

MEETING
STATE OF CALIFORNIA
AIR RESOURCES BOARD

CAL/EPA HEADQUARTERS
BYRON SHER AUDITORIUM
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APPEARANCES

BOARD MEMBERS

Ms. Mary Nichols, Chairperson

Dr. John Balmes

Ms. Sandra Berg

Mr. Hector De La Torre

Mr. John Eisenhut

Supervisor John Gioia

Mayor Judy Mitchell

Supervisor Ron Roberts

Supervisor Phil Serna

Dr. Alex Sherriffs

Professor Dan Sperling

STAFF

Mr. Richard Corey, Executive Officer

Dr. Alberto Ayala, Deputy Executive Officer

Ms. Edie Chang, Deputy Executive Officer

Ms. Lynn Terry, Deputy Executive Officer

Ms. Ellen Peter, Chief Counsel

Ms. La Ronda Bowen, Ombudsman

Ms. Brieanne Aguila, Manager, Program Data Section,
Industrial Strategies Division

Mr. Steve Cliff, Assistant Division Chief, ISD

APPEARANCES (CONTINUED)

STAFF

Ms. Katherine Garrison, Air Resources Engineer, Carl Moyer Off-Road Section, Mobile Source Control Division

Mr. Jason Gray, Manager, Market Monitoring Section, ISD

Mr. Gregory Harris, Air Pollution Specialist, Transportation and Toxics Division

Ms. Rajinder Sahota, Chief, Climate Change Program Evaluation Branch, ISD

Ms. Danielle Robinson, Air Resources Engineer, Carl Moyer Off-Road Section, MSCD

Mr. Scott Rowland, Chief, Incentives and Technology Assessment Branch, MSCD

Mr. Abhilash Vijayan, Manager, Greenhouse Gas Technology and Field Testing Section

Mr. Erik White, Division Chief, MSCD

ALSO PRESENT

Mr. Will Barrett, American Lung Association

Mr. Rasto Brezny, MECA

Mr. Jack Broadbent, CAPCOA President, Air Pollution Control Officer, Bay Area Air Quality Management District

Ms. Karin Burns, Code REDD

Mr. Riley Duren, Chief Systems Engineer for the Earth Science Directorate, NASA Jet Propulsion Laboratory

Mr. Sean Edgar, Clean Fleets

Mr. Tony Fisher, Coalition for Clean Air

Mr. Anthony Fornier, BAAQMD

Mr. Frank Harris, Southern California Edison

APPEARANCES (CONTINUED)

ALSO PRESENT

Ms. Barbara Lee, Air Pollution Control Officer, Northern Sonoma County Air Pollution Control District

Ms. Jerilyn Lopez-Mendoza, Southern California Gas Company

Mr. Bill Magavern, Coalition for Clean Air

Ms. Melanie Marty, OEHHA

Ms. Christina McCain, Environmental Defense Fund

Ms. Michelle Passero, TNC

Mr. Matthew Plummer, PG&E

Mr. Bill Quinn, CEEB

Mr. Anthony Samson, California Chamber of Commerce

Mr. Matt Schrap, Crossroads Equipment Lease and Finance

Mr. Mik Skvarla, CCEEB

Mr. Mike Rogge, California Manufactureres and Technology Association

Mr. Tim Tutt, SMUD

Mr. Barry Wallerstein, SCAQMD

Mr. Michael Wang, WSPA

Mr. Mike Watt, San Diego Air Pollution Control District

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1 BOARD CLERK JENSEN: Dr. Balmes?

2 BOARD MEMBER BALMES: Here.

3 BOARD CLERK JENSEN: Ms. Berg?

4 BOARD MEMBER BERG: Here.

5 BOARD CLERK JENSEN: Mr. De La Torre?

6 Mr. Eisenhut?

7 BOARD MEMBER EISENHUT: Here.

8 BOARD CLERK JENSEN: Supervisor Gioia?

9 BOARD MEMBER GIOIA: Here.

10 BOARD CLERK JENSEN: Mayor Mitchell?

11 BOARD MEMBER MITCHELL: Here.

12 BOARD CLERK JENSEN: Mrs. Riordan?

13 Supervisor Roberts?

14 BOARD MEMBER ROBERTS: Here.

15 BOARD CLERK JENSEN: Supervisor Serna?

16 BOARD MEMBER SERNA: Here.

17 BOARD CLERK JENSEN: Dr. Sherriffs?

18 BOARD MEMBER SHERRIFFS: Here.

19 BOARD CLERK JENSEN: Professor Sperling?

20 BOARD MEMBER SPERLING: Here.

21 BOARD CLERK JENSEN: Chairman Nichols?

22 CHAIRPERSON NICHOLS: Here.

23 BOARD CLERK JENSEN: Madam Chairman, we have a
24 quorum.

25 CHAIRPERSON NICHOLS: Great. I will not repeat

1 what I just said. But I will pick up this prepared script
2 here, which I read every single month because it is
3 exactly the same. We are required to point out the
4 emergency exits to the rear and to my right and left up
5 here. In the event of a fire alarm, we are required to
6 evacuate the building and go down the stairs and out of
7 the building until the all-clear signal is given. And
8 then we return to the hearing room and resume where we
9 left off. All right.

10 So this morning we begin with the consent
11 calendar. We have a public meeting to consider five
12 research proposals for the Board's consideration. And
13 first, I need to ask the Clerk if any witnesses have
14 signed up to testify. They have not.

15 Are there any Board members who would like to see
16 this item removed from the consent calendar?

17 Seeing none, I will close the record on this
18 agenda item and ask if the Board members have had a chance
19 to review the Resolution. And can I have a motion and a
20 second to adopt the Resolution Number 14-19 through 14-23?

21 BOARD MEMBER SHERRIFFS: So moved.

22 BOARD MEMBER BALMES: Second.

23 CHAIRPERSON NICHOLS: Okay. We can just do this
24 by a voice vote. All in favor please say aye.

25 (Aye votes)

1 (Board Member De La Torre not present at vote.)

2 CHAIRPERSON NICHOLS: Any opposed?

3 Any abstentions?

4 BOARD MEMBER SPERLING: Recusing.

5 BOARD MEMBER SERNA: Abstain.

6 BOARD MEMBER BERG: Abstain.

7 CHAIRPERSON NICHOLS: Three abstentions, but
8 otherwise approved.

9 Clerk got that? Good. Okay.

10 The next two agenda items relate to the Carl
11 Moyer Memorial Air Quality Standards Attainment Program,
12 usually known just as the Carl Moyer Program.

13 The first item is an update on the joint Air
14 Resources Board California Air Pollution Control Officers
15 Association Program Evaluation. We did an evaluation
16 along with the air district's organization, CAPCOA. AB 8,
17 Assembly Bill 8, which reauthorized the Carl Moyer program
18 to 2023 contained a requirement for ARB in conjunction
19 with the air districts to evaluate the program's policies
20 and goals in an effort to develop any appropriate
21 recommendations for improvements.

22 Today, we're going to hear from the staff about
23 the work they've undertaken and where this effort is
24 headed.

25 At the completion of the staff presentation, I

1 would like to invite Board Member Berg to provide her
2 thoughts on this effort in particular, because she's been
3 actively involved in guiding these incentive programs over
4 the last several years.

5 But I will now turn this over to Mr. Corey to
6 introduce the item.

7 EXECUTIVE OFFICER COREY: Thank you, Chairman
8 Nichols.

9 The Carl Moyer program is an incentive program
10 that began in 1998 with the purpose of producing emission
11 reductions primarily from diesel engines. The program's
12 jointly implemented by ARB and local air districts.

13 In 2004, a suite of bills secured additional
14 annual funding for the Carl Moyer Program and created an
15 additional new source of local funding that complimented
16 the Carl Moyer program. In addition, they also authorized
17 expanding the focus of the program from solely reducing
18 oxides of nitrogen to also reducing reactive organic gases
19 and particulate matter.

20 Since its inception, the Carl Moyer Program has
21 accrued a successful record of achieving important
22 reductions in smog-forming and toxic emissions by
23 repowering, retrofitting, and accelerating turn over of
24 old highly-polluting engines. This program has been
25 instrumental in helping to clean up California's vehicles

1 and equipment and achieving emission reductions beyond
2 those required by regulation.

3 In implementing the provisions of AB 8, staff has
4 been working in close cooperation with our air district
5 partners to institute a stakeholder process on potential
6 program improvements that will help achieve both a
7 near-term and long-term emission goals -- rather, emission
8 reduction goals.

9 I'd like to also extend our appreciation to Board
10 Member Berg for her continued leadership in guiding ARB's
11 incentive program and her willingness to work to bring all
12 stakeholders together in this important effort.

13 I'd now like to ask Katherine Garrison of the
14 Mobile Source Control Division to provide the update of
15 the Carl Moyer review process in more detail and share
16 staff's progress to date.

17 Following Katherine's presentation, Jack
18 Broadbent, CAPCOA President and Air Pollution Control
19 Officer of the Bay Area Air Quality Management District
20 will provide his perspective.

21 Katherine.

22 (Thereupon an overhead presentation was
23 presented as follows.)

24 AIR RESOURCES ENGINEER GARRISON: Thank you, Mr.
25 Corey.

1 Good morning, Chairman Nichols and members of the
2 Board.

3 Assembly Bill 8 required the Air Resources Board,
4 in consultation with the local air districts, to evaluate
5 the Carl Moyer program's long-term policies and goals.

6 Today, I will present an update on the joint
7 evaluation being performed by the ARB and the California
8 Air Pollution Control Officers' Association.

9 --o0o--

10 AIR RESOURCES ENGINEER GARRISON: I'll begin by
11 providing some background on the Carl Moyer Program and
12 the related Assembly Bill 923 program, then describe the
13 AB 8 program evaluation process, and conclude with the
14 next steps.

15 --o0o--

16 AIR RESOURCES ENGINEER GARRISON: The Carl Moyer
17 memorial air quality standards attainment program and the
18 AB 923 incentive program provide funding to encourage the
19 voluntary purchase of cleaner than required engines,
20 equipment, and emission reduction technologies. Among the
21 sources that these programs funds are locomotives, trucks,
22 construction, and agricultural equipment, marine vessels,
23 and school buses.

24 --o0o--

25 AIR RESOURCES ENGINEER GARRISON: Currently in

1 its 16th year, the Carl Moyer Program began in 1998 as a
2 NOx-only emission reduction program that was expanded in
3 2004 to include hydrocarbon and particulate matter
4 reductions. The program is a partnership between ARB and
5 the local air districts. All 35 air districts located in
6 the state of California participate in the program in one
7 way or another. The program provides emission reductions
8 that are surplus. That is, early and/or beyond what is
9 required by any federal, State, or local regulation. Each
10 Moyer grant is subject to a cost effectiveness limit of
11 \$17,720 per ton of emission reductions achieved. This
12 limit is adjusted annually for inflation.

13 It is important to note that the air districts
14 have the discretion to select projects that best serve
15 their local needs and that the program guidelines are
16 frequently updated to meet air district's needs and help
17 attain statewide air quality goals.

18 As part of that ongoing process, in the next
19 agenda item, you will hear about proposed guideline
20 changes to align the program with the recent amendments to
21 the truck and bus regulation. The Carl Moyer Program
22 receives approximately \$69 million a year in funding with
23 an additional \$12 million per year provided by local air
24 districts as matching funds. These funds are generated
25 from both a portion of the smog abatement fee and from a

1 fee on each new tire sold in California.

2 To date, this has provided the Carl Moyer Program
3 more than \$900 million that has been used to replace over
4 41,000 highly polluting engines throughout the state.

5 --o0o--

6 AIR RESOURCES ENGINEER GARRISON: The success of
7 the program is due to the partnership between ARB and the
8 air districts, which have complimentary rolls. ARB is
9 responsible for the overall structure of the program,
10 which entails establishing the guidelines that ensure that
11 the reductions achieved will be surplus and SIP
12 creditable, as well as allocating and disbursing grant
13 funds to the air districts.

14 ARB also provides support for the districts
15 through program liaisons and source category experts who
16 assist in evaluation of project eligibility. That
17 includes regulatory and guideline interpretation.

18 In addition, ARB has oversight responsibility for
19 the program. ARB staff has developed the clean air
20 reporting log, or CARL, database, where districts report
21 projects and expenditures. This database tracks how and
22 where funds are expended and ensures accountability. CARL
23 is also used to support the periodic ARB reviews of each
24 district's project and fiscal activities to ensure that
25 the guidelines and statutes are being followed.

1 not be achieved.

2 --o0o--

3 AIR RESOURCES ENGINEER GARRISON: And those
4 benefits add up. Cumulatively, the Moyer Program has
5 reduced approximately 150,000 tons of ozone precursors and
6 6,300 tons of particulate matter. These surplus emissions
7 reductions help achieve SIP goals.

8 --o0o--

9 AIR RESOURCES ENGINEER GARRISON: The popularity
10 and success of the Moyer program led to its expansion in
11 2004. AB 923 expanded the Moyer program by adding funding
12 from tire purchases to the program. More significantly
13 though, it gave most local air districts the authority to
14 approve an additional two dollar motor vehicle fee for
15 reduction of air pollution from motor vehicles to be used
16 for the following project types: Carl Moyer, lower
17 emission school buses, agricultural assistance, and
18 light-duty vehicle retirement programs. All together, AB
19 923 gives local air districts approximately \$50 million a
20 year.

21 --o0o--

22 AIR RESOURCES ENGINEER GARRISON: Currently, 19
23 air districts have opted to collect AB 923 funding as
24 shown here. As in the Moyer program, the air districts
25 have the ability to select those projects that best serve

1 their local needs.

2 --o0o--

3 AIR RESOURCES ENGINEER GARRISON: Although school
4 bus funding is the single largest category, a significant
5 portion of the funding goes towards Moyer projects. Many
6 districts use their AB 923 funds to supply their Moyer
7 match requirement, and some spend beyond the required
8 match on Moyer projects. Given that, any evaluation of
9 Moyer goals and policies and potential changes must also
10 consider effects on AB 923.

11 --o0o--

12 AIR RESOURCES ENGINEER GARRISON: Although the
13 Moyer and AB 923 programs are very popular and successful,
14 the enabling legislation included a sunset date of 2015
15 that would have reduced Moyer by one-third and eliminate
16 the 923 programs all together. Fortunately, AB 8 changed
17 that.

18 --o0o--

19 AIR RESOURCES ENGINEER GARRISON: In 2013,
20 Assembly Bill 8 reauthorized key incentive program funding
21 through 2023, including the Carl Moyer and AB 923
22 programs.

23 AB 8 was supported by a broad and diverse group
24 of stakeholders, who recognized that ensuring the
25 continuation of these programs was critical. However,

1 there was also a recognition that the program should be
2 reevaluated to ensure that it was up to date with current
3 and future needs. Thus, AB 8 included a requirement for
4 ARB in consultation with the air districts, to convene
5 working groups by July 2014 to evaluate the policies and
6 goals contained in the Moyer program.

7 --o0o--

8 AIR RESOURCES ENGINEER GARRISON: To carry out
9 that requirement, ARB staff and CAPCOA joined together to
10 evaluate not only the Carl Moyer Program, but also other
11 current incentive programs, from a joint air agency
12 perspective. To accomplish this, the air agencies agreed
13 to identify the various state and locally-funded programs
14 that make up the current incentive portfolio to establish
15 common guiding principles for evaluating the incentive
16 programs, to identify areas of improvement needed in the
17 Carl Moyer and AB 923 programs, and then to work with
18 stakeholders to develop recommendations to improve the
19 programs.

20 --o0o--

21 AIR RESOURCES ENGINEER GARRISON: Here, we see a
22 representation of various air quality incentive programs
23 that are available both at the State and local levels. As
24 can be seen, the incentive portfolio is diverse. Each
25 program varies in the type of equipment that it can fund,

1 with some equipment having more funding sources than
2 others.

3 Often this is driven by the statutory goals and
4 requirements of each program. It is also important to
5 consider how potential applicants view the programs and
6 ensure that the various incentive options are easy to
7 understand. We recognize that these factors must be
8 considered when looking at how the Moyer and AB 923
9 programs should best fit within the incentive portfolio.

10 --o0o--

11 AIR RESOURCES ENGINEER GARRISON: To help
12 accomplish this evaluation, the air agencies initiated a
13 memorandum of agreement on the principles that should
14 guide potential program changes. This framework included
15 the need for each program to have a clearly defined and
16 complimentary role and provide streamlined progress
17 towards improving air quality.

18 In addition, having a diverse incentive portfolio
19 provides flexibility for agencies to evolve and add
20 programs to meet new changes quickly. There was also
21 agreement that each incentive program should have metrics
22 to gauge success, and that there should be the ability to
23 develop new incentive models in addition to the
24 predominant grant model.

25 --o0o--

1 AIR RESOURCES ENGINEER GARRISON: Using these
2 guiding principles, the air agencies jointly determined
3 the key elements that needed to be taken into account when
4 evaluating the Moyer and AB 923 programs and identifying
5 potential changes. These elements included retaining the
6 ability for air districts to set different priorities to
7 meet their specific air goals, in addition to supporting
8 statewide priorities, and improving the ability of the
9 programs to support not just near-term goals, but
10 longer-term goals as well.

11 With these elements in mind, ARB and the air
12 district staff worked together to identify improvements
13 that could be made to the programs consistent with the
14 guiding principles. A number of near-term improvements
15 that can be accomplished under current statute have
16 already been identified and are being implemented. Some
17 others related to the on-road heavy-duty trucks comprise
18 part of the proposal you will consider in the next item.

