergy
23 Association of California -- sorry about that -- and
24 that's headed by Julia Levin, whom I sure you know was a
25 former Commissioner here.

1 Waste Management is on the road to have 80
2 percent of our heavy-duty fleet converted to natural gas
3 by the year 2020, about 100 percent of that by 2020 will
4 be run on renewable natural gas, with the carbon
5 intensity of only about 20 percent of diesel baseline.

6 So, we're pretty excited about that prospective.
7 If we were a party that had a compliance obligation
8 under the Low Carbon Fuel Standard, which we don't, but
9 if we did we would exceed it by about fourfold in
10 meeting the carbon intensity reduction in the fuels we
11 use.

12 There's a recent report from Europe that I want
13 to hand out to you, it's called "Wasted: Europe's
14 Untapped Resources".

15 And Europe shows that from urban, agriculture
16 and forest resources 16 percent of all the
17 transportation fuels could be met by those resources.

18 And we think very similar numbers would be true
19 for California.

20 We're excited about a workshop that CalRecycle's
21 going to be holding at the end of this next month, in
22 April, April 29th, on waste energy fuels and chemicals.

23 There's been, really, a barrier in developing
24 waste to fuels, as you may be aware, that certain types
25 of technologies, such as gasification and pyrolysis are

1 viewed as the same as landfills under the regulatory
2 framework for regulating solid waste.

3 We hope that will change and open the doors for
4 more development.

5 We are really looking forward at trying to meet
6 the Low Carbon Fuel Standard. We think the AB 118
7 grants and other incentive programs, like CAEATFA, sales
8 and use tax exclusions are really critical.

9 But what's really important is making sure that
10 we can depend on a revenue stream to pay back the
11 capital cost of building these \$20 million to \$30
12 million plants.

13 And we look at like a three-legged stool.
14 There's a value of the Federal RIN credits and there's a
15 value of the LCSF credits.

16 Right now, the value of the LCSF and RIN credits
17 are highly variable and they fluctuate all over the
18 place. They were at a high of \$80 for LCSF credits in
19 December, they'd down below \$40.

20 That's why we're supporting, as is BAC, a bill
21 by Assemblyman Al Muratsuchi, which is 2390, which would
22 establish a green credit reserve.

23 And we really urge the Energy Commission and
24 other parties to take a look at this measure. It's not
25 a grant program, it's not a loan program, but it would

1 establish this green credit reserve in California State
2 Government to enter into long-term contracts with
3 producers of these fuels for the value of these RIN and
4 LCSF credits for fuels that are produced in California
5 to use to serve the California fuel needs.

6 We think this would go a long way to making a
7 much more safer investment to invest in renewable fuels
8 in California.

9 So, we urge the Commission and others to take a
10 look at this bill. I'm sure the Assemblyman's Office is
11 open to suggestions and input on how to improve the
12 bill. But we think it's a good step forward in the
13 right direction and we urge you to consider it.

14 Thank you very much.

15 COMMISSIONER SCOTT: Thank you.

16 MR. WHITE: Oh, and here's two packages that
17 describe the BAC and there's a report, "Wasted: Europe's
18 Untapped Resources" and just for your further reference.

19 COMMISSIONER SCOTT: Terrific, thank you for
20 bringing t hose.

21 So, next we have Ray Pingle from Sierra Club
22 California, followed by Cathy Reheis Boyd.

23 MR. PINGLE: Good afternoon, Commissioner Scott.
24 Thanks again for your leadership this year in the IEPR
25 Update process and, particularly, the critically

1 important transportation sector.

2 The first thing I wanted to touch on, quickly,
3 is the urgency of addressing climate change. And as
4 Cliff Rechtschaffen reported, the Governor's view on the
5 existential threat that climate change poses to all of
6 us these days.

7 And we've been talking in this agency and many
8 others about Governor Schwarzenegger's Executive Order
9 of 80 percent reduction by 2050, which was
10 groundbreaking at the time he made that. But that was
11 based on information that's now, what, about six years
12 old.

13 And more recent information that we all read say
14 that climate change is happening much more quickly and
15 much more severely than had been forecast a few years
16 ago.