19 In general, these near-term changes reduce
20 administrative burden, streamline program implementation,
21 and expand potential project pool for many project
22 categories, while retaining checks and balances needed to
23 preserve the integrity of the program.

24 However, program improvements to enable the Moyer
25 program to better support longer-term goals to drive

1 various equipment to zero emission technologies and to
2 reduce carbon emissions will likely require legislative
3 changes.

4 --o0o--

5 AIR RESOURCES ENGINEER GARRISON: Since 2008, the
6 incentive programs advisory group led by Board Member Berg
7 has provided a forum for stakeholders from all areas to
8 provide input regarding the current suite of incentive
9 programs.

10 Last month, in close coordination with CAPCOA, we
11 convened a meeting of the advisory group that specifically
12 focused on the Carl Moyer Program and the requirements of
13 AB 8. Over 80 people attended representing environmental
14 groups, industry associations, equipment manufacturers,
15 dealers, and project grant recipients. Another 30
16 individuals followed the discussion by phone.

17 At the meeting, the air agencies shared our joint
18 perspective on the incentive portfolio and the principles
19 we would be using to guide the Moyer evaluation. And we
20 solicited discussions and input from the group on several
21 key issues. These included how the program could address
22 climate change pollutants, how the program should interact
23 with other funding programs, whether the existing
24 categories should be expanded, what factors define a
25 successful implementation program, and the consideration

1 of funding just in time projects immediately prior to a
2 compliance deadline.

3 Although the meetings with the districts and the
4 advisory group satisfies the AB 8 requirement, the level
5 of interest and amount of suggestions offered at the
6 advisory group meeting make it clear that this is the only
7 the beginning of the work ahead.

8 --o0o--

9 AIR RESOURCES ENGINEER GARRISON: The
10 participants shared a variety of perspectives and
11 generated an extensive number of suggestions. From these,
12 several key areas of broad interest were identified.

13 First, there was widespread agreement that the
14 Carl Moyer Program should be expanded to take into account
15 greenhouse gas reductions.

16 Second, there was recognition that leveraging of
17 incentive funds from several sources should be encouraged,
18 particularly for those projects that advance technology
19 and provide longer-term benefits.

20 Finally, stakeholders suggested that the addition
21 of new project categories would enhance the program's
22 ability to deliver additional surplus emission reductions.

23 --o0o--

24 AIR RESOURCES ENGINEER GARRISON: Pursuing these
25 ideas will, indeed, require legislative changes and much

1 needs to be done to prepare for that.

2 Our immediate next steps is for the air agencies
3 to review and evaluate the suggestions received at the
4 advisory group meeting. That work is underway, and we
5 will continue to engage with stakeholders as part of that
6 process. In addition, we are already planning a follow-up
7 meeting of the advisory group for this fall where we
8 intend to update all stakeholders on our progress and
9 begin to develop the recommendations that could inform
10 potential legislation.

11 In conclusion, while we have made significant
12 progress through the working group meetings required by AB
13 8, there is much work left to re-envision the Moyer
14 program and prepare it for its continued success in the
15 future.

16 That concludes my presentation. Thank you.

17 CHAIRPERSON NICHOLS: Okay. I think I'll turn it
18 over now to Sandy. I'm sorry.

19 Jack, are you next in the cue here? I apologize.

20 MR. BROADBENT: I think so.

21 CHAIRPERSON NICHOLS: That seems perfectly
22 appropriate, since you're sitting up there at the table.
23 Apologies. Go right ahead.

24 MR. BROADBENT: So good morning, Madam Chair and
25 members of the Board.

1 My name is Jack Broadbent, and I serve as the
2 Executive Officer for the Bay Area Air Quality Management
3 District. This year, I get a chance to serve as President
4 of the California Air Pollution Control Officers'
5 Association, or CAPCOA. So thank you for allowing us to
6 be a part of this presentation for you here today.

7 On behalf of CAPCOA, I'd like to thank Mr. Corey
8 and his staff for working with us on this joint evaluation
9 process. This truly has been a very positive
10 collaboration. I just want to explicitly recognize your
11 staff for that effort.

12 We believe that the passage of AB 8 last year was
13 due in part to the historical performance of these grant
14 programs. As a reminder, as Ms. Garrison indicated, in
15 2013, air districts have provided over \$900 million in
16 Carl Moyer and AB 923 funds to retrofit and replace over
17 48,000 engines, reducing more than 146 tons of ozone
18 precursors, and 6,000 tons of air toxics in California.

19 The Carl Moyer Program is not only an important
20 incentive program statewide, but the program also funds a
21 number of efforts that provide the ability for local
22 districts to focus their funds on local priorities.

23 Now, as you have heard, CAPCOA and ARB have been
24 working together to develop a number of administrative
25 changes to the Carl Moyer Program and AB 923 to improve

1 the functioning of these programs in the short term.
2 Additionally, with your staff, we have begun the process
3 of creating the vision for Carl Moyer as we move forward.
4 This process has included bringing together a wide ranging
5 diverse group of stakeholders to assist us in this
6 process. And just frankly based on the range of
7 participation and the large attendance at the meetings,
8 there remains a very strong interest and support for these
9 programs.

10 We at CAPCOA have spent a lot of time thinking
11 about how these programs can be changed to meet the
12 challenges in the future. And we believe that now we have
13 an opportunity to make some longer-term changes to these
14 programs that will help us achieve our air quality and
15 greenhouse gas reduction goals and set these programs up
16 for continued success for the next decade.

17 Just to complement Ms. Garrison's point, some
18 specific ideas that we have in mind at the districts
19 include really including greenhouse gases for the first
20 and formal time as part of Carl Moyer, the inclusion of
21 infrastructure-based projects to support cleaner mobile
22 equipment, also increasing the opportunities for
23 leveraging funds. We think there are other funds that
24 really ought to be leveraged as part of Carl Moyer as
25 well. And we think these efforts really need to be

1 explored and they would form the basis of some legislation
2 moving forward.

3 So in conclusion, Madam Chair, just we look
4 forward to the continued collaboration. And thank you for
5 this opportunity to address you.

6 CHAIRPERSON NICHOLS: Well, thank you. This is
7 definitely a program that requires a very close
8 partnership between the state and the districts, given the
9 way the moneys flow and the way the projects actually get
10 done. So I'm glad to hear that so far we seem to be on a
11 good track.

12 Now, may I turn it over to you, Ms. Berg?

13 BOARD MEMBER BERG: Thank you, Madam Chair.

14 It's hard to believe it's been six years that we
15 have had the Advisory Incentive Group running. And what
16 really strikes me is the fact that we brought that group
17 together to do an amendment for the Carl Moyer plan. And
18 because this group gelled and really was looking at bigger
19 issues than just these amendments, they wanted to stay
20 together.

21 This is an outstanding example of what true
22 teamwork can do. And by that I mean, struggling through
23 differences, coming together, seeing always what the goal
24 is in mind, and willing to stick it out so we came through
25 it stronger and really with purpose.

1 So as I listened to the staff presentation today
2 and watched on slide 16 I believe was all of the programs
3 that these -- our staff and CAPCOA are administrating,
4 plus the stakeholders, the involvement of the
5 stakeholders, it is not only remarkable, it is very
6 impressive the outcome of the emissions saved.

7 And then you follow that by what are these
8 programs going to look like in their next generation. I
9 want to thank all the stakeholders, but particularly
10 CAPCOA and ARB staff who have shown true leadership in
11 getting us to this point. And I think this group is so
12 poised to lead the challenge on identifying the key areas
13 and then guiding us to that new implementation. Not easy.
14 No silver bullet. But great job. And I really appreciate
15 each and every one of you. Thank you very much.

16 CHAIRPERSON NICHOLS: Okay. I think Board
17 members have probably questions, comments now. Do you
18 want to do this or hear from the two witnesses that have
19 signed up to speak? Either way. Why don't we hear from
20 our public.

21 We have two members of the public that signed up,
22 Mike Watt from San Diego and Jerilyn Mendoza from the
23 Southern California Gas Company.

24 This is not an action item, but I think it's a
25 good idea to have input.

1 MR. WATT: Good morning, everyone. I'm Mike
2 Watt, the Manager for Mobile Source Incentives for the San
3 Diego County Air Pollution Control District. And I've
4 also had the opportunity to serve as the Chair of the
5 CAPCOA Mobile Source Incentives Committee for this year.
6 So I've worked hand in hand with a lot of the ARB staff
7 and some of my compadres from other air districts.

8 I want to echo some of the sentiments that Mr.
9 Broadbent and Board Member Berg threw out there,
10 particularly thanks to Mr. Corey, Eric White, Scott
11 Rowland, and some of the other staff at ARB that we've
12 worked with. As you've heard, we've accomplished a lot
13 already mainly due in part to the collaborative effort
14 that we've had. And I really appreciate a lot of the hard
15 work that has been put forth by the ARB staff to not only
16 accomplish some of the short-term goals that we had to
17 help us clear some of -- I don't want to say hurdles, but
18 some of the administrative issues that have prevented us
19 from being as efficient as we can be. So we've gotten
20 some of that stuff out of the way.

21 As we heard just from Board Member Berg, there's
22 still a lot of work going forward, but I'm confident that
23 the effort that we put forward and the collaborative group
24 that we have together will be able to come out with a
25 program that is even better than what we have now and will

1 continue to serve the needs going forward for the next ten
2 years. Thank you very much for your time.

3 CHAIRPERSON NICHOLS: Thank you.

4 Ms. Mendoza.

5 MS. MENDOZA: Good morning. Jerilyn
6 Lopez-Mendoza of the Southern California Gas company.

7 I wanted to thank staff, particularly Katherine
8 Garrison, for the update on the Carl Moyer Program
9 evaluation process as it moves forward after being
10 reauthorized. We understand the current process meets the
11 statutory requirements, and we would like to ask CARB to
12 continue to have staff maintain the process so as not to
13 lose the momentum that was so encouraging to witness at
14 the Incentive Program Advisory Group meeting on June 11th.

15 I attended the meeting. This was the first time
16 I attended this group's meeting and experienced
17 collaboration and experienced discussion among a wide
18 range of stakeholders during the afternoon small group
19 discussions. In response to questions, each team reported
20 their ideas after break out sessions, and many creative
21 ideas were captured. Great minds think alike.

22 Specifically looking forward to changes in the
23 program, SoCalGas supports a focus on criteria pollutant
24 emission reductions that improve regional air quality and
25 reduce localized pollution exposure. We would like to see

1 the Board propose that the Carl Moyer program be used to
2 encourage engine manufacturers to introduce advanced
3 technologies to reduce NOx emissions below the current
4 on-road heavy-duty engine standards for model years 2010
5 and later.

6 SoCalGas supports a multi-technology approach,
7 building on available clean natural gas vehicles that make
8 sense both in terms of emission reductions and cost
9 effectiveness, natural gas engines from the starting point
10 on the pathway to near zero or power plant equivalent
11 transportation options.

12 To ensure maximum effectiveness of the state's
13 incentive funding, we support use of metrics as proposed
14 by staff and development of new incentive models that will
15 encourage voluntary transition to advanced technologies
16 and accelerate statewide deployment of near-zero
17 heavy-duty vehicles.

18 SoCalGas appreciates the support -- your support
19 of an open dialogue and stakeholder participation in
20 discussing the long-term policies and goals of the Carl
21 Moyer Program and the opportunity to provide these
22 comments today. Thank you very much.

23 CHAIRPERSON NICHOLS: Thank you. Okay. Now
24 let's bring it back to the Board.

25 I'm still not sure I understand what the time

1 line is that you're expecting to have these
2 recommendations developed by.

3 INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

4 CHIEF ROWLAND: Scott Rowland, Chief of the Incentives and
5 Technology Advancement Branch.

6 The process is ongoing. As Katherine mentioned,
7 we received many, many ideas and suggestions from
8 stakeholders at the IPAG, Incentive Program Advisory
9 Group. The time frame moving forward is the air agencies,
10 which is our collective term for us and CAPCOA, are going
11 to jointly review all those suggestions, prioritize them,
12 et cetera, and work with stakeholders who have suggested
13 them over the summer essentially.

14 In the fall, we intend to have a follow-up IPAG
15 meeting, at which we time we basically relay our
16 assessments of these ideas and solicit further input and
17 then hopefully begin work on what could be potential
18 legislative concepts that could be offered in the future
19 if legislation is to happen.

20 CHAIRPERSON NICHOLS: Is it your intent to have a
21 written report at the end of this calendar year then that
22 summarizes the work that the air agencies have been doing?

23 INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

24 CHIEF ROWLAND: That was not our intention. If that is
25 what is desired, we can certainly prepare that. I think

1 that our end goal is basically to encapsulate the concepts
2 in draft language for potential legislation as opposed to
3 an actual report.

4 CHAIRPERSON NICHOLS: I'm not trying to give you
5 direction on this. I really was just asking the question
6 because it seems to me that there could be almost infinite
7 number of good ideas, more than the number of stakeholders
8 perhaps out there. And I'm just searching for a process
9 that could help move towards greater cohesion and
10 something specific that would come out of it. I think I'm
11 going to ask for some help here.

12 BOARD MEMBER GIOIA: I think it would be a good
13 idea to present this in a formal way here so we can have
14 some discussion and possibly some input into this and
15 clearly much better if it's in a written form and not just
16 oral.

17 And just to understand how it's implemented. It
18 sounds like there may be some recommendations that would
19 lead to statutory changes. But other recommendations that
20 could get implemented by what would we change the
21 principles in the MOU with the air districts? How would
22 that work? In other words, I sort of see a set of changes
23 that may need statutory change, other changes in which we
24 don't need new legislation but could just change the
25 principles of the grant principles.

1 INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

2 CHIEF ROWLAND: Yeah. There's a couple of different
3 mechanisms we can use to modify the program. For those
4 items for which the Board has essentially already
5 established a clear policy direction, we have a relatively
6 informal process that requires a 45-day notice of the
7 changes and a public meeting. Those are not necessarily
8 brought to the Board, again because there's clearly -- we
9 believe there's clear policy direction.

10 BOARD MEMBER GIOIA: But I think it's important
11 to have the whole thing presented in the context rather
12 than bit and pieces.

13 I think getting back to Board Member Berg's very
14 good point. This is a portfolio of a lot of different
15 funding sources. And it seems that what would be useful
16 is also how we how this can help -- how do we look at
17 leveraging. How do the principles encourage the
18 leveraging among these different funding sources and help
19 those who are seeking funding for various projects to be
20 able to leverage all of these funds. Is that principle
21 sort of been talked about how we can best leverage all
22 these different funds?

23 INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

24 CHIEF ROWLAND: There have been discussions certainly. No
25 conclusions yet. I'm certainly in agreement that it is a

1 very complex question, and we would want to I think bring
2 that back to the Board to make sure that they are
3 comfortable with the recommendations that we and CAPCOA
4 would have before we pursue them.

5 BOARD MEMBER GIOIA: How are we accounting for
6 where there may be differences and regional priorities?
7 So the types of principles and projects to be funded,
8 there may be different parties in different regions and
9 within different air districts. How does that get played
10 out? Can you explain, is it one MOU or multiple MOUs with
11 different air districts? I don't understand that process.
12 Is it one MOU?

13 INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

14 CHIEF ROWLAND: The way the process works, we have one MOU
15 with CAPCOA.

16 BOARD MEMBER GIOIA: How does that reflect
17 different regional priorities?

18 INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

19 CHIEF ROWLAND: It basically acknowledges that there are
20 different regional priorities. That is a feature of the
21 current Moyer program. ARB sets the guidelines,
22 establishes the source categories. But the local
23 districts have the ability to select which of those
24 categories and which actual projects they pursue. The MOA
25 essentially establishes that we would like to retain that

1 because that flexibility I think is necessary. We don't
2 want to force marine projects on an area that has no
3 water.

4 So essentially, how that plays out is the
5 districts are granted their money based on number of
6 factors, including population, air quality needs. And
7 then essentially they determine exactly what they want to
8 fund, if they want to fund on-road trucks, if they want to
9 fund locomotives, et cetera. But it is basically their
10 call as to exactly what projects happen.

11 BOARD MEMBER GIOIA: So when do you think you
12 would come back here, just following up on the Chair's
13 question? What do you think you would come back here with
14 the presentation of the recommendations?

15 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE: It's
16 a great suggestion. And I think many of the ideas we're
17 talking about really do warrant Board's perspective on
18 especially when you talking about bringing in greenhouse
19 gases or other types of activities.

20 What I would suggest is that we'll sit back down
21 with our air district partners and lay out a time line to
22 do that.

23 I would suggest before the end of the year
24 certainly we would want to come back and share some of the
25 ideas that we've received and some of the recommendations

1 that seem to be gelling. We were all gelling around and
2 seem to have -- are taking on some of validity due to
3 that. So before the end of the year.

4 CHAIRPERSON NICHOLS: Great.

5 Yes, Judy first and then Dan.

6 BOARD MEMBER MITCHELL: First of all, I want to
7 thank Sandy for her leadership. Thank you so much for
8 taking this on and doing all the extra work that you're
9 doing with this.

10 Second, I want to comment that the reason that we
11 were doing this was because AB 8 called for an evaluation
12 of the program. And so I do agree with the comments made
13 here by Board Member Gioia and our Chair that I think it's
14 important that the end product here be a written document.
15 Then that can serve as a guideline for us as well as we
16 move into working with the Legislature on any legislative
17 changes.

18 And the other thing that I think is really
19 important is that we -- as you mentioned, Mr. Rowland,
20 that we leave flexibility in the districts because each
21 district is quite different and their needs are quite
22 different. So that is an important part of the whole
23 program.

24 So I look forward to having you come back here
25 perhaps in a few months so we can see what the end product

1 is and an evaluation and written form of how the program
2 is working and where those changes are needed. But thank
3 all of you for what you've already done a great job in
4 looking at what the program is and where it needs to be.
5 So thank you very much for your work.

6 CHAIRPERSON NICHOLS: Dr. Sperling and Dr.
7 Balmes.

8 BOARD MEMBER SPERLING: I'd like to follow up on
9 that discussion about evaluation. So I see one of the
10 principles is to create metrics and I think cost is the
11 most important metric. And we've done -- this agency has
12 done a great job in terms of traditional pollutant -- the
13 conventional pollutants, doing the economic analysis.

14 But I don't see here -- so I see that there is a
15 cost effectiveness limit written into the law. I believe
16 that comes from the AB 8, 17,700 per ton. But I didn't
17 see any follow up on that. There was a statement about
18 how many emission reductions have been accumulated over
19 time through the program, but no cost effectiveness. So I
20 think it would be useful for us to see at some level of
21 disaggregation, you know, what the cost effectiveness has
22 been for the different sectors, different programs.

23 And I note it says per ton. Is that for PM also
24 or just ozone precursors? So there's -- and then when we
25 get into greenhouse gases, it gets really complicated.

1 But I think it is important still to use that as a
2 discipline for the program.

3 So I just make a suggestion that there be more of
4 a reporting of an analyses of cost effectiveness.

5 CHAIRPERSON NICHOLS: Dr. Balmes.

6 BOARD MEMBER BALMES: Again, I'd like to
7 congratulate staff and CAPCOA for working together to try
8 to make this program more effective.

9 But I'll return to slide 15 that Ms. Berg already
10 mentioned, which is this matrix of the complexity of our
11 incentive programs. And I realize there have been
12 different sources of funding, different legislative
13 mandates. But as somebody who has been on the Board since
14 January 2008, I've struggled to remember all these
15 different incentive programs.

16 I wish there was a way that users/applicants for
17 the programs could have an easier time in terms of
18 grasping all these various programs, more one-stop
19 shopping, if you will. And what I was briefed, staff
20 indicated that they'd like to move towards something like
21 this, too. But I just want to say publicly that I think
22 we need a simpler way to get the program marketed, the
23 programs marketed.

24 CHAIRPERSON NICHOLS: Well, in terms of criteria
25 for evaluating proposals or changes, maybe transparency

1 could be one of them.

2 BOARD MEMBER BALMES: Yes.

3 CHAIRPERSON NICHOLS: Might be a useful idea.

4 BOARD MEMBER BALMES: But transparency isn't
5 enough. I think it's important. But we need to integrate
6 information in a way that as easier to digest.

7 CHAIRPERSON NICHOLS: It's a different concept.

8 Yes?

9 BOARD MEMBER SHERRIFFS: Thank you. And thanks
10 to all working on this.

11 I would just add in terms of metrics not to spend
12 too much time on it. But in fact, if there is a way to
13 translate those dollars to the health effects, to the
14 health outcomes to those impacts. Because I think it's
15 such an important measure for the public and such an
16 important measure as we think about moving forward
17 legislatively with some of this. Thank you.

18 CHAIRPERSON NICHOLS: Okay. Well, I guess the
19 message here is carry on and report back. Thank you very
20 much. This is a very helpful report. And it does segue
21 nicely into the next item on the agenda. So maybe we
22 should turn to that, which is also related to the Carl
23 Moyer Program.

24 We now get to hear some proposed amendments to
25 the guidelines that are now dealing with on-road vehicles

1 subject to the truck and bus regulation. As we heard in
2 the previous, item the Carl Moyer Program has had an
3 impressive track record in cleaning up California vehicles
4 and equipment and achieving emissions reductions above and
5 beyond what was required in the State Implementation Plan.
6 And now we need to look at the program to address some
7 concerns that have come up most recently in April
8 concerning incentive funding availability for some that
9 are subject to the truck and bus regulation.

10 One of the key drivers in approving that
11 regulation was the need to ensure that incentive funding
12 would continue to be available to smaller fleets and
13 fleets based in rural areas. And so the purpose of the
14 staff proposal today is to help achieve that goal.

15 Mr. Corey, would you introduce this item?

16 EXECUTIVE OFFICER COREY: Yes. Thank you,
17 Chairman Nichols.

18 Consistent with the recent amendments to the
19 truck and bus regulation approved by the Board on April
20 25th of 2014, staff's proposing changes to the Carl Moyer
21 Program guidelines that could complement the amendments to
22 the truck and bus regulation, particularly with regard to
23 focusing funding and expanding eligibility towards small
24 fleets.

25 Additionally, we're proposing a variety of minor

1 revisions to help our air district partners with
2 implementing the program.

3 With that, Danielle Robinson of the Mobile Source
4 Control Division will give the presentation.

5 (Thereupon an overhead presentation was
6 presented as follows.)

7 AIR RESOURCES ENGINEER ROBINSON: Thank you, Mr.
8 Corey.

9 Good morning, Chairman Nichols and members of the
10 Board.

11 You just heard an update on ARB and CAPCOA's
12 efforts to evaluate future program and policy needs in the
13 Carl Moyer Program.

14 Today, I will present proposed near-term changes
15 to the Carl Moyer Program guidelines specifically for
16 on-road heavy-duty vehicles subject to the truck and bus
17 regulation.

18 --o0o--

19 AIR RESOURCES ENGINEER ROBINSON: As discussed in
20 the previous presentation, the Carl Moyer Program has
21 provided funding to encourage the voluntary purchase of
22 cleaner than required engines, equipment, and emission
23 reduction technologies since 1998.

24 The Carl Moyer Program is implemented through a
25 partnership between ARB and local air districts. Per the

1 Health and Safety Code, ARB oversees the program by
2 managing program funds, developing and revising
3 guidelines, protocols, and criteria for covered vehicle
4 projects, and determining methodologies used for
5 evaluating project cost effectiveness.

6 The air districts are responsible for direct
7 implementation of the program. They select the actual
8 projects to be funded in their areas, as well as carry out
9 the administrative and monitoring elements for those
10 projects, including contracts, inspections, and reporting.
11 This affords air districts considerable flexibility in
12 program implementation while ensuring the proper and
13 responsible use of public funds.

14 Eligible project types reduce emissions from
15 engines and equipment in the on-road, off-road, marine,
16 locomotive, and lawn and garden categories.

17 The Health and Safety Code authorizes ARB to
18 revise the guidelines when it is necessary to improve the
19 ability of the program to achieve its goals and the
20 guidelines are continually updated to meet air district
21 needs and enhance implementation.

22 While the Board has delegated to the Executive
23 Officer the ability to update the guidelines as needed,
24 that administrative process is reserved for those changes
25 that are consistent with prior Board policy and direction.

1 Such a process was used recently to update the guidelines
2 for source categories other than on-road heavy-duty
3 trucks. However, with the recent amendments to the truck
4 and bus regulation, we have determined that it is most
5 appropriate to bring the proposed changes that would
6 affect on-road heavy-duty trucks to the Board.

7 --o0o--

8 AIR RESOURCES ENGINEER ROBINSON: The Health and
9 Safety Code exempts the Carl Moyer Program guidelines from
10 the rulemaking provisions of the Administrative Procedures
11 Act and prescribes a similar but not identical process.
12 That process requires that staff make the language
13 available for comment for at least 45 days and that we
14 hold a public meeting to consider comments.

15 In this case, staff issued a public notice
16 summarizing the proposal 45 days prior to today's Board
17 hearing. However, because the actual draft language was
18 not released until July 8th, the comment period will
19 remain open until August 22nd.

20 As mentioned, the Board has delegated to the
21 Executive Officer the ability to update the guidelines as
22 needed. And we believe that the most appropriate course
23 of action regarding comments received after this hearing
24 will be for staff to review and consider the comments and
25 modify the proposed language as needed consistent with the

1 direction the Board gives today.

2 This process actually provides a greater time
3 period for stakeholders to comment on the proposal since
4 the concepts were provided with the public notice 45 days
5 before this meeting and additional time is extended beyond
6 today's hearing for comment on the actual language.

7 --oOo--

8 AIR RESOURCES ENGINEER ROBINSON: Since 2008,
9 fleet owners subject to the truck and bus regulation have
10 been a funding priority for the Carl Moyer Program through
11 the Voucher Incentive Program and Fleet Modernization
12 Program.

13 Although the funding amounts for both are
14 governed by cost effectiveness, vehicle usage, and project
15 life, there are differences in how they function. The
16 voucher incentive program is a first come, first serve
17 program that provides vouchers for both retrofits and
18 replacement vehicles. VIP is designed to be a streamlined
19 process primarily for fleets using the most common
20 compliance options. VIP has pre-determined funding
21 amounts based on minimum surplus periods, usage, and
22 engine standards and allows applicants to receive speedy
23 approvals.

24 Fleets funded through VIP are checked for
25 compliance with the truck and bus regulation. And

1 depending on weight class, usage, and engine standards,
2 applicants can qualify for up to \$45,000 for replacements
3 and \$10,000 for retrofits. It should be noted that to
4 date very few retrofits have been funded through VIP.

5 In contrast, the fleet modernization program is a
6 replacement-only program. It provides districts the
7 flexibility to tailor contracts to the specific needs of
8 each fleet, which have unique vocations in various
9 compliance paths. In addition to the truck and bus
10 regulation compliance check, fleets also undergo an
11 in-depth check to ensure there are no outstanding
12 violations to other ARB regulations. This is generally a
13 more extensive process, but affords a higher maximum
14 funding amount of \$60,000 per vehicle.

15 The program requirements are coordinated with
16 other funding programs, such as Prop. 1B to maintain
17 alignment wherever possible. Staff recognizes that
18 consistent eligibility criteria between funding programs
19 helps districts and applicants in the application and
20 review process.

21 --o0o--

22 AIR RESOURCES ENGINEER ROBINSON: Moyer funding
23 eligibility is limited by a number of factors to ensure
24 that the funds go to worthwhile projects that achieve
25 emissions reductions that would not otherwise occur.

1 Those factors include fleet size, gross vehicle weight
2 rating, model year and usage, in addition to how many
3 years of reduced emissions a vehicle could provide prior
4 to regulatory deadlines. However, these criteria are not
5 completely consistent with Board direction in the recent
6 truck and bus amendments, which among other things were
7 intended to create new opportunities for funding.

8 --o0o--

9 AIR RESOURCES ENGINEER ROBINSON: In April when
10 the Board approved amendments to the truck and bus
11 regulation, you indicated an intent to extend funding
12 opportunities for small fleets, not only through modifying
13 the regulation, but also through refocusing incentive
14 funding programs. Staff has developed the following
15 proposed amendments to reflect the Board's direction and
16 to complement the adopted amendments by further expanding
17 funding opportunities for small fleet owners.

18 --o0o--

19 AIR RESOURCES ENGINEER ROBINSON: To prioritize
20 small fleets and to maintain a streamlined, first come,
21 first serve process, staff proposes to limit eligibility
22 to fleets of one to three, consistent with the small fleet
23 definition under the truck and bus regulation. This
24 proposal would not apply to non-VIP projects involving
25 school buses, logging trucks, and transit buses, each of

1 which has its own distinct compliance requirements under
2 the truck and bus and other fleet rules.

3 Several air districts have expressed concern that
4 not enough small fleets will seek program funding and that
5 this proposal would reduce the on-road project pool and
6 prevent them from achieving cost effective emissions
7 reductions from fleets of ten or less.

8 Staff recognizes that it is difficult to predict
9 future demand. So we are also proposing to work with the
10 districts to monitor participation rates and determine if
11 fleet size adjustments are needed.

12 Staff proposes that the Board direct the
13 Executive Officer to use the administrative process to
14 adjust the maximum fleet size to as high as ten if it is
15 determined that such a change is necessary.

16 --o0o--

17 AIR RESOURCES ENGINEER ROBINSON: Staff is also
18 proposing several other modifications that are intended to
19 increase the number of fleets eligible for funding.

20 The first is to reduce the surplus period or how
21 many years of reduced emissions a fleet must provide prior
22 to regulatory deadlines. Currently, for small fleet to be
23 eligible for a Carl Moyer grant, it must replace or
24 retrofit a truck at least two years before the deadline.
25 For small fleets, this front loads compliance costs and

1 hampers their ability to take advantage of the Moyer
2 program. Therefore, staff proposes to allow a surplus
3 period as low as one year. This will extend the
4 eligibility period in general and provide more time for
5 heavier vehicles to qualify for funding of the lower cost
6 retrofit compliance option.

7 It would also provide funding opportunities for
8 fleets that otherwise have none. For example, a heavier
9 truck with a 2017 compliance date would no longer be
10 eligible for retrofit funding starting in January 2015.
11 But with staff's proposed amendments, it would continue to
12 be eligible for funding throughout 2015 and still provide
13 emission reductions one year earlier than required. This
14 proposed change would not effect the need for all projects
15 to meet the Moyer program's cost effectiveness limit,
16 which is currently set at \$17,720 per weighted ton of
17 reduced emissions. That is reduced particulate matter,
18 oxides of nitrogen, and reactive organic gas emissions.

19 --o0o--

20 AIR RESOURCES ENGINEER ROBINSON: The second
21 modification is to allow funding of light and heavy-duty
22 trucks with gross vehicle weight ratings over 14,000
23 pounds. Currently, vehicles must be over 19,500 pounds.
24 The proposal would align eligibility for all vehicles
25 covered by the truck and bus regulation, creating new

1 opportunities for significantly more vehicles with
2 impending deadlines.

3 --o0o--

4 AIR RESOURCES ENGINEER ROBINSON: The third
5 modification would reduce the required minimum California
6 usage to 51 percent from the current 75 percent. The
7 California international registration plan data indicate
8 that 15 percent of small fleets travel 75 percent or more
9 of their miles in California.

10 If the threshold of California usage is lowered
11 to 51 percent, that rises to nearly 30 percent of the
12 small fleets. Although the fleet data does not reflect
13 the usage of each individual truck, it does point to the
14 likelihood that the reduction in a required California
15 travel would open up opportunity for additional trucks.

16 Staff proposes that this change only apply to
17 fleet modernization projects since its very nature gives
18 districts the flexibility to tailor contracts to the
19 specific usage of each fleet. However, for VIP, this
20 would increase complexity and thereby reduce its
21 effectiveness as a streamlined process.

22 It should be noted that this proposal would not
23 alter the fact that only emission reductions based on
24 operation in California would be eligible for funding.

25 --o0o--

1 AIR RESOURCES ENGINEER ROBINSON: Finally, staff
2 proposes several other modifications to clarify program
3 implementation.

4 Staff proposes to clarify that the gross vehicle
5 weight rating of a replacement vehicle must be within ten
6 percent of the engine's certified service class to ensure
7 that engines certified for certain classes continue to
8 equip appropriate vehicles.

9 Staff also proposes that replacement funding be
10 capped at no more than 80 percent of the vehicle cost for
11 all vehicle weight classes. Staff believes that this will
12 prevent funds from covering the full purchase price or
13 value of replacement vehicles, especially lighter and used
14 vehicles.

15 Staff also proposes that TRUCRS certificates
16 qualify as sufficient documentation to show compliance.
17 Staff believes that will make it easier for fleet owners
18 and air districts to determine program eligibility. Fleet
19 owners that are not required to report in TRUCRS but still
20 have to take action would still have the option to supply
21 other compliance documentation.

22 --o0o--

23 AIR RESOURCES ENGINEER ROBINSON: In conclusion,
24 staff recommends that the Board approve the proposed
25 amendments to the Carl Moyer Program guidelines. The

1 proposed amendments will help small fleets subject to the
2 truck and bus regulation get access to Moyer funding. In
3 addition, the proposal will expand funding opportunities,
4 while still providing emission reductions that are early
5 and/or in excess of the regulatory requirements.

6 That concludes my presentation.

7 CHAIRPERSON NICHOLS: Thank you. Before we turn
8 to the list of people who have signed up to testify here,
9 I just have one question really about this, and that has
10 to do with the small fleet identification and limiting it
11 to the one to three vehicle fleets and the concern about
12 difficulties in reaching those fleets.

13 It seems to me based on my personal experience
14 with this program that there has never been an ARB program
15 that is better known to the public than the truck and bus
16 regulation. I personally have gotten more mail on it than
17 any other topic combined, some of it pretty emotional. I
18 find it hard to believe that the districts can't find a
19 way to get to these small fleet owners and get them to
20 apply for the funding if it's available.

21 BOARD MEMBER BERG: They sure show up here.

22 CHAIRPERSON NICHOLS: They find their way to the
23 Board meetings as well.

24 I don't want to prematurely cut off the
25 discussion on this item. But regardless of where you come

1 out in terms of the size issue, it seems to me maybe we
2 need a better outreach program here and shouldn't make a
3 commitment as part of whatever final action we take on the
4 package to insist that both the state and the local
5 districts take on a new activity here to make sure that
6 people who are eligible know they're eligible and they
7 need to come in and apply.

8 Okay. Let's turn to first people -- the list is
9 posted on the wall there so you can see where you are. We
10 will start with Anthony Fournier. Good morning.

11 MR. FOURNIER: Good morning, Madam Chair and
12 member of the Board.

13 My name is Anthony Fournier. I'm the Director of
14 Incentives for the Bay Area Air District. I'd like to
15 start off by thanking staff for their hard work in
16 developing these recommendations and for working with the
17 local districts throughout this process.