17 So, the main -- and, hopefully, Senator Pavley's
18 bill will pass this year and CARB will put together some
19 very aggressive greenhouse gas reduction targets for
20 2030.

21 But in the meantime, I think it's important that
22 we say this guiding star is 80 percent in 2050. That's
23 a very outside limit. We should always put "at least"
24 and we need to accelerate that process.

25 So, for example, in CARB's draft report on

1 updating the AB 32 Scoping Plan, they show a line
2 starting of greenhouse gas reductions from 2020 on a
3 straight line to 80 percent 2050.

4 They also show a little slide that gets there
5 sooner.

6 Sierra Club thinks in the electricity sector,
7 for example, we should be at 40 percent RPS by 2020, 70
8 percent by 2030.

9 So, relative to the transportation sector, until
10 definite targets are set, we just think it's important
11 that we think this in mind.

12 We're making great progress. Things are
13 happening faster than anybody imagined. Things are
14 happening more cost effectively than anyone hoped for.
15 Let's not say, well, we've got this time so let's be --
16 you know, do this and that. We need to go as fast as we
17 can to save the planet.

18 So, then the second thing was while we're
19 looking at criteria pollutants and greenhouse gases
20 together, as Nancy Skinner said, there's definitely a
21 correlation there, but not an absolute correlation.

22 You can get NOx reductions without getting
23 greenhouse gas reductions.

24 I haven't really thought it through. I think
25 the opposite may be true, though. If you're getting

1 greenhouse gas reductions, you probably are getting a
2 lot of NOx reductions and other criteria pollutants.

3 So, the point I would bring up is that we really
4 need to use greenhouse gas as probably the most
5 important metric in looking at what we're doing.

6 So, when we're looking at fuel cell vehicles,
7 for example, sure, when the hydrogen's burned it doesn't
8 make any CO2, but how is it produced?

9 And as Dr. Lloyd was just emphasizing in his
10 presentation, it's really important that it be based on
11 renewably-produced fuels. Whether that's hydrogen,
12 whether it's natural gas it's got to be renewably
13 produced or it's still contributing to the greenhouse
14 gas reduction.

15 So, those were really the two things I wanted to
16 touch on. Thank you very much.

17 COMMISSIONER SCOTT: Thank you.

18 Next is Cathy Reheis Boyd and she'll be followed
19 by Jerilyn Lopez Mendoza.

20 MS. REHEIS BOYD: Good afternoon, thank you
21 Commissioner Scott, Cathy Reheis Boyd, President of the
22 Western States Petroleum Association.

23 As I looked at your agenda last night, I saw
24 with this lineup that I had to come. You couldn't keep
25 me away. It's pretty impressive.

1 I do appreciate the discussion earlier on AB 8.
2 As you know, we were involved in that effort, and
3 pleasantly so. And we also agree with Assemblyman Perez
4 and Senator Pavley's synopsis that it is the way we
5 should try to do business always in the future on these
6 complex issues.

7 Bringing that kind of broad stakeholder group
8 together and putting our differences aside was really
9 successful and what accomplished that very difficult
10 goal. So, applaud everyone who was part of that.

11 I also appreciate the discussion today on the
12 IEPR. As you know, WSPA, I think, has commented on
13 every IEPR in the history of the Energy Commission. So,
14 I appreciate that transportation fuels are prominent
15 this year in the conversation. We've certainly
16 emphasized how important that is.

17 I'd also just like to represent that other
18 little piece of the portfolio, which is the existing
19 petroleum fuels that move 38 million people around the
20 State.

21 I do appreciate Dr. Lloyd's comments on the
22 significant contributions for cleaning up our gasoline
23 and, certainly, the dynamic with ultra-low-sulfur diesel
24 and natural gas. So, appreciate those comments as well.

25 But for any strategy to be successful, we really

1 want to emphasize how important the timing of the -- or
2 the low-carbon or low-CI fuels, the volumes of those
3 fuels, and the ability to bring them to commercial
4 scale, how important that is in this equation as we move
5 forward on a lower-carbon path.