18 We are in support of many of the changes proposed
19 today and believe they will overall help strengthen the
20 program. We appreciate the adjustments staff made to the
21 originally proposed fleet size limitations and support the
22 flexibility to give the Executive Officer the authority to
23 adjust the fleet size requirement as needed.

24 This program has been successful in helping small
25 fleets upgrade their equipment and reduce emissions. And

1 we feel this change would have unnecessarily limited
2 participation.

3 Through the Voucher Incentive Program in the Bay
4 Area, we have awarded 200 vouchers for over seven million
5 dollars over the past five years. Approximately 70
6 percent of these funds have been awarded to fleets of one
7 to three trucks. And we have allocated additional local
8 funds to ensure we do not turn away any eligible small
9 fleets from participation. We look forward to our
10 continued partnership with ARB in implementing this
11 program in the Bay Area.

12 Thank you for your time.

13 CHAIRPERSON NICHOLS: Could I just ask you a
14 question? What does it mean if there are fleets that are
15 eligible for this program and they're not applying,
16 despite all these efforts? Does this mean they're just
17 planning on not staying around and being in business long
18 enough to justify the grant? I'm seriously asking the
19 question. You seem to -- you're in touch with these
20 folks.

21 MR. FOURNIER: In some cases, sometimes the grant
22 is not enough for them to participate. They have to take
23 on a significant amount of expense to cover the balance of
24 a new truck. So that's probably the primary reason we've
25 heard from the trucking community.

1 CHAIRPERSON NICHOLS: So they wouldn't consider a
2 retrofit?

3 MR. FOURNIER: Like was mentioned in the
4 presentation, we funded very few retrofit projects through
5 the VIP program.

6 CHAIRPERSON NICHOLS: Okay. Thanks.

7 Mr. Wallerstein. Dr. Wallerstein.

8 DR. WALLERSTEIN: Good morning, Chairman Nichols,
9 members of the Board.

10 I'm Barry Wallerstein, the Executive Officer of
11 the South Coast Air Quality Management District. And as
12 we talk about ten versus three as a cutoff or another
13 issue I'm going to bring up, I just want to echo what was
14 said in the last agenda item. This is one of the very
15 most popular and successful programs that our agencies
16 jointly administer. And we do it as partners and are
17 doing it better as partners than we've ever done before.
18 So that has to be the overall context here.

19 The two issues for CAPCOA as you're hearing is
20 reducing from ten to three and there is a second issue
21 which is under the current regulation the operators of the
22 one to three vehicle fleets were supposed to retrofit
23 their first vehicle by July 1, 2014, this year. And there
24 is a concern that many of the operators, in fact, didn't
25 comply with your reg and so therefore wouldn't be eligible

1 for the funding.

2 So let me talk about that second issue first,
3 because that is the one that's most critical to us. I had
4 a conversation with Erik before the hearing today, and he
5 told me that the plan was that those operators should come
6 in and settle up with CARB. And once they settle up with
7 you and settle their violation, they would then be
8 eligible for funding. So we would ask simply ask that we
9 get something in writing both in the upcoming Prop. 1B
10 grant agreement and something from Richard that allows us
11 to know that that's the process. Otherwise, we're going
12 to have to turn these folks away because they would be
13 non-compliant.

14 CHAIRPERSON NICHOLS: But a letter would be
15 sufficient.

16 DR. WALLERSTEIN: A letter would be sufficient.

17 On the ten to three, I have the tell you my staff
18 was pushing me to say please go encourage the Board to
19 leave it at ten.

20 I understand the Board's direction previously to
21 the staff and the reasons behind it. The fact that the
22 staff presentation recommended to you that you
23 specifically as part of this item give Richard the ability
24 to adjust that as is needed, given what transpires, is
25 adequate to satisfy at least the South Coast District

1 staff.

2 I would simply also ask because this is such a
3 critical issue to the CAPCOA members that we keep in mind
4 as was mentioned earlier one size does not fit all. Some
5 of our rural members may have more difficulty coming up
6 with adequate numbers than someone like South Coast. But
7 Richard's commitment is certainly good enough for me and
8 happy to proceed on that basis. Thank you.

9 CHAIRPERSON NICHOLS: Thank you very much.
10 Really helpful.

11 Mr. Watt and then Dr. Brezny.

12 MR. WATT: Hello, again. Mike Watt, Director of
13 Incentives for the San Diego County Air Pollution Control
14 District.

15 You know, my comments will probably be similar to
16 Mr. Fornier's and Mr. Wallerstein. We certainly do
17 support the majority of the proposals particularly, the
18 reduction in the surplus life down to one year, the
19 addition of the lighter duty vehicles I think is going to
20 be a big improvement and the reduction in the California
21 operation requirement from 75 down to 51 percent I think
22 is going to help.

23 As you heard, we do have some concerns about the
24 proposal to restrict the fleet size from ten down to
25 three. But we do appreciate staff's modified proposal to

1 keep an eye on that and allow us to make adjustments going
2 forward if we see that for whatever reason there is not
3 enough participation from the fleets.

4 The last thing we want to do is have money left
5 on the table we're not able to spend because we don't have
6 enough eligible applicants. As long as we can keep an eye
7 on that.

8 And to dovetail off what Anthony said, what we do
9 hear a lot from the smaller fleets is that whether the
10 grant amount -- I think it ranges from 10,000 to \$45,000,
11 with the VIP program, I think in San Diego we've done
12 about 250 of these vouchers. I want to say the average is
13 somewhere in the \$30,000 range. While that is a lot of
14 money, it oftentimes is not enough for these folks to
15 bridge the gap between what they're getting and what they
16 need to complete the purchase of the truck. That is a
17 major reason why some of these smaller fleets aren't able
18 to take advantage of it. Certainly not because they're
19 not interested or they don't want to. It's not enough to
20 get them there in some cases.

21 CHAIRPERSON NICHOLS: I understand. Appreciate
22 that further clarification.

23 Dr. Brezny

24 DR. BREZNY: Good morning, Chairman Nichols,
25 members of the Board.

1 I'm Rasto Brezny with the Manufacturers of
2 Emissions Controls Association. Our members provides the
3 emission controls that go on OEM first fit, as well as
4 diesel retrofit applications.

5 And today, I want to thank your staff for
6 bringing forward these revised guidelines. I think the
7 message was clear at the April 24th Board hearing that
8 small fleets are struggling. And I think that some of the
9 state funded programs and requirements limited their
10 ability to qualify -- and limit their ability to qualify
11 for these loans and this incentive funding. And so I
12 think this is a really good step forward. So we
13 enthusiastically support this proposal, and I want to just
14 make a couple recommendations for your consideration.

15 One is that I guess our recommendations are aimed
16 at reducing the risk toward for both the end users as well
17 as air districts when public funds are used towards the
18 purchase of a used truck. When you buy a new truck, you
19 get -- or VDECS, for example, you get a manufacturer's
20 warrantee that ensures that the system is going to be
21 operating properly. If not, the manufacturer is on the
22 hook for making it right.

23 In the case of a used truck, you don't have that
24 assurance. And in many cases, the new owner may soon
25 realize that there may be a problem with the engines, the

1 emission controls have been tampered. So they may be
2 saddled with some maintenance costs they weren't planning
3 on. And if they don't take care of that maintenance,
4 operating a poorly maintained truck is not going to
5 deliver the emission reductions.

6 So we have a couple simple recommendations which
7 will be provide more details in our written comments. But
8 basically some simple things that could be done is a
9 minimum dealer warranty on a used truck. In the case when
10 public funds are used towards the purchase of these
11 trucks, such as Moyer or an engine out opacity to ensure
12 the engine is not burning oil, tailpipe opacity
13 measurement to make sure the emission control system has
14 not been tampered or compromised, and a simple back
15 pressure across the filter would tell you whether it's
16 been cleaned recently or it's been plugged or so forth.

17 So I'd like to thank you for your consideration
18 of our comments. And I'll be happy to answer any
19 questions you might have.

20 CHAIRPERSON NICHOLS: Thank you.

21 Mr. Barrett and then Mr. Fisher.

22 MR. BARRETT: Good morning. Will Barrett with
23 the American Lung Association California.

24 First of all, I want to say we appreciate the
25 work staff has done to develop the Moyer updates. We

1 support moving forward to continue this important work of
2 cleaning up the air to protect the public from toxic
3 diesel emissions.

4 The Lung Association has been a long and strong
5 supporter in the state's highly effective suite of
6 incentive funding programs to move us more quickly down
7 the path to clean air.

8 We support the proposal and the focus on
9 maintaining a stream lined process. We appreciate the
10 proposal to include lighter trucks in the program and
11 think this can help us speed up emission reductions across
12 the broader fleet.

13 We definitely appreciate staff's new proposal for
14 careful monitoring of small fleet participation and the
15 exploration of the need to move forward with that as we
16 get more information about the program and uptake in the
17 small fleets.

18 We want to ensure the funds remain available to
19 those in the greatest need of assistance and to ensure
20 these funds do get out the door to them quickly.

21 As you all discussed earlier, we look forward to
22 working with you on the discussion of moving forward on
23 how the incentive funds can best coordinate and be aligned
24 to make long-term impacts to protect California's health
25 and our climate. We need to ensure all incentive programs

1 are providing both local air quality benefits of in
2 pursuant of our criteria air pollution goals, but also
3 begin transforming the heavy-duty fleet to meet our 2050
4 climate goals.

5 We appreciate all the work that went into these
6 programs in updating the Moyer guidelines and look forward
7 to working with you and our partners in the air district
8 as we go forward.

9 We were co-sponsors of AB8 last year, and we are
10 really appreciative of all the work that's gone into
11 implementation of that. So thank you very much.

12 CHAIRPERSON NICHOLS: Thank you. We have two
13 speakers up here.

14 MR. MAGAVERN: With your permission, we'll switch
15 the order within our organization.

16 CHAIRPERSON NICHOLS: That's fine.

17 MR. MAGAVERN: Bill Magavern with Coalition for
18 Clean Air. And we also are long-time supporters of the
19 Carl Moyer Program. It's essential. Has done so much to
20 clean up the air in California, and we want to salute
21 the leadership of this Board, particularly Board Member
22 Berg, as well as the staff and the Air Pollution Control
23 Officers in continuing to refine the program.

24 I also participated in the June 11th meeting of
25 the Incentives Advisory Group. Thought it was a very

1 valuable discussion. And look forward to the next one.

2 And we support the proposal before you today.
3 Some of these changes I think we might have been skeptical
4 of in the past, like the reduction from two years to one
5 year. And also the reduction of the California in-use
6 requirement. But we support these today because the fact
7 it's in the context of the truck and bus rule that we know
8 is challenging for these small fleets to comply with. And
9 therefore, since it is limited to the fleets of three or
10 fewer, we support this package.

11 And having been here in April and in October when
12 we heard so much about the hardships faced by these
13 smaller fleets, we think it does make sense to make the
14 changes at this time. And we do support the staff
15 proposal to limit it to three and think that one of the
16 benefits of this program is it does help air districts
17 whether they're small or large, urban or rural. And so
18 it's great to see that this funding will be available to
19 help the smaller fleets comply.

20 And now our physicist, Tony Fisher, will
21 specifically address the weight limit issue.

22 CHAIRPERSON NICHOLS: Thank you.

23 MR. FISHER: Thank you, Bill.

24 Good morning, Madam Chair and Board members.

25 I'm Tony Fisher representing the Coalition for

1 Clean Air.

2 The Coalition for Clean Air supports staff
3 proposal to lower the gross vehicle weight ratings, or
4 GVWR, from 19,500 pounds to 14,000 pounds. However, the
5 Coalition for Clean Air recommends that the Board look
6 into the further lowering of the GVWR level down to 8500
7 pounds in order to qualify most of the diesel medium duty
8 trucks in the Moyer program.

9 This segment of the truck diesel fleet in the
10 GVWR range of 8500 pounds and 14,000 pounds represents a
11 noticeable portion of diesel trucks that adversely impact
12 passengers in following vehicles, especially since their
13 diesel emissions are mainly at ground level. In
14 comparison, larger trucks usually have higher exit points
15 due to vertical exhaust which help in disbursing harmful
16 diesel emissions before they impact passengers in
17 following vehicles.

18 I have been talking with ARB staff in El Monte to
19 determine the feasibility of cost effective technology for
20 the 8500 to 14,000 pound GVWR diesel trucks.

21 Thank you.

22 CHAIRPERSON NICHOLS: Thank you.

23 Mr. Schrap and then we've had two more people
24 sign up. Mr. Broadbent and Mr. Edgar.

25 MR. SCHRAP: Thank you, Madam Chair Board

1 members. My name is Matt Schrap. I'm Vice President of
2 Government Programs at Crossroads Equipment Lease and
3 Finance and President of California Fleet Solutions.

4 Just want to thank you for this opportunity to
5 comment on this Board Item. I, like the air districts and
6 many folks in this room, have been around these rules
7 going on for the better part of ten years now. I have to
8 say that our organization, Crossroads, we are the number
9 one largest CalCap lender in the California Capital Access
10 Program, with close to 1700 loans that have been enrolled
11 since inception. Close to 70 percent of those loans are
12 by a single truck owner-operators.

13 And I want to address specifically knowing that
14 we've already discussed the fleet size reduction and
15 appreciating the flexibility that the Executive Officer
16 has to make changes to increase the fleet size from three
17 up to ten, you made a comment earlier, Madam Chair, about
18 why folks aren't using this program. And having been
19 involved in this again since the outset and having been
20 working for the largest commercial dealership network on
21 the west coast, we see these folks come through our door
22 on a daily basis. And there's some concerns I guess, for
23 lack of a better term, about lack of acknowledgement for
24 some of those folks who have already spent a lot of money
25 to get into compliance.

1 One reason why folks aren't taking advantage of
2 the VIP program on the one hand is might be not having
3 knowledge about their eligibility. But on the other hand,
4 used truck prices have gone through the roof lately.
5 You're looking at close to \$100,000 for a used truck that
6 would meet the .2 gram criteria for 2010 engines in this
7 program.

8 Meanwhile, the rates aren't there to support some
9 of these smaller guys. We noticed a lot of folks falling
10 off. We've noticed some defaults that have started to
11 come in for this, lack of a better term, subprime
12 category. We encourage the Board to take a hard look at I
13 guess acknowledging the challenges these folks are under.

14 One thing that is of major concern to myself and
15 a lot of the end users that we deal with is this provision
16 where if you get cited, you can then come back to the
17 Board and then get a grant after the fact. That seems a
18 little, I guess, disingenuous for what we're trying to
19 accomplish here. You have folks who have spent hundreds
20 of thousands of dollars to get into compliance ahead of
21 the deadlines.

22 Now there is a message just came across, come and
23 get cited if you're a single truck operator. Come to us,
24 and we're going to give you money in order to upgrade your
25 vehicle. There is a lot of other fleets out there on the

1 four to ten category that are utilizing credits that go
2 out to 2018. There are a lot of different things here
3 that's not just let's help the small fleets out. Please
4 acknowledge some of the folks that have made investments
5 and take a hard look at increasing that fleet size when
6 the time comes around, because it is necessary.

7 And as I mentioned, we deal with these
8 owner-operators on a daily basis. We work very closely
9 with the districts. And being at the point of the sphere
10 of outreach, we would want to have the best information
11 possible for these owner-operators.

12 CHAIRPERSON NICHOLS: I just want to clarify your
13 comment about what you referred to as the mixed message,
14 if you will, of just being disingenuous about getting
15 cited. Are you referring to the people that did not
16 submit the paperwork by July 1 that they were supposed to
17 have submitted?

18 MR. SCHRAP: I was referring to the comment that
19 Dr. Wallerstein had made in regards to his conversation
20 with Mr. White in that if you get cited, if you're a
21 single truck owner-operator, you didn't reach your July 1
22 deadline or perhaps you just haven't reported at all at
23 this time in point, some serious clarification would be
24 needed. Because if I'm a single truck guy, I hear the Air
25 Board say it's okay if you haven't complied yet, if you

1 get a citation, bring it back to us. We'll allow you to
2 pursue grant programs. That in and of itself, that
3 message is disheartening, to say the least. So granted,
4 it's not an official policy at this point in time, but
5 hearing that type of stuff and knowing these
6 owner-operators.

7 One other reason is that the second truck for
8 some of these two and three truck guys isn't until 2017.
9 I know these single truck guys personally. They will wait
10 until the very last minute before they have to do
11 anything. So trying to encourage them to get in line if
12 they've already been in compliance when they're competing
13 with folks who still are not in compliance and then
14 receive a citation in order to get grant funding, it puts
15 them at a disadvantage.

16 CHAIRPERSON NICHOLS: I'd just like to clarify
17 something here, Mr. White.

18 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE: Let
19 me provide some more context in terms of how we look at
20 fleets that are not complying. This has been a
21 longstanding policy within the incentive program and the
22 Carl Moyer Program, as well as the Prop. 1B program is for
23 fleets that are compliant with the regulation, they're
24 eligible for funding. And so what often happens is fleets
25 would like to be funded, but are not in compliance. So

1 they cannot be eligible for funding until they come into
2 compliance. And typically, there is a penalty certainly
3 involved with their noncompliance they have to pay and so
4 become fully compliant with the regulation.

5 What we are proposing and suggesting in this
6 particular case is we would continue that policy moving
7 forward. So if a small fleet was noncompliant for some
8 reason, they would come in and meet with our enforcement
9 staff, settle any potential settlements and violations
10 they, which would include penalties. Once all of that was
11 cleared and they were compliant with the regulation, they
12 would be eligible for funding moving forward. We would do
13 this with small fleets and large fleets. It's not unique
14 to staff's proposal today, has been our longstanding
15 policy and our incentive programs.

16 CHAIRPERSON NICHOLS: Maybe it's the way it's
17 being communicated. But it doesn't sound like what you
18 really intend is a kind of a two-step process where, first
19 of all, you turn yourself in and pay your fine and then
20 you contemplate getting in line for a grant. It's more
21 like the way we would hear from you or the district would
22 hear from you, because you were interested in a grant, and
23 as part of getting that grant, you have to come into
24 compliance -- I'm looking at making this simpler and less
25 apparantly ping-pongish.

1 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE:

2 Well, I think we have to be careful. They're not
3 necessarily connected. You don't get an offer of a grant
4 contingent on going back and clearing your violation. If
5 you want to be eligible to apply for it -- so you go into
6 the district. "I would like to get a voucher for a
7 truck," and they run your compliance through our system
8 and say you're not compliant. Come back when you're
9 compliant. They have to go back, meet with us, become
10 whole again and become compliant with the regulation. And
11 then they can work with the district on getting the grant
12 for the remaining vehicles that have future compliance
13 dates.

14 MR. SCHRAP: I don't mean to interrupt, but it
15 seemed it was couched in the single truck owner-operator
16 perspective. If I'm noncompliant now, the only way for me
17 to get into compliance is to control the vehicle with the
18 VDECS or go purchase an '07 or newer engine.

19 CHAIRPERSON NICHOLS: It's a catch-22.

20 MR. SCHRAP: Clarification would be helpful
21 because again the lunch truck chatter out there, we've
22 witnessed it, especially with the economic hardship that's
23 happening right now. It's very difficult to convince
24 people that the ARB is serious about implementing these
25 regulations. And we're publicly webcast now. I can just

1 hear it. Oh, all you have to do is go get a citation, or
2 all you have to do is come to the district and clear it
3 and you'll get a grant.

4 The reality is -- which is with how the incentive
5 programs are. You need to be in compliance first before
6 you can access. We appreciate the shrinking of the
7 surplus, everybody who we speak to out there. But this I
8 guess misinformation, it's just rumor rears its ugly head
9 in this situation. And us being really boots on the
10 ground one step in front of the district in recruiting
11 these people and bringing them in to utilize these
12 programs, it's difficult to dispel the myths and rumors.

13 CHAIRPERSON NICHOLS: I understand. You're the
14 ones out there actually dealing with the trucks in the
15 real world. So I'm just trying to get a better sense of
16 how our program can deal with this.

17 MR. SCHRAP: I appreciate the clarification,
18 Erik. Thank you very much. It was just -- there was a
19 lot of concern. The bells started going off. My phone
20 started blowing up.

21 CHAIRPERSON NICHOLS: Thank you.

22 We will now hear from Jack Broadbent.

23 MR. BROADBENT: Yes, Madam Chair. Jack Broadbent
24 on behalf of CAPCOA.

25 A lot has already been said. But I just wanted

1 to clarify and on behalf and set the record that CAPCOA is
2 indeed in favor of this proposal that you have now today.
3 We have a letter in to you about this, about this size of
4 the fleet to be targeted. We have felt and have been
5 discussing with your staff for some time that really we
6 ought to be targeting those fleets from one to ten. But
7 we understand the desire to really focus on those one to
8 three fleets and are in support as long as we can work
9 with your staff, monitor very closely, and have your staff
10 administratively have the ability to go back out to a
11 larger set of fleets, if indeed, funding is available. I
12 would say hopefully by the end of the year.

13 So we stand ready to work very closely with your
14 staff, Madam Chair.

15 CHAIRPERSON NICHOLS: Thank you.

16 Last, Sean Edgar.

17 MR. EDGAR: Chair Nichols and Board members, Sean
18 Edgar, the Director of Cleanfleets.net.

19 I had a few targeted suggestion relative to the
20 outreach component the Chair mentioned earlier. Under
21 contract of the Board, Clean Fleets went out into multiple
22 states, probably eight or ten states around the country
23 and educated over 5,000 fleet owners now that we've made
24 significant changes to the rule.

25 I know that your staff is looking at doing some

1 additional messaging. But in light of these changes, I
2 know the call center for the truck stop when I looked on
3 it the other day, it had a great message, due to high call
4 volumes, be patient. We may get back to you. In our
5 office and I'm sure everybody else who deals in fleet
6 compliance, phones were ringing off the hook. So a
7 targeted new messaging is I think in order.

8 There are four things or tips I'll borrow from
9 our experience.

10 Number one within your purview as you can under
11 existing law, leverage your relationship with DMV, go
12 multi-media, go big when it comes to the number of
13 organizations that you deal with. And go multi-lingual.
14 So I know the Board staff is making some progress in all
15 of those areas.

16 But specific to leveraging your DMV relationship,
17 as a licensed driver here for a little bit over 30 years
18 in California, I'm used the seeing that little DUI thing
19 about how many drink on my body weight I can take. That's
20 a nice little insert for everybody who gets a driver's
21 license.

22 However, my suggestion -- this came up at a TRAC
23 meeting and may be time to reinitiate TRAC and also
24 reinitiate what we can do with an existing authority
25 working with DMV, because everybody who has a commercial

1 driver's license, everybody who registers a commercial
2 truck in California should be getting some formal
3 notification.

4 I know some of us as stakeholders will talk to
5 the Legislature next year about doing some other things
6 relative to DMV authority. However, under your existing
7 relationship with DMV, an insert for commercial drivers
8 and diesel vehicles and highlighting these changes may be
9 something very positive that you can do.

10 Going multi-media, I know you have a media
11 outreach campaign. Some of those have clips that are
12 posted on the Board's website. Beyond multi-media, I know
13 that print ads and radio and other things in multiple
14 languages, our experience, we sent out thousands of
15 postcards to DMV registered truck owners in order to
16 promote attendance at our workshops that we did both under
17 contract to the Board and we continue to do those
18 workshops, including one at 4:30 today at McClellan Air
19 Force Base. So anybody who is available, come at the end
20 of the Board meeting today. It's on the Cleanfleets
21 website if you want to come see it.

22 The last item would be integrated messaging. In
23 light of the changes, I would make an appeal to you it
24 might be time to reinvent TRAC in order for the
25 associations that do pay attention be able to carry that

1 to the their members. So reach non-members to the DMV and
2 reach members of associations by reinvigorating TRAC.
3 That would be my targeted suggestions for you.

4 Thank you.

5 CHAIRPERSON NICHOLS: Okay. Very good. Thank
6 you.

7 That concludes the list of witnesses that we have
8 on this item.

9 Supervisor Roberts.

10 I'll close the record first. It's closed.

11 BOARD MEMBER ROBERTS: It sounds like we've got
12 pretty much an agreement here. I need to have somebody
13 explain how this works because the fuzzy part of one to
14 three versus one to ten is going to be variable based on
15 some criteria or something. I'm not sure what. So I'm
16 wondering how that -- how you foresee that operating and
17 maybe I misinterpreting --

18 BOARD MEMBER SHERRIFFS: Richard Cory's middle
19 name is Solomon.

20 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE: That
21 was our answer.

22 What we will do, if the Board approves staff's
23 proposal today, is modify the guidelines that they will
24 apply to fleets of three or less. We'll work with CAPCOA
25 to identify a process in which we can establish the

1 metrics. How are we going to monitor the uptake of these
2 funds over the next several months as they make the
3 funding available. And then understand whether or not
4 fleets are taking money that's on the table or not.

5 We intend to work with the districts using the
6 information that we have, similar to what Mr. Edgar just
7 suggested, in terms of targeted outreach for individual
8 districts that have VIP or other Moyer funds for trucks on
9 the table where we can send notifications to them via the
10 mail or other means so they know that funding is available
11 within the air districts and they should look into getting
12 that. We can look at that specifically for small fleets.

13 The process we have, as Ms. Robinson laid out,
14 administratively is if we along with CAPCOA recognize that
15 small fleets for whatever reason -- we heard several
16 reasons why they may not -- but are not coming and getting
17 them funding, we can within a 45-day process very quickly
18 raise that threshold up from three to maybe five, seven,
19 as high as ten under what we proposed today, which would
20 set it backward is right now and open that funding up to
21 larger fleets.

22 For a little perspective though what we're
23 talking about, I asked staff to run some numbers for me
24 last night. How many trucks are we talking about in this
25 grouping of two to three truck size fleets. Those are the

1 ones that have some future compliance dates. There is
2 about 10,000 trucks in California that fall within that
3 two to three fleet size that still need to be upgraded.
4 So there's significant demand for trucks in that size
5 range that we think are prime targets and are really what
6 the Board was looking for us to go at.

7 If you start to go up to fleets of ten, that
8 number doubles. So you can see that the money will fly
9 very quickly the larger the fleet size that you open it up
10 to. That was why we thought it was prudent to start with
11 fleets of three, do everything we can to get them in the
12 door. If it's not working, then take the approach to open
13 it back up.

14 BOARD MEMBER ROBERTS: Based on the experience
15 the district is having, it might gradually start to
16 increase that so you reach a bigger market.

17 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE:
18 That's correct. That would be our suggestion.

19 EXECUTIVE OFFICER COREY: Supervisor Roberts, the
20 only thing I want to add to that to amplify a little bit
21 on what Erik said, Erik talked about based on the
22 insufficient demand for the fleets of three or less. So
23 there's money on the table. The point, you want to make
24 sure those dollars are used and used effectively.

25 And bottom line was that to the extent after the

1 outreach and I thought there was some excellent ideas and
2 district targeted outreach at small fleets is going to be
3 a critical aspect to this. To the extent there are
4 dollars on the table, what Erik was referring to is
5 proposed adjustments that would expand the eligibility of
6 larger fleets up to ten. We thought we would go out for
7 public comment. We would have a workshop. People would
8 have the opportunity to weigh in on it. Before it was
9 exercise, it would have full vetting.

10 BOARD MEMBER ROBERTS: Okay. Seems like what
11 you're doing is you're giving them priority at least in
12 the start. To the extent that works, we stick with it.
13 To the extent it doesn't, we'll have --

14 CHAIRPERSON NICHOLS: We'll have to bring it back
15 to the Board.

16 BOARD MEMBER ROBERTS: You can make that happen
17 hopefully in a timely way so that the funds that are
18 available and put into use.

19 I'd move approval of the Resolution 14-27.

20 BOARD MEMBER BALMES: Second.

21 BOARD MEMBER BERG: Second.

22 CHAIRPERSON NICHOLS: Any further discussion?

23 BOARD MEMBER MITCHELL: I'd like to have a couple
24 of comments here.

25 As we mentioned, I think it's really important

1 that with the initial roll-out of the program that there
2 is extensive public outreach to the small fleets. And
3 that I do think it should come back here to the Board
4 after that to see how successful that has been. There's
5 some question whether there will be money left on the
6 table. And I know we don't want to be in that position.

7 The other thing that should be included here in
8 our approval of the resolution is the suggestion that the
9 Prop. 1B grant program include this provision that we
10 discussed with Mr. White that if an owner of a small fleet
11 is not compliant, that he has to come into compliance and
12 pay the penalty and whatever ARB has worked out with that
13 owner before he becomes eligible for the funding, for the
14 incentive funding, and that the forum that ARB puts out
15 for the Grant 1B application should include that proviso.

16 Secondly, that the ARB should send a letter to
17 the districts which lays out that distinction. The
18 districts are concerned, of course, that they want to be
19 compliant with the ARB program. So they don't want to run
20 into a situation later where they've granted incentive
21 funding and we find out that we couldn't do it. I think
22 that kind of a letter is important as well.

23 So I also wanted to highlight how important this
24 program is. And I'll say in southern California and South
25 Coast Air District, it has just been an incredibly

1 important part of our program to clean up the air. So we
2 want to see it be successful. And we think that targeting
3 the small fleets first is a good way to try to bring in
4 those people. We know that is the category that has the
5 most trouble being compliant. But that expanding that up
6 to the ten fleets, if there is money on the table, is also
7 essential. So I would ask that those comments be noted in
8 our approval of the Board Resolution.

9 CHAIRPERSON NICHOLS: I don't think we need to
10 amend the Resolution. But I think they will be in the
11 record. I hear the -- I see the staff nodding. And I
12 believe they heard you.

13 Without further ado, yes, Mr. Serna and then Mr.
14 Eisenhut.

15 BOARD MEMBER SERNA: Thank you, Chairman Nichols.

16 I wanted to respond and certainly underscore what
17 Chairman Nichols said at the outset before we took public
18 testimony about how best to reach the small fleets. I
19 wanted to offer a suggestion if we are not already doing
20 it. And I'm in particularly looking at La Ronda.

21 One of things we might think about is working not
22 only with local air districts to promote and provide the
23 information about the incentives and the grants, but also
24 individual counties, economic development departments.
25 And in our case here in Sacramento County, we actually

1 have an organization, separate agency called the Business
2 Environmental Resource Center. And I believe LaRonda is
3 familiar with that agency. And the mission of that agency
4 is really to help small business and growing business
5 navigate through various regulatory processes and
6 permitting and all that comes with that.

7 And I think this is -- that's a great example of
8 a platform that we might want to take advantage of in
9 addition to like I mentioned earlier the economic
10 development department of various counties, assuming they
11 have them. Just to kind of cast a wider net instead of
12 just working with local air districts.

13 CHAIRPERSON NICHOLS: Thank you. It looks like a
14 good suggestion. I'm sure that the Ombudsman is prepared
15 to act on it.

16 OMBUDSMAN BOWEN: That's my suggestion. We will
17 work with Erik's staff and make sure we cover -- there is
18 quite a bit of growth in the economic arena throughout the
19 state. I'll make sure we touch base with them.

20 CHAIRPERSON NICHOLS: Thank you.

21 Mr. Eisenhut.

22 BOARD MEMBER EISENHUT: Thank you, Chairman
23 Nichols.

24 I appreciated the conversation clarifying the
25 compliance prior to application. I think that was a good

1 conversation.

2 The question I have with regard to the three and
3 ten, as I understand it, will for some period of time
4 essentially the districts would have two lines and
5 rather -- which leads to a certain amount of uncertainty
6 prior to that point. If there were a single line with,
7 for want of a better word, priority rights for smaller
8 fleets up to a limited -- up to a fixed date, is it your
9 opinion that would help clarify the situation or add
10 unnecessary complexity to it?

11 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE: I
12 think that might add some complexity to it. I think there
13 is a lot of things we can look at to gauge how small
14 fleets are utilizing available funds, looking at
15 historical rates of how money goes out the door and
16 compare that with the rate at which money under these new
17 restrictions would go out the door and such like that.

18 I don't think it will take us too very long once
19 these moneys are available and local air districts to
20 understand whether or not the demand that I think we all
21 collectively hope shows up, that small fleets taking
22 advantage of the public incentive dollars that are
23 available to help them get cleaner trucks.

24 If that doesn't happen, our plan would be to move
25 fairly quickly. I don't think we want to have different

1 sets of criteria out there. And we're going to put you in
2 this one or put you in that one up to a limit. Because I
3 think that gets confusing for those who want to
4 participate. And it becomes a lot more difficult to
5 administer for the local air districts. So one of the
6 beautiful things about the VIP program is its simplicity.
7 You apply. You get your voucher. You can go to the
8 dealer. You can get your vehicle. We want to preserve
9 that as best we can.

10 BOARD MEMBER EISENHUT: Thank you.

11 CHAIRPERSON NICHOLS: Yes, Dr. Sherriffs.

12 BOARD MEMBER SHERRIFFS: Thank you. Just wanted
13 to clarify -- well, I would agree our ability to refine
14 the program -- I would agree our ability to refine the
15 program is indeed one of its strengths and one of the
16 strengths of the organization in relationship with the
17 stakeholders and is very important. We learn from what we
18 do.

19 The minimum surplus reductions in the past we're
20 looking at two years for one to three fleets and three
21 years for four to ten. And we're now talking about one
22 year. Is that only for the one to three or would it also
23 cover the fleets up to ten?

24 INCENTIVES AND TECHNOLOGY ASSESSMENT BRANCH CHIEF
25 ROWLAND: In the immediate future, it would only to apply

1 to fleets of one to three. If there is the decision to
2 open up eligibility to these larger fleets based on our
3 assessment of the performance, I think that is a question
4 we would need to examine to determine if it was
5 appropriate.

6 The proposal essentially provides, you know, one
7 last chance of funding for folks at that final year of
8 surplus. And we have heard some concerns that the larger
9 fleets -- that allowing that single year would be
10 providing more benefit -- not more benefit than they need.
11 Access that is perhaps more warranted for the smaller
12 fleets than the larger fleets. So if we extend the fleet
13 size, I think what we would probably do is go to the
14 status quo for the fleets of four to ten and retain the
15 three year surplus period.

16 BOARD MEMBER SHERRIFFS: Good. I appreciate your
17 caution, because thinking back to the graph that we saw
18 when we revisited this a couple months ago, we shifted the
19 curve in terms of the number of lives, the health effects.

20 Now our sense was we hadn't shifted the curve so
21 far that it was really beyond what our best calculations
22 were. But our action today, indeed, shifts that a little
23 bit more. And if we extend that to fleets of four to ten,
24 that becomes a significant multiplier in terms of the loss
25 of the surplus. So we do need to be very cautious. Good

1 luck.