6 And when you look at all of the transportation
7 fuel policies, whether they're the IEPR, the Low Carbon
8 Fuel Standard, fuels under the CAP, or the post-2020
9 plan, all of those become very critical as we work
10 through this together. Because I think we will be
11 working through this together to make it successful.

12 And I do want to note the recognition by
13 Commissioner Scott, in the beginning of the opening
14 comments, that there is 15 billion gallons of gasoline
15 and 3.3 billion gallons of diesel.

16 So, we make 2 million gallons of diesel and
17 gasoline every hour of every day.

18 And so, the gap between a "B" in billions
19 annually and an "M" in millions is not insignificant so,
20 I just think how we do this, when we do this, at what
21 level we do this matters.

22 And discussions to minimize any kind of market
23 volatility, and to minimize unintended consequences that
24 would force refiners to make economical decisions that
25 would not promote and would actually hinder California's

1 progress along this plan, that we take those very
2 seriously because it's a lot of fuel that we're talking
3 about that is essential to do what we do, and have the
4 consumers be able to wake up every day and drive from A
5 to B affordably.

6 So, I'm happy to be a part of that conversation.
7 I really look forward to the development of the
8 transportation fuels piece of the IEPR in 2014.

9 COMMISSIONER SCOTT: Terrific. Thank you for
10 coming and thank you so much for being part of the broad
11 coalition that helped get AB 8 done.

12 MS. REHEIS BOYD: Thank you.

13 COMMISSIONER SCOTT: Appreciate it.

14 I have Jerilyn Lopez Mendoza and she will be
15 followed by Richard Schorske. Did I say that right?

16 Anyway, hello, Jerilyn.

17 MS. LOPEZ MENDOZA: Good afternoon Commissioner
18 Scott and CEC staffers. My name is Jerilyn Lopez
19 Mendoza. I'm here on behalf of the Southern California
20 Gas Company.

21 And we appreciate the opportunity to make
22 comments as you begin your evaluation of how the
23 transportation sector needs to transform to meet
24 California's air quality and climate policy goals.

25 We agree with earlier speakers, like Dr.

1 Wallerstein, Dr. Ogden, and Dr. Lloyd, who support a
2 portfolio approach of pursuing all technologies and fuel
3 sources that can help the State meet its goals.

4 Looking forward, we see natural gas as a
5 foundation for new energy pathways that can deliver
6 energy with combustion emissions approaching emission
7 levels associated with electricity use.

8 The ongoing drive to reduce both criteria
9 pollutant and GHG emissions and to overall improve
10 vehicle efficiency will continue to reshape natural gas
11 technologies.

12 We have already witnessed a new transportation
13 pathway for natural gas, as both CNG and LNG have moved
14 into the transportation sector.

15 In Southern California we have seen large
16 transit bus fleets shift to natural gas to both reduce
17 emissions and realize significant fuel cost savings.

18 And now we're seeing a move toward natural gas
19 for heavy-duty truck use, rail, port operations and even
20 shipping to provide greater fuel diversity and capture
21 the fuel cost savings from natural gas.

22 As interest in natural gas is increasing, we
23 have an opportunity to develop cleaner technologies for
24 our engines that will make a significant different in
25 reducing criteria pollutant and GHG emissions.

1 Through partnerships with you, the California
2 Energy Commission, the South Coast Air Quality
3 Management District and engine manufacturers, SoCal Gas
4 is seeing natural gas engines being developed today that
5 will reduce NOx emissions by 90 percent, achieving power
6 plant equivalent emissions.

7 Your staffers, Randy Roesser and Laurie ten Hope
8 referenced such engines earlier today, in development at
9 Cummins Westport.

10 We expect to see these near-zero emission heavy-
11 duty trucks brought to market in the next five to seven
12 years.

13 To ensure adoption of these cleaner
14 technologies, we do need to utilize more funding for the
15 transition of fleets to these cleaner trucks.

16 Over the long term, SoCal Gas will begin to de-
17 carbonize our pipeline, just as the electricity sector
18 is de-carbonizing generation.

19 The use of renewable natural gas or biomethane
20 from existing agricultural feedstock, wastewater and
21 landfills, as well as hydrogen blends will lower the GHG
22 profile of natural gas applications.