2 One other thing I wanted to ask about. It was
3 brought up by the last speaker that really addressed the
4 equity issue and compliance. What progress or where are
5 we making progress in terms of tying in to DMV? That
6 seemed like a very important area to assure people who had
7 complied in the past that as we move forward we really do
8 have a handle on this.

9 MOBILE SOURCE CONTROL DIVISION CHIEF WHITE: As
10 you may recall from the April hearing, we were seeing
11 currently very high levels of compliance, which was
12 certainly very encouraging to us that fleets are aware of
13 the regulation and they've taken the actions they need to
14 through some of many ways -- in the flexibilities that we
15 offered in the program. So today's action will allow
16 those that have utilized that flexibility and extended
17 their compliance dates a mechanism to get some funding.

18 I do not expect that the compliance rates we saw
19 in April have changed much since then. Staff had been
20 very busy over the last several months finalizing the
21 amendments that the Board approved in April, moving fleets
22 into those newly created compliance flexibility options
23 that they had so that we could move them from if you
24 recall the good faith advisory program that many fleets
25 had participated in into the actual regulatory amendments

1 that the Board had approved. So some of the work that you
2 suggest, Dr. Sherriffs, in terms of looking at what we
3 have and comparing that with the DMV is work we will be
4 doing in the near future to certainly continue to check on
5 what the compliance rate is within the program in
6 conjunction with their field activities. So that work
7 will continue.

8 CHAIRPERSON NICHOLS: Are we ready to vote? We
9 have a motion and a second on the table. All right.

10 All in favor, please say aye.

11 (Unanimous aye votes)

12 CHAIRPERSON NICHOLS: Any opposed?

13 Any abstentions? All right.

14 Thank you, staff. Good work. Good discussion.

15 Our next item is the information update on air
16 toxics prompted by a proposed update to the science
17 California uses to assess the risk of airborne toxic
18 contaminants.

19 Over the past ten years, advances in science have
20 shown that early life exposures to air toxics contribute
21 to increased lifetime risk of developing cancer or other
22 adverse health effects compared to exposures that occur in
23 adulthood. This focus on children actually has been going
24 on for quite some time. But this is the first time we've
25 seen it reflected in the regulatory arena.

1 The Office of Environmental Health Hazard
2 Assessment, OEHHA, is nearing completion of an extensive
3 public process to revise its guidance on evaluating the
4 health risk from toxics to incorporate the new science.
5 ARB, the air districts, our consultants, and sources of
6 air toxics all rely on this guidance to implement risk
7 reduction programs established by state law.

8 The net effect of the proposed changes would be
9 to increase the estimated health risk associated with a
10 fixed level of emissions from a given source or sector.
11 In some cases, the new estimated risk would be only
12 slightly higher than the estimate using the existing
13 methodology.

14 But in other cases, the new estimated risk could
15 be up to three times higher. As policy makers, it's
16 essential that we understand the context for these changes
17 and what they mean. We have successfully reduced the
18 inhalation cancer risk from air toxics by 80 percent in
19 California since 1990. But now we have developed a better
20 way to assess how the remaining toxics in the air effect
21 us all. And we need to evaluate how we're going to
22 continue the progress that we've made.

23 Today, ARB staff and OEHHA staff together with a
24 representative of the California Air Pollution Control
25 Officers Association are going to highlight the scientific

1 advances and discuss the work plan for incorporating the
2 proposed new guidance in state and local risk reduction
3 programs.

4 Mr. Corey, would you please introduce this item?

5 EXECUTIVE OFFICER COREY: Yes. Thank you,
6 Chairman Nichols.

7 In June, OEHHA released for public comment an
8 updated version of its draft guidance manual for
9 performing health risk assessments. It will go to the
10 scientific review panel late this year, then be finalized
11 for use across California thereafter.

12 In anticipation, ARB and the air districts are
13 working together to develop a comprehensive multi-year
14 plan for incorporating the new guidance into the numerous
15 state and local air toxic programs. The higher estimates
16 of health risk with proposed new guidance will heighten
17 the need for the ARB and our district partners to evaluate
18 the existing permitting and control requirements as well
19 as develop additional protections for impacted
20 communities.

21 The new methodology does not change the fact that
22 diesel particulate matter remains the primary driver for
23 health risk from air toxic in California, underscoring the
24 need to continue to push for zero and near-zero emission
25 technologies.

1 The Board's actions last month to approve \$80
2 million in incentive funding to catalyze this technology
3 in the freight sector was an important milestone. The
4 presentation today will describe our current air toxic
5 program, the progress we've made, the policy questions
6 that we'll face, and the schedule for addressing them.

7 I'll now ask Greg Harris of the Transportation
8 and Toxics Division to begin the staff presentation.

9 Greg.

10 (Thereupon an overhead presentation was
11 presented as follows.)

12 AIR POLLUTION SPECIALIST HARRIS: Thank you, Mr.
13 Corey.

14 Good morning, Chairman Nichols, and members of
15 the Board.

16 Today, you will be receiving a joint presentation
17 from Air Resources Board, Office of Environmental Health
18 Hazard Assessment, and the California Air Pollution
19 Control Officers Association, CAPCOA, which is the
20 association of local air districts.

21 The purpose for this presentation is three-fold.
22 First, to inform Board members about the OEHHA risk
23 assessment guidelines which provides the risk assessment,
24 science, and direction for preparing risk assessments for
25 air toxics in California, the changes to these guidelines

1 since they were last updated in 2003, and the implications
2 of those changes to our air toxic programs.

3 Second, to discuss the air district and ARB
4 actions to address the changes.

5 And third, to let the interested public and
6 stakeholders know that we recognize the issues before us
7 and allow the Board meeting to serve as a kickoff for
8 some, or a continuation for others in regard to outreach
9 and communications on this topic.

10 --o0o--

11 AIR POLLUTION SPECIALIST HARRIS: The OEHHA
12 guidelines have been updated to reflect new science on
13 childhood exposure to air toxic and new data on exposures
14 for people of all ages. Reasonable refinements to
15 critical exposure factors have improved the methodology
16 for estimating potential health impacts. The impacts of
17 these changes mean that cancer risk estimates will be
18 increasing. In some cases, inhalation risk estimates may
19 not change much. However, in many cases, the inhalation
20 cancer risk estimates using new guidelines will increase
21 by a factor of approximately 1.5 to three. These changes
22 will result in more facilities being subject to public
23 notification and risk reduction requirements. As a result
24 of the new science, the air districts and ARB need to
25 reevaluate their air toxic programs and policies to

1 address these changes.

2 --o0o--

3 AIR POLLUTION SPECIALIST HARRIS: This
4 presentation will cover the background of the air toxics
5 program, the challenges that we face, and the actions ARB
6 staff and districts plan to take in response.

7 --o0o--

8 AIR POLLUTION SPECIALIST HARRIS: California's
9 air toxics program has two major elements that cover many
10 activities and tasks within the program. The first
11 element is risk characterization and communication, which
12 covers the evaluation and assessment of potential health
13 impacts and the communication of that information. This
14 slide outlines the risk characterization and communication
15 activities within the program.

16 In parentheses, we identify who is involved or
17 performs those activities. Examples of risk
18 characterization activities include the identification of
19 toxic air contaminants and the conduction of risk
20 assessments under the AB 2588 Air Toxics Hot Spots Program
21 and district permit programs for CEQA analysis and for use
22 in special studies, such as environmental justice or goods
23 movement evaluations.

24 Examples of communication activities include the
25 public notification or the right to know requirements of

1 the Hot Spots Program and the presentation of air toxics
2 monitoring trends.

3 --o0o--

4 AIR POLLUTION SPECIALIST HARRIS: The second
5 major element of California's air toxics program falls
6 under risk reduction. We address risk reduction through
7 risk management activities.

8 This slide shows examples of the risk management
9 activities, and again in parentheses identifies who is
10 involved. Examples of risk management activities include
11 district permitting programs, the implementation of risk
12 reduction requirements under the Hot Spots Program, the
13 development of airborne toxic control measures, which use
14 the best technology in consideration of costs and
15 potential health risk, and the effective enforcement of
16 existing regulations while using incentives to accelerate
17 emissions reductions.

18 In both major elements of the air toxics program,
19 the ARB and air districts work together to evaluate
20 emissions and health impacts while implementing programs
21 that cut emissions of air toxics and associated health
22 risk.

23 --o0o--

24 AIR POLLUTION SPECIALIST HARRIS: The
25 California's air toxic program has been very successful in

1 reducing public exposures to air toxics. Since 1990, we
2 have achieved an 80 percent reduction in risk from air
3 toxic despite eight million more residents and eight
4 million more vehicles. While these are statewide average
5 statistics for health, the health effects are also reduced
6 and in some cases eliminated near facilities due to
7 changes in equipment and processes in response to ARB and
8 district control measures since many California sources
9 have invested in the highest levels of controls to reduce
10 emissions.

11 --o0o--

12 AIR POLLUTION SPECIALIST HARRIS: The OEHHA
13 guidance manual supports numerous risk characterization
14 and risk reduction aspects of California's air toxics
15 program, including hot spots and port or rail yard risk
16 assessments, district permit actions, and regulation
17 development at both the State and local levels.

18 --o0o--

19 AIR POLLUTION SPECIALIST HARRIS: While the
20 changes in the science are necessary and appropriate, they
21 create considerable challenges that must be addressed.
22 This slide illustrates some of the issues risk managers
23 will face.

24 In this example, we use a typical gasoline
25 service station, but the same situation will apply to

1 other types of facilities.

2 First, some background. Under the Hot Spots
3 Program, individual districts set the risk levels for
4 facilities that trigger the requirements for public
5 notification and risk reduction. The two columns on the
6 left show the typical levels that districts use. For
7 notification, most districts use the ten chances per
8 million. This means if the results of the risk assessment
9 for a facility are above the notification level, then the
10 facility must notify its neighbors of the results of the
11 risk assessment.

12 If the risk assessment results are above the
13 level for risk reduction, typically between ten and 100
14 chance per million, then the facility must prepare a plan
15 for the district on how it will get below the risk
16 reduction level, then implement the risk reduction plan
17 within a specified time frame up to ten years.

18 Here's the programmatic challenge. Any source,
19 but in this example a typical gas station, could be below
20 the level of notification of the OEHHA risk reduction
21 guidance at, for example, eight chances per million.
22 However, the new guidance, they are above the notification
23 level for most districts and may be above the risk
24 reduction level with the risk of approximately 22 chances
25 per million. Some source categories like stations,

1 already have state-of-the-art controls technology. In the
2 case of gas stations, the fuels have been reformulated.
3 There are vapor controls on the station and in this most
4 of the vehicles.

5 This raises an important policy issue: How do we
6 address a category of sources providing an essential
7 public service that do not currently have additional
8 technology options? The air districts and ARB staff are
9 discussing the possible responses to this difficult issue.

10 Next, Dr. Melanie Marty of OEHHA will discuss the
11 science and changes to the OEHHA guidelines. Dr. Marty.

12 DR. MARTY: Thanks, Greg.

13 Good morning, Chair and members of the Board.

14 I'm Melanie Marty, Assistant Deputy Director of
15 the Science Division at OEHHA.

16 Before I discuss the next few slides, I just want
17 to remind people of the origins of the risk assessment
18 guidance manual, which is now out for public review.

19 OEHHA is required by law to develop and to update
20 risk assessment guidelines for the Air Toxics Hot Spots
21 Program. Some of you who have been around awhile know
22 that as the AB 2588 program. These guidelines are used to
23 estimate both cancer risk and non-cancer hazard to the
24 public from chemicals emitted by stationary sources
25 subject to the program.

1 State law also requires that OEHHA consider the
2 specific susceptibility of infants and children as well as
3 other sensitive, such as the elderly, when assessing risk
4 from air pollutants, including the air toxics.

5 Over the last decade or so, OEHHA has revised our
6 previous risk assessment guidelines using new data and new
7 analyses about both exposure and sensitivity of infants
8 and children. We produced three technical documents, all
9 of which have undergone mandated public review, peer
10 review by the State Scientific Review Panel, and adoption
11 by the OEHHA director for use under the Air Toxics Hot
12 Spots Program.

13 The risk assessment guidance manual, which is a
14 user manual for conducting risk assessment, essentially
15 integrates information from the three technical documents.
16 We've pulled the key information to implement the changes
17 to the risk assessment methods.

18 The changes that the Board is being briefed about
19 today relate primarily to estimating cancer risks from
20 facility emissions. The slide presents a schematic
21 overview of the factors that go into estimating cancer
22 risk.

23 On the left, we have cancer potency factor.
24 Cancer risk is proportional of the potency of the chemical
25 as a carcinogen. That's one of the factor that goes into

1 estimating cancer risk. The individual chemical cancer
2 potency factors are based primarily on studies in adult
3 animals or sometimes adult humans. And these we're not
4 changing for this guideline.

5 However, the cancer risk also has to consider
6 other factors, including the age at which you are exposed
7 and the dose of the carcinogen, factors related to the
8 extent of exposure, including the amount of time in a day
9 that a person is being exposed, in this case, time at home
10 because the cancer risks are estimated for nearby
11 residences. And also the length of time that you're
12 actually living at a specific address or the exposure
13 duration.

14 The components in the red in this slide are
15 either newly incorporated or revised in the new risk
16 assessment methods.

17 Next slide, please.

18 --o0o--

19 DR. MARTY: In evaluating newer data, it becomes
20 pretty clear that exposure per pound of body weight from
21 inhalation or from eating or drinking contaminated food or
22 water are higher the younger you are. So infants have the
23 highest exposure per pound of body weight in the same
24 setting as an adult.

25 Thus, the guidelines include revised age-specific

1 breathing rates, as well as other intake rates such as
2 exposure from food or drinking water. These revised
3 intake rates result in more accurate estimates of dose to
4 infants and children and to adults.

5 OEHHA also evaluated data relating the age at
6 which one is exposed to the cancer risk. Our analyses
7 indicate that in general the cancer risk is higher the
8 younger a person is when exposed to the carcinogen. That
9 is on a dose basis. That's on the amount of carcinogen
10 exposure per body weight.

11 We have, therefore, incorporated age sensitivity
12 factors to weight risk from exposures that occur early in
13 life, infancy and childhood.

14 We also evaluated data relating to the amount of
15 time one spends at home by age. This was actually done by
16 ARB staff. We are able to account for reduced exposure
17 when you're away from the location, at which the cancer
18 risk is estimated.

19 Previously, we recommended estimating cancer
20 risks from a specific facility's emission for a 70-year
21 lifetime at a given residence. We have changed this
22 recommendation to 30 years based on using Census data that
23 indicate most people live 30 years or less at a specific
24 address. In the new guidelines, cancer risk at a specific
25 location from a facility's emission is estimated based on

1 30 years exposure.

2 As I noted earlier, these changes have undergone
3 public review and peer review by the Scientific Review
4 Panel, including review of our responses to public
5 comment. The guidance manual integrates this information
6 to allow implementation of the risk assessment method
7 changes.

8 I'd like to note also that U.S. EPA uses similar
9 information in its risk assessments, including
10 age-specific intake rates and weighting factors for early
11 life exposure.

12 Next slide, please.

13 --o0o--

14 DR. MARTY: The bar graph you're looking at
15 provides an indication of both the direction and magnitude
16 of the change in cancer risk estimate presented by the
17 factors I just discussed.

18 One can see that weighting risk from early in
19 life exposure drives the cancer risk estimates upwards.
20 So that's the age sensitivity factor bar. Likewise,
21 accounting for higher exposures per pound in younger
22 people also increases the cancer risk estimate because it
23 increases the dose estimate. So that's the daily
24 breathing rate in this particular figure.

25 Accounting for less than 24 hours per day at home

1 address exposure to toxic air emissions in a number of
2 ways. Some of these rely on assessments of health risk
3 due to exposure to toxic pollutants, while others are
4 technology-based or consider other feasible mitigation
5 strategies.

6 Broadly, local air districts are charged with
7 addressing toxic emissions as part of the permitting
8 actions for stationary sources. Districts implement and
9 enforce an array of federal and State air toxic control
10 measures and also have authority to develop and implement
11 their own measures to reduce emissions or associated risks
12 from new, modified, and existing sources.

13 Air district governing boards have discretion to
14 establish risk-based thresholds under key programs,
15 including thresholds used in permit review and to
16 implement the notification and risk reduction requirements
17 of the Air Toxics Hot Spots Program. Many districts also
18 advise local land use agencies on risk assessment and
19 mitigation under the California Environmental Quality Act.

20 The air districts are preparing for the update to
21 OEHHA's risk assessment guidelines in a number of ways.
22 Districts are individually reviewing their rules,
23 programs, and policies that evaluate or address health
24 risks from air toxics in order to identify changes that
25 may be needed and to understand the potential effects of

1 revisions to current risk assessments that have already
2 been done. This includes notification and reduction of
3 risks under the Hot Spots Program, the permitting
4 thresholds I mentioned, and other rules or programs that
5 address health risks from air toxics.

6 In addition, collectively through CAPCOA, the
7 district have gathered information about anticipated
8 program and workload implications. CAPCOA is also
9 reviewing its Hot Spots prioritization guidelines, which
10 are referenced in statute, to identify any changes that
11 may be needed to ensure those guidelines remain consistent
12 with OEHHA's revisions to the risk assessment guidelines.