23 Purpose-grown crops and algae will further
24 expand the potential for renewable natural gas, enabling
25 us to help meet the long-term GHG reduction goals for

1 the State.

2 Our vision is entirely consistent with the
3 State's de-carbonizing vision. We just take a different
4 approach to achieving California's criteria pollutant
5 and GHG reduction targets.

6 SoCal Gas looks forward to the opportunity to
7 share more information at upcoming workshops about long-
8 term pathways for natural gas vehicles to help the State
9 meet air quality and climate policy goals for
10 transportation sector.

11 Thank you very much.

12 COMMISSIONER SCOTT: Thank you.

13 Our next commenter is Richard Schorske, from the
14 EV Communities Alliance.

15 MR. SCHORSKE: Hello, Commissioners, thank you
16 very much. My name is Richard Schorske. I'm the
17 Executive Director of the Electric Vehicle Communities
18 Alliance.

19 We are representing EV councils in the Bay Area
20 and we're principal planning consultants to the Central
21 Coast and Monterey Bay Plug-In Coordinating Councils.

22 I just wanted to lead off with just a cautionary
23 note to ask a question for the Commission regarding the
24 recent studies related to methane leakage in natural
25 gas, and the GHG intensity of natural gas.

1 I know that this is a matter that concerns us
2 all with respect to the pipeline of both fuels of
3 vehicles, infrastructure and so forth.

4 And it strikes me that perhaps a pause in our
5 policymaking is warranted as we look to fully understand
6 what the GHG intensity of natural gas really is. And I
7 just wanted to highlight that as a point while we're
8 talking about GHG intensity of transportation fuels, in
9 general.

10 On the issue of the electric vehicle
11 infrastructure, I just wanted to focus on a couple of
12 findings that we've seen from the recent investment plan
13 and our experience on the ground.

14 One of them is that we're, unfortunately, still
15 losing the EV infrastructure battle right now. We have
16 a significantly declining ratio of EVs to plugs.

17 So, that we were about one in six, for example,
18 in the Bay Area Region, one EV per six stations, and
19 we're probably headed towards one in 12 very soon.

20 Which is a great thing because it means we're
21 selling a lot of vehicles but, actually, as a result of
22 declining federal project impacts, we have a declining
23 rate, and that's very visible on the ground,
24 particularly for BEV drivers who simply cannot rely
25 anymore on getting public plugs available in very high-

1 density locations, like San Francisco, Palo Alto, and
2 others.

3 And I've heard from multiple BEV drivers that
4 they simply won't drive into San Francisco, as an
5 example, anymore with their BEV because the over-
6 utilization of stations and such is that they don't have
7 access. It is a very critical issue.

8 And another one related to that, and I think one
9 of the issues is not only more money, which is
10 important, but it's also more flexibility to focus on
11 very high-cost installations relative to the baseline.

12 So, for example, many garages may require a
13 panel upgrade after three, four, five, six stations that
14 could cost \$50,000 or more.

15 And there's really no mechanism in the funding
16 right now to allow for the flexibility to make those
17 one-time investments in electrical capacity upgrades.
18 And yet, to break the log jam on the charger congestion
19 issue, we really, desperately need that flexibility.

20 As an example, the City of San Francisco simply
21 could not participate in the most recent solicitation
22 round because they said they were basically stuck in
23 finding more lower-cost or so-called average-cost
24 installations.

25 On the other issue, with regard to

1 infrastructure in the fast charge domain, I personally
2 was involved, as were many others, in trying to put
3 together the long-delayed I-5 or 101 electric highway,
4 in California.

5 And we really need more top-down planning and
6 help from the Commission on this because right now the
7 bottom-up approach isn't working across the State, and
8 we don't have connectivity in the fast charge domain the
9 way we've seen Tesla doing integrated planning and
10 rollout. We don't have an equivalent of that in the
11 market-based approach that we have now. So, we could
12 use help on that.

13 And lastly, with regard to rebates, I just want
14 to make the note that we desperately need a lower-end
15 PHEV, a cheaper PHEV.

16 And concentrating rebates on lower-end vehicles,
17 I'm glad to see that discussion with Senator Pavley and
18 others is underway.