13 CAPCOA's preliminary survey of its members
14 indicates that potentially tens of thousands of facilities
15 will need to be evaluated and prioritized for further
16 review following these changes, and several thousand will
17 likely need revised risk assessments. The majority of the
18 facilities effected will be smaller operations, such as
19 gas stations, metal refinishing, and stationary diesel
20 engines. These may be addressed on a category basis
21 through the industry-wide provisions of the Hot Spots
22 Program by the air districts working with ARB staff.
23 Among the facilities that will be evaluated individually,
24 our survey suggests that as many as 1200 facilities could
25 be required to provide public notification of associated

1 health risks as a result of the change, and about 350 or
2 so facilities may be required now to reduce their risks.

3 These are rough numbers, and they will likely be
4 revised as more in depth reviews are completed by the air
5 districts and by ARB. CAPCOA will also be working with
6 ARB staff to develop tools to expedite the reviews. We
7 anticipate completing our revisions to the prioritization
8 guidelines by the end of the year. And districts expect
9 to have a more comprehensive assessment of what changes
10 may be needed in their individual programs within a few
11 months after OEHHA finalizes their risk assessment
12 guidelines.

13 For the individual facility reviews, districts
14 plan to begin with the highest risk facilities that are
15 most likely to have to reduce their risks, followed by
16 those that are more likely to trigger public notification.
17 And then after the highest risk facilities are completed,
18 the districts will rely on the existing quadrennial update
19 process to review the remaining facilities.

20 --oOo--

21 MS. LEE: The districts and ARB have been
22 collaborating closely and productively over the last
23 several months as we have evaluated the potential effects
24 of OEHHA's proposed changes. And your Board can feel
25 confident we have a solid work plan going forward. We

1 expect to continue our collaboration as we identify source
2 categories for possible industry wide assessments, develop
3 the assessment tools, conduct the assessments, and address
4 the results. We will also be coordinating on the
5 reevaluation of toxic control measures.

6 This is a substantial undertaking on par with
7 initial reviews that were done when the Hot Spots Program
8 began. It will likely take several years to complete.
9 Throughout this process, we expect to interact with
10 businesses, environmental, and community groups, and
11 others who are interested in the effort to provide ample
12 opportunity for everyone to understand and have input into
13 the process.

14 CAPCOA prepared a brief overview of the effect of
15 the proposed changes and anticipated next steps to provide
16 to our members for their use as they brief their boards
17 and local stakeholders. We plan to develop additional
18 outreach materials to support the process going forward,
19 and we look forward to working with ARB staff in the days
20 and months ahead.

21 We understand that the revisions to OEHHA's risk
22 assessment guidelines have not been approved by their
23 Scientific Review Panel, but the districts feel strongly
24 that early and active engagement with our stakeholders is
25 very important.

1 working to update its guidance, the ARB and the district
2 recognize the implications of the on-risk management.
3 Throughout 2014, the Secretary of Environmental
4 Protection, Matt Rodriguez, led discussions with air
5 districts, CAPCOA, OEHHA, and ARB to develop a coordinated
6 effort for implementing the new science. We developed a
7 common message to accommodate release of the draft
8 guidance manual and reached out to industry and
9 environmental representatives with advanced briefings.

10 --o0o--

11 AIR POLLUTION SPECIALIST HARRIS: ARB will be
12 working to provide guidance on risk management related
13 topics. We are committed to working with our district
14 partners, industry, and environmental representatives as
15 we move forward to develop ARB's risk management guidance
16 in a public process.

17 --o0o--

18 AIR POLLUTION SPECIALIST HARRIS: Our first task
19 involves potential updates to existing toxic programs.
20 Route now, we're in the process of updating the hot spots
21 analysis and reporting program, HARP, software so it will
22 be ready for use with OEHHA guidance manual. The HARP
23 software hardwires the OEHHA guidance. Air districts,
24 ARB, facilities, and CEQA consultants rely on the HARP
25 software to perform consistent risk assessments across

1 California.

2 ARB will also amend the hot spots emission
3 inventory and criteria guidelines under AB 2588. The ARB
4 is working with air districts to identify source
5 categories, like gas stations, where it makes sense for us
6 to perform industry-wide assessments for hundreds of very
7 similar sources, rather than ask each individual facility
8 to hire its own consultant to perform individual analysis.

9 ARB will begin to update risk management policies
10 and evaluate how we may assist districts with guidance on
11 permitting.

12 We will also be prioritizing adopted ARB control
13 measures that need to be re-evaluated to consider the new
14 risk estimates and any significant advances in technology.
15 This effort will likely first focus on older regulations.

16 ARB staff will also update the land use handbook
17 to incorporate new information. Now let us focus on the
18 control side of ARB program to reduce the health risk from
19 air toxics.

20 --o0o--

21 AIR POLLUTION SPECIALIST HARRIS: This time line
22 illustrates the evolution of our air toxics program. In
23 the mid-80, the focus of the fledgling air toxic program
24 was individual sources like hexavalent chrome from cooling
25 towers and plating operations. In the 1990s, we

1 considered smaller commercial sources like dry cleaners,
2 added focus on reformulated fuels and gas stations, with
3 fuel specifications and vapor recovery controls to address
4 Benzene emissions.

5 In the early 2000s, our emphasis turned to diesel
6 particulate matter with the Board adoption of the Diesel
7 Risk Reduction Plan. This plan has driven some of our
8 greatest challenges and public health successes.

9 2010 and beyond continues to focus on heavy
10 diesel engines and passenger transportation with trucks,
11 buses, and advanced clean cars leading the way. ARB had
12 adopted and implemented nearly 30 statewide control
13 measures for air toxics, more than a dozen target diesel
14 PM. The rest address a diversity of sources and
15 industries that span the entire state from composite wood
16 products and medical waste incinerators to outdoor burn
17 barrels and brake cleaners.

18 Now let us look how the Board's effective program
19 to address diesel PM is delivering results.

20 --o0o--

21 AIR POLLUTION SPECIALIST HARRIS: The diesel
22 program relies on a combination of regulations and
23 incentives to achieve emission reductions. We expect this
24 substantial private and public investment to upgrade the
25 fleet of diesel vehicles and equipment will cut the cancer

1 risk by nearly 85 percent between 2000 and 2020.

2 Beginning with early adopters like transit bus and waste
3 collection operators, to construction and port equipment,
4 to the extensive effort to upgrade all trucks on
5 California roads, this transition is providing significant
6 public health benefits for our most vulnerable
7 communities.

8 This slide focuses on the statewide risk from
9 diesel PM and ambient air. We know the areas with greater
10 concentrations of diesel sources like South Coast, Bay
11 Area, and San Joaquin Valley will continue to experience
12 relatively higher ambient cancer risk.

13 We also recognize that near-source cancer risk
14 for residents living close to rail yards, freeways, or
15 other freight facilities around the state can be
16 considerably higher than the statewide average as well.

17 As we move forward in reducing the health risk
18 from air toxics, we need to consider the sources of the
19 remaining diesel PM emissions in 2020. Freight transport
20 accounts for a majority of the emissions in 2020. Our
21 sustainable freight strategy will determine the next steps
22 to further reduce emissions from that sector.

23 In addition, ARB is continuing to work with the
24 agricultural industry to develop a long-term strategy to
25 increase the use of the cleanest technologies as they

1 become available for mobile agricultural equipment in the
2 San Joaquin Valley to support ozone attainment.

3 --o0o--

4 AIR POLLUTION SPECIALIST HARRIS: Moving forward,
5 we will focus on protecting public health through a
6 balanced approach that considers the sources that pose the
7 highest risk, while supporting the availability of
8 critical goods and services for Californians. State law
9 highlights the need for this balance. It directs ARB to
10 require the best available control technology in
11 consideration of cost and health risk.

12 Our work will continue to support transparency to
13 the public for both our policy development and access to
14 data about air toxics. We will continue to work closely
15 with the air districts through the leadership of CAPCOA
16 and coordinate with the broader group of stakeholders in
17 development of our policies and programs.

18 --o0o--

19 AIR POLLUTION SPECIALIST HARRIS: To conclude,
20 this slide shows the time frames and milestones for ARB
21 action. In addition to our extensive efforts to implement
22 and enforce existing regulations for diesel PM and other
23 air toxics, we are undertaking new activities. Through
24 the end of the year, we will be working on risk management
25 policies and identifying source categories for an

1 industry-wide approach, followed by a planned update to
2 the Board. Staff will also present the draft sustainable
3 freight strategy to the Board in December.

4 Early next year, we anticipate that OEHHA will
5 finalize the guidance manual and ARB will have the HARP
6 software ready to go. ARB will begin prioritizing
7 existing control measures for subsequent review. Then we
8 will focus on reevaluating the appropriate existing
9 measures and begin developing any new measures.

10 Thank you for your attention. This conclude my
11 presentation.

12 CHAIRPERSON NICHOLS: I have some questions, and
13 I suspect other Board members do, too. But before we get
14 into that, I think we should hear from the people who have
15 signed up to speak to us.

16 I would like to say I think this is a very
17 carefully prepared presentation. Obviously, it's a
18 balance between saying something important is going on
19 here and saying but don't worry because we have a process
20 in mind for managing it carefully. And I think that's a
21 good message. Certainly, that's the right sort of tone
22 that we would like to set.

23 But I also want to make sure that we've really
24 got the structures in place to make good on that. And
25 that on both sides that we're neither sort of glossing

1 over something that's important or raising alarm
2 unnecessarily. So it's a balance in terms of how we both
3 communicate and how we actually proceed. It sounds as
4 though we're doing well.

5 But I'd like to hear from other stakeholders
6 here. So we'll start once again with Jack.

7 Jack, you're getting your money's worth this
8 morning.

9 MR. BROADBENT: Good morning, Madam Chair,
10 members of the Board, again.

11 So I just wanted to be able to provide a
12 perspective from the Bay Area. And Madam Chair, I would
13 agree that I think we do have a process in place to manage
14 these changes moving forward. I do believe that.

15 But that being said, there is going to be a
16 considerable workload, as Ms. Lee indicated, I think on
17 all the districts. But certainly at the Bay Area, we
18 expect these changes will result in about another 150
19 facilities per year having to make additional changes to
20 keep below notification or our risk management numbers as
21 they go through the new source review processes.

22 But I just wanted to take a step back. These
23 changes are occurring at a time in which there is a
24 considerable amount of dialog discussion around toxic air
25 containment exposure down at the community level. What's

1 driving that in the Bay Area is frankly a number of energy
2 projects. Our five refineries all seem to be able to at
3 one make changes in their facilities. That's heightening
4 a lot of concern in the communities, understandably. That
5 comes when we've done a really good job working with your
6 staff through our community air risk evaluation program
7 where we have quantified the risks in various communities.
8 We have identified to the public frankly West Oakland,
9 Richmond, portions of San Jose are all disproportionately
10 impacted. These changes are coming along on top of all of
11 that.

12 So I think frankly from the Bay Area's
13 perspective, what's going to be key is communication. Is
14 being able to explain to the public you're not being
15 exposed to more emissions. We just have better science
16 and understanding what you are exposed to, that this is
17 more potent, this is, indeed, something that we're going
18 to have to deal with.

19 So what we're going to be doing is not only
20 managing -- help to manage the process moving forward. We
21 are also in the Bay Area contemplating lowering our
22 overall risk management threshold. We think that makes a
23 logical sense as well. And how we lay these things out so
24 that we can fully brief the communities and the public and
25 let them understand what's going on is something that's

1 going to take a lot of effort. I know your staff will be
2 there to work with us to make that happen.

3 So I just wanted to make those remarks on behalf
4 of the Bay Area. Thank you, Madam Chair.

5 BOARD MEMBER GIOIA: Can I amplify something
6 since he's from the Bay Area?

7 Jack, I really appreciate how Jack framed this
8 because I sort of see the analogy here is that it's like
9 when the surgeon general came out with new science that
10 cigarette smoking was more harmful to people's health than
11 they thought, that was conveyed in a very clear manner.
12 And so while rates of smoking didn't go up from one day to
13 the next, the new science concluded that there was a
14 greater risk than we all thought. So that sort of the
15 analogy that I think here. Because I've seen even in one
16 of the letters we have from the business community is
17 we're concerned there is a changed public perception about
18 these facilities, even though they're not increasing
19 emissions. That's true. They may not be increasing
20 emissions.

21 But what's happened is we need to clarify that
22 this new science tells us something different that we
23 didn't know yesterday and that the public is entitled to
24 know that. Everyone is entitled to know that. And it's
25 an important factor in making decisions about permits and

1 projects. So I think it's about education. And I think
2 the reality of the health issue is more important than the
3 perception issue.

4 CHAIRPERSON NICHOLS: Understood. That's a
5 useful clarification. Thank you.

6 Dr. Wallerstein.

7 DR. WALLERSTEIN: Well, from your initial Board
8 comments, I see that the purpose of my trip to Sacramento
9 today is really being understood clearly by the Board
10 already. This is why I'm here today, not the previous
11 item. And I was fearful that there wouldn't be a lot of
12 people here and this just might kind of slide by. And
13 this is one of the more significant changes that we've
14 seen in our air programs in a very long time.

15 CARB and the districts pride ourselves on being
16 science based and following the science and that's exactly
17 what OEHHA is doing here. OEHHA has been very, very good
18 about giving us adequate time and sitting with us and
19 explaining their part of the science.

20 And we make the distinction as you've been
21 hearing this morning between risk assessment, the OEHHA
22 portion, and risk management, what our governing boards
23 and what you have to decide in the way of appropriate
24 public policies, regulations, and pollution controls. And
25 I think the supervisor's analogy with cigarettes was right

1 on.

2 But the difference here is that we've got
3 thousands of permits that come through our agency each
4 year now that go through different air toxic screening.
5 And the question is: Will they still be able to pass even
6 with the use of best available control technology. And
7 that is what we are going to have to work to analyze.

8 And as Jack was mentioning, the issue of
9 communication here is key. The environmental justice
10 community, when we first started doing environmental
11 justice work in the late 1990s, expressed great skepticism
12 about our ability to assess risk and quantify it properly.
13 We're now in a position, as you heard, of coming back in
14 many instances and saying we underestimated it by three
15 fold.

16 And so in our case, where we produce our multiple
17 air toxic exposure studies every three to our years, our
18 MATES study, we're about to release a new MATES study.
19 This hasn't been finally approved. But yet, I know it's
20 coming because we're going to follow the science on the
21 quantification side.

22 So what we will be doing when we release the
23 study in the next month or so is providing analysis
24 according to the existing approved method and also
25 providing some analysis that reflects the change that I

1 believe will occur over the next few months. And what
2 that does is instead of having an average risk maybe in
3 our air basin that's on the order of 500 million, we'll be
4 back up at 1200 in a million or so.

5 And some communities will see risk when they look
6 at the maps that will exceed 2,000 in a million. That
7 doesn't negate the fact that we have had 80 percent
8 reduction in toxic risks. But it points to the fact that
9 we have a lot further to go. And there is a synergy
10 between what you're doing on climate change, criteria
11 pollutants, and now toxics is right up there with it. And
12 it's the same sorts of solutions. Thank you for giving me
13 the time this morning on this.

14 CHAIRPERSON NICHOLS: Thank you very much.

15 Mr. Quinn, good morning.

16 MR. QUINN: Good morning, Chairman Nichols and
17 members of the Board.

18 My name is Bill Quinn. I'm the vice president of
19 CCEEB, the California Council for Environmental and
20 Economic Balance. Our membership draws from labor,
21 entertainment, power producers, utilities, aerospace, rail
22 roads, and refineries.

23 This morning, I just want to make a few brief
24 comments on the issue at hand. This is an important issue
25 for CCEEB and our members. We recognize the scientific

1 understanding of risk due to air toxics is changing. At
2 the same time, we need to be mindful of significant
3 progress made by sources under 2588 and subsequent
4 programs and policies to reduce emissions of air toxics
5 and exposure to California communities.

6 As your staff and you have pointed out, it's
7 important to recognize that we have reduced exposure or
8 toxics by 80 percent since 1990. Nothing in OEHHA's new
9 guidelines changes this success story.

10 We believe ARB needs to make it clear that the
11 risk associated with air toxics has not increased. Air
12 toxics emissions continues to be reduced and better
13 controlled every year.

14 What has changed is the method of calculating
15 that risk. The new method results in a significant
16 increase in the risk estimate, but this is not the result
17 of any increase in emissions or exposure. Under existing
18 and future rules, sources will continue the significant
19 downward trend, reducing its emissions and exposure. This
20 needs to be a key point in the public discussions of the
21 guidelines.

22 CCEEB is reviewing the draft guidelines and
23 working on comments. Once the guidelines are finalized
24 and as ARB and CAPCOA move forward in implementing them,
25 there will be a great need for the air agencies to work

1 closely together in order to ensure a clear and
2 transparent process that continues to improve public
3 health while supporting a sound economy.

4 CCEEB would appreciate opportunities for
5 productive engagement and collaboration with the air
6 agencies and other stakeholders on both risk communication
7 as well as a consideration of potential adjustments to
8 risk management programs.

9 Finally, risk communication poses both challenges
10 as well as opportunities to make risk estimates more
11 understandable and meaningful to the public and to
12 communities near sources of emissions. We look forward to
13 working with you and your staff as this issue moves
14 forward. Thank you very much.

15 CHAIRPERSON NICHOLS: Thank you.

16 Mr. Wang.

17 MR. WANG: Good morning. Mike Wang with the
18 Western States Petroleum Association.

19 As the presentation by CARB, OEHHA, and CAPCOA
20 clearly demonstrated, we collectively are going to be
21 charged with an important responsibility. And so whatever
22 ultimately gets implemented or adopted by OEHHA, the
23 agency, whether it be ARB, Cal/EPA or CAPCOA will need to
24 recognize the important roles that we all have individual
25 and collectively to ensure that risk is communicated

1 accurately and appropriate risk management programs are
2 implemented.