19 The idea is to get, if we could, a PHEV under
20 26K net, or a BEV under, you know 18K net as a real
21 consumer option.

22 And rebating vehicles in the 40K and up category
23 is very expensive to the State and not very cost-
24 efficient in moving the market.

25 So, that's an important idea that I hope gets

1 some traction with the policymakers.

2 Finally, and this is just wrapping it up,
3 there's a lot of attention and I'm glad to hear John's
4 remarks, John Shears' remarks on renewable
5 transportation fuel standard, very important concept.

6 And we have another, additional issue of demand
7 charging mitigation for fast charging, in particular,
8 and for larger installations of charging.

9 And we need incentives to incorporate solar
10 energy and fixed energy storage with EBSE on sites where
11 there is a lot of charging going on because they cannot
12 afford to do more chargers, including level 2 and fast
13 chargers with the demand charge problem that we have,
14 now.

15 So, that's another major barrier on charge
16 infrastructure and some incentives to bring those
17 technology solutions to bear, and also increase the
18 renewable or, rather, the low-carbon value of the fuel.
19 It would be very helpful.

20 Thank you very much.

21 COMMISSIONER SCOTT: Thank you.

22 Do we have any comments on the phone?

23 MS. RAITT: Well, we have no comments from the
24 WebEx and we have one caller we could open up and see if
25 they have any comments.

1 Okay, the phone line's open. If you have any
2 comments, go ahead.

3 Hearing none --

4 COMMISSIONER SCOTT: All right. Well, let me
5 just say in closing, once again, to reiterate my thanks
6 to all of our presenters. I think they gave us lots of
7 terrific information, very thoughtful presentations.
8 And I was just thrilled to have everyone who came and
9 participated in the dialogue today.

10 I'll let you know, some of the themes that I
11 heard today were making sure that all of the -- making
12 sure the benefits of these types of programs accrue to
13 all areas of the State.

14 And, additionally, trying to target areas of the
15 State that are hardest hit, whether with air quality, or
16 with congestion, or things like that.

17 That it's going to be important for us to use
18 all of the tools in our toolkit because we'll need them
19 all to get to the challenging goals that we have, the
20 importance of keeping future goals and long-term
21 investments in mind and in the forefront as we're making
22 the investments.

23 The critical role that transportation plays in
24 meeting both the clean air, public health, energy
25 security and climate goal.

1 We talked a little bit about how important it is
2 to see if there are places where we can get more than
3 one goal for the different types of technology
4 investments that we're making.

5 We talked a little bit about all of the agencies
6 working together in partnership, and also working
7 together in partnership with the Legislature, which is
8 something that I am really excited to do. These are
9 challenging issues that we have, but if we all have our
10 sleeves rolled up and we're all rowing in the same
11 direction, I, too, feel positive that we can get there.

12 I like the ideas that we heard today about
13 California's leadership and California's commitment in
14 this area and that we need to be transformative, that we
15 need to seize the day, and that we need to dream big.

16 So, to me that was -- I was very inspired by
17 today's workshop. I'm delighted that I get to work on
18 these things.

19 And I just wanted to let you know that this
20 workshop, I think, did a great job setting the stage for
21 some of the additional transportation-focused workshops
22 that we're planning to have.

23 We're going to look at the state of the
24 technologies and the fuels kind of today and out through
25 the end of the AB 8 legislation. But we'll also look

1 beyond 2024 in thinking about that.

2 We are going to think about some of the
3 financing mechanisms and what potential options there
4 are there.

5 We want to look in-depth at the benefits of the
6 program and how to measure and capture those benefits.

7 And Dr. Lloyd talked about coupling
8 transportation with renewable energy and we're planning
9 to also have a conversation that captures some of that,
10 as well.

11 And so, I wanted to thank all of you for being
12 here for our kickoff workshop and thank you for your
13 thoughtful comments. And to encourage you, if you have
14 additional comments, please write them down and submit
15 them to our docket. We look forward to hearing more
16 from you.

17 So, thanks for joining us today.

18 (Applause)

19 (Thereupon, the Workshop was adjourned at
20 3:04 p.m.)

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