3 This is especially important given that the of
4 the past 20 years has been a tremendous reduction in air
5 pollutions of all sorts, including toxic air contaminants
6 and that was amply demonstrated in the presentation.

7 Hence, it's important that we work together to
8 ensure that the regulated community is not unfairly
9 impacted, despite the work they've done in the past.

10 As you may have heard, many have asked for a
11 deferral in the comment period that's currently set for
12 completion on August 4. We made this request to allow
13 time to understand the implications of the HRA process and
14 the implications of the risk management options.

15 We are not debating the need to provide updates
16 to the health risk assessment methodology. We agreed that
17 risk assessments must be updated and must protect public
18 health. That issue notwithstanding for at least as long
19 as we've been involved in this issue, we've stressed a
20 need for showing a range in risk assessments from the most
21 health protective to the medium to the average to the 80
22 percentile.

23 We make this request for two reasons. First, to
24 identify the range of risk management options that may be
25 available given the differing risk assessment estimates.

1 And two, to show policy makers the range of policy
2 decisions and costs involved in the management of those
3 risks. Understanding this range of risk is important to
4 consider when sources are already at the maximum control
5 level possible and have installed all state-of-the-art
6 emission control devices.

7 Finally, as we note, as noted by the staff, the
8 ultimate goal is to have implementing sources and agencies
9 partner to control emissions and accurately and clearly
10 convey the rest of the public. Thank you.

11 CHAIRPERSON NICHOLS: Thank you.

12 Mr. Samson.

13 MR. SAMSON: Good morning, Madam Chair and
14 members.

15 Anthony Samson with the California Chamber of
16 Commerce. Thank you for the opportunity to speak here
17 today. As the staff's presentation illustrated, this
18 proposal is extraordinarily technical and rooted in
19 complicated scientific data that's by no means easy to
20 extrapolate. And because of this, it's difficult to know
21 with great degree of certainty at this time how this
22 proposal will impact the regulated community.

23 But what we do know is that according to the
24 presentation today, the proposed changes will result in
25 health risk estimates of 1.5 to three times current

1 estimates. So with this mind, we believe more time is
2 needed to fully analyze the impact of these complicated
3 revisions to the guidance document and how it will impact
4 the regulated community.

5 This analysis, in turn, we believe will prompt a
6 much-needed dialog with state and local regulatory
7 agencies and the regulated community and will also help
8 inform recommendations for further changes, not only in
9 the draft guidance document, but also with regard to how
10 air districts will ensure facilities will continue to
11 receive permits and operate responsibly in California.

12 And as you've just heard for this reason, the
13 California Chamber of Commerce and a diverse coalition has
14 submitted a request to extend the comment period to
15 Secretary Rodriguez. And we believe that will allow us to
16 provide substantive commentary in the coming weeks that
17 will help this dialogue move forward in a productive
18 manner. Thank you.

19 CHAIRPERSON NICHOLS: Thank you.

20 Mr. Rogge. And then Mr. Magavern.

21 MR. ROGGE: Okay. I'm Mike Rogge with California
22 Manufacturers and Technology Association. And really
23 based upon the Chair's preface comments can cut my
24 testimony down considerably.

25 Understanding that OEHHA is proposing risk

1 calculation changes to the AB 2588 HRA guidance document,
2 we are very concerned about the potential impacts the
3 revisions may have on our members. Because of that
4 importance, CMTA supports the business community's request
5 to allow additional time to review, digest, and provide
6 comments to OEHHA.

7 It is critical as we moved forward that ARB,
8 CAPCOA, and the air districts work closely with the
9 regulated industry in risk communications and also the
10 need for risk management program adjustments. We need to
11 be mindful that we have worked hard to reduce emissions in
12 the AB 2588 program over the past 20 years. We look
13 forward to working with ARB, CAPCOA, and the air districts
14 on this important issue. Thank you.

15 CHAIRPERSON NICHOLS: Thank you very much.

16 MR. MAGAVERN: Bill Magavern, Coalition for Clean
17 Air.

18 We appreciate the excellent scientific work being
19 done by OEHHA. I believe that in recent years the threats
20 posed by air toxics from stationary sources have slipped
21 somewhat below the radar at the state level, while
22 remaining in many communities very prominent at the
23 community level, as we heard from both Mr. Broadbent and
24 Dr. Wallerstein.

25 I know, for example, that I hear a lot from

1 community residents near the Chevron facility in Richmond,
2 which had a horrendous fire two years ago and is seeking
3 to expand. And also some people living near the Exide
4 Battery Recycling Facility in Vernon, which has continued
5 over the years to spew lead and arsenic into the air and
6 the soil around there.

7 So these are really important issues. And it's
8 crucial that we update regulatory standards along with the
9 best science that's available. And that's really what
10 we're talking about here. And particularly important when
11 we're talking as we are here about children's health. So
12 looking as we go forward and looking at the presentations
13 from ARB staff and CAPCOA, I want to say first of all that
14 we strongly support the emphasis on emissions from freight
15 and the fact that this sustainable freight strategy is
16 moving forward. And we continue to work with the staff on
17 that. So really looking forward to the results of that.

18 But also that we continue to look at the facility
19 permits. As we've heard from the air districts, there's
20 going to be a lot of work going into potentially revising
21 those. And therefore, we encourage both ARB and the
22 districts to devote the resources and the attention
23 necessary to get those right and also to be alert to the
24 ways in which risk assessments can be gamed and
25 manipulated. And I mean, Dr. Wallerstein referred to the

1 concern at the community level about risk assessments.
2 And that is often what it comes down to. So it's very
3 important that we be on guard against that gaming and
4 manipulation and make sure that we get the most honest
5 risk assessments possible, because again, we are talking
6 about the health of our children. Thank you.

7 CHAIRPERSON NICHOLS: Thank you.

8 I think that concludes the list of people who
9 indicated they wanted to comment. I suspect the Board
10 members are going to have a number of different comments
11 and questions. But just a reminder before we move onto
12 greater conversation up here that we're talking about sort
13 of two separate things, even though we've got -- maybe
14 three actually, that are linked together in one
15 presentation. But the risk assessment, the risk
16 guidelines are a product of OEHHA, which is a sister
17 agency. And they're on track to get this done by the 4th
18 of August, unless for some reason they change their mind.
19 But they are the agency that's charged with reviewing the
20 science and doing the guidelines.

21 The Air Board and CAPCOA are both in the position
22 of being implementers, but we implement different facets
23 of it. And we also have had input I believe into the risk
24 guidelines in the sense that our scientists have also
25 commented from their perspective on this as well. But

1 it's somewhat similar to the process that we go through in
2 setting air quality standards, except that the decision
3 makers on the standards, which is going to be the
4 districts and the Board, are not looking at another office
5 within our own agency, but to an external agency to give
6 that advise.

7 So with that, turn it over to you, Dr. Balmes.

8 BOARD MEMBER BALMES: Well, first of all, I want
9 to complement OEHHA and their partners CAPCOA and our
10 staff on this effort.

11 First of all, I want to say this is -- this
12 exercise is mandated by SB 25, the Escutia bill, aimed at
13 providing greater protection for children's health. So
14 it's not like this is coming out of clear blue. And it's
15 been a long process, as the Chair indicated in her opening
16 comments.

17 I would agree with Mr. Magavern and Dr.
18 Wallerstein that as we have made major progress with
19 regard to improving air quality in California with regard
20 to criteria pollutants that exposure to air toxics have
21 become more of an important issue. They were always
22 important, but they're now looming larger on our radar
23 screen because we have cleaned up the air with regard to
24 criteria pollutants. And that's taken a major effort.
25 And I think we need to embark over the long haul with

1 increased efforts to reduce health risk from air toxics.

2 And I also agree that our friends in the
3 environment justice community representing communities
4 with hot spots in terms of air toxics are rightly
5 concerned about the exposures of the individuals living in
6 those communities, adult as well as children.

7 So while I realize and don't take lightly that
8 this is going to create a lot more work for the air
9 districts and it's going to impose increased efforts and
10 costs on regulated industries, I think it's necessary to
11 move forward. We need to move forward in a way that's
12 practical as much as possible. So that really means good
13 communication, because I agree with several people who
14 have been concerned about this that if we communicate that
15 suddenly people are incredibly increased risk of cancer
16 and other health outcomes, it's going to create maybe
17 undue alarm. So how we role this out in terms of risk
18 communication is important.

19 That said, I do think that the science has moved
20 on since the last time OEHHA looked at risk assessment
21 guidance. And so it's appropriate to be transparent and
22 communicate to the public how science has shown increased
23 risk for a number of toxic materials.

24 And part of that risk communication process, I
25 think it's important to let the public know that we've

1 made great strides. One of the slides in the presentation
2 talked about 80 percent reductions in ambient cancer risk
3 statewide since 190. That needs to be communicated to the
4 public that we have made progress, but we need to continue
5 on that pathway to further progress with regard to
6 reducing risk health.

7 So I want to end up by saying that -- and staff
8 knows this that I've been championing the use of our
9 adaptive management plan, the component of our AB 32
10 Scoping Plan, and implication efforts to try to maximize
11 co-benefits when -- co-benefits of health when we're
12 trying to control greenhouse gas emissions.

13 So I would end by asking staff in the spirit of
14 what Dr. Wallerstein's talked about in terms of synergy
15 with climate change efforts, are we going to incorporate
16 these new OEHHA risk assessment guidance guidelines with
17 regard to our adaptive management plan? This was a
18 question. I ended up with a question for staff.

19 CHAIRPERSON NICHOLS: You may answer.

20 EXECUTIVE OFFICER COREY: I will take a stab at
21 this.

22 This was touched on. The guidelines touch on
23 multiple programs, the toxic program and
24 coordination/interaction with the districts. So to me,
25 one of the things we're going to look at as these

1 guidelines or updates is we're going to rely on and
2 integrate them in every area where toxic touches our
3 related programs. That's the right response. And then
4 it's how to effectively do it.

5 And the comment staff talked about and I think
6 it's a really important one from a prioritization
7 standpoint can't get to all of this -- what is the process
8 for prioritizing go after those areas where this is the
9 greatest opportunity for follow-up action. But the short
10 response is yes.

11 BOARD MEMBER BALMES: I like that response.

12 CHAIRPERSON NICHOLS: Supervisor Roberts.

13 BOARD MEMBER ROBERTS: I just have a quick
14 question. I'm having trouble when I look at our next
15 steps, I'm comparing that to the letter we received that
16 public comment that we closed on August 4th. It would
17 seem that's not the case.

18 CHAIRPERSON NICHOLS: Public comment on the OEHHA
19 guidelines versus what ARB would do. Two separate. OEHHA
20 just has to finalize a document, which has been out for
21 quite a long time now and gotten a huge of amount of input
22 and review as I understand it. But the next step is to
23 figure out what it means and what to do with it. That's
24 beyond --

25 BOARD MEMBER ROBERTS: That's their decision.

1 CHAIRPERSON NICHOLS: But the science part of it
2 is OEHHA's decision.

3 BOARD MEMBER ROBERTS: Okay.

4 BOARD MEMBER BALMES: If I could insert one piece
5 there.

6 So to address the concern of I guess the Chamber
7 and California Manufacturers and Technology Association,
8 the 60-day period that's going to be up August 4th is just
9 for the -- as you said, for the scientific document from
10 OEHHA. The implementation is going to take much more
11 discussion.

12 CHAIRPERSON NICHOLS: Yes. Absolutely.

13 Yes, Ms. Mitchell.

14 BOARD MEMBER MITCHELL: I think -- and we've
15 heard this from many of our stakeholders, there are really
16 two primary issues here. One is how we communicate this
17 in our public outreach. And I think we need to be careful
18 on how we do that. As we said, we don't want to alarm
19 people unnecessarily, but at the same time there is new
20 science on this. We need to recognize that.

21 And secondly, the second large issue is the
22 implementation of it and how we manage the risk. In many
23 of our districts, we already think we've reached the
24 maximum best available control technology. So that's
25 going to be a very important process. We may need new

1 technology when we have to start investing in more
2 research so that we can reach higher levels of control.
3 We need to recognize also that one of the primary reasons
4 for these risk assessments has changed because of the
5 impact on infants and children. And that's measured over
6 their lifetime from birth to 70 years or whatever we
7 chose. But I know they've reduced that risk to 30 years
8 in this assessment.

9 But that should be also a focus of what we do.
10 How do we manage the higher risk that is now posed that we
11 recognize is now imposed on infants and children? Thank
12 you.

13 CHAIRPERSON NICHOLS: Yes, Mr. Gioia.

14 BOARD MEMBER GIOIA: Just to add without really
15 repeating what people have said because I think there has
16 been a number of good comments.

17 I do think it comes down to communicating maybe
18 three things.

19 One, yes, the science has changed and the health
20 risks are greater than we originally believed. That's
21 truly accurate.

22 Second, there's been a reduction in many areas,
23 not all, in toxic air containments. But there's still
24 more work to do. So acknowledging there has been
25 improvement. And I say this to someone who lives and

1 works in a community with a lot of toxic air contaminants.
2 So science has changed. We've made improvements. There's
3 still more work to do.

4 And third, I think it's maybe useful as part of
5 this putting the context and comparing this to other
6 risks. I don't think that we all do the best job to put
7 in context what a risk factor means and compare it to
8 things that people understand. You know, siting all sorts
9 of numbers, you know, doesn't really -- it's important but
10 doesn't put it in the context of what the other risks are.
11 So I think we should find a way to sort of communicate
12 that point. These are the risks of other kinds of
13 activities or things. And this is what the risk is for
14 this. And that way people can put it in a context.

15 CHAIRPERSON NICHOLS: Yes, Dr. Sherriffs.

16 BOARD MEMBER SHERRIFFS: And along with that, you
17 know, we don't want to go down the path that we are all
18 familiar with. How many signs are there about cancer risk
19 in the state of California that we ignore every day? This
20 is not good communication.

21 We should always bear this in mind as we're
22 thinking about how are we going to communicate this that
23 we want to do it in a much more effective way so people
24 can do some sort of assessment and actually change their
25 risk. So bearing that in mind.

1 And the other important part of this, one and a
2 half, three times of a small risk, but this is in a
3 context of cumulative risk. That was alluded to in terms
4 of numbers changing from 400 to 800 or 1200 or 2,000.
5 That is very important. This is a piece of the iceberg if
6 you will. So it seems like a small number, but it's a
7 very important number. It's part of the cumulative risk.

8 CHAIRPERSON NICHOLS: I think both of these
9 changes, the focus on children and the cumulative risk,
10 are issues that have been raised for years by the
11 environmental justice community and the experts that work
12 with them. And so this is a major step towards addressing
13 those concerns.

14 I had a question related to that. Not even sure
15 if I know how to formulate it exactly. But I'm curious to
16 know whether there is an overlay or an ability to overlay
17 this information on top of what already exists with the
18 risk tool that's being used to address the disadvantaged
19 communities, the geographically based tool that we're
20 using to identify those communities that are considered to
21 have the greatest burden from all forms of pollution. If
22 you were to look at it in addition the information about
23 numbers of children in those communities, would that
24 change the possibly -- could that change the
25 identification of communities?

1 MS. MARTY: I'll take a stab at that. We can
2 already look at the number of kids in impacted communities
3 and have done so. And for some of the higher impacted
4 communities, they do have a larger percentage of children
5 as a total population, fraction of population.

6 CHAIRPERSON NICHOLS: Okay. So that's another
7 thing to be considered.

8 And then another question that I had, I'm
9 assuming that in addition to the ARB other environmental
10 regulatory agencies are also going to be using this tool
11 in their own programs. And one of the ones that came to
12 mind when one of our fellow Board members was speaking was
13 the Green Chemistry Program at DTSC and whether they will
14 be looking at this information when they start looking at
15 targeting or identifying chemicals where we should be
16 looking for safer substitutes. Because that's a whole
17 different approach to dealing with this problem, which
18 also seems to have a lot of potential in addition to
19 possible new technologies or new regulations.

20 MS. MARTY: I can't speak for the Department of
21 Toxic Substances Control, but I have been working with
22 them on some of their implementation. And they already
23 have a number of factors in their statute and in their
24 regulations now that they need to look at when they
25 prioritize chemical product combinations. And they are

1 looking at impacts on children from the perspective of
2 both toxicity and products where they're either aimed at
3 kids, for kids, or exposure to children is very likely
4 from use of the products.

5 CHAIRPERSON NICHOLS: Thank you. I think it's
6 always helpful to know we're not the only people who are
7 wrestling with these issues and there are other tools to
8 be brought to bear as well. I think that's it as far as
9 my concerned are concerned. If my fellow Board members
10 are ready, we can just thank you all for a really
11 informative presentation and look forward to continuing to
12 work on this process.

13 It appears to be a good time to think about
14 taking a lunch break. We have a couple of more items on
15 our agenda today. So shall we try to get back at 1:00?
16 Okay. Very good. Thanks, everybody. We will be in
17 recess then until 1:00. We will not be having an
18 executive session today during lunch period.

19 (Whereupon a recess was taken at 12:07 Pm)
20
21
22
23
24
25

1 findings from the current measurement program and how it
2 relates to other greenhouse gas monitoring efforts
3 underway in the state. And staff will also discuss
4 proposed enhancements to the ARB's greenhouse gas
5 monitoring network and research efforts to assist in
6 meeting AB 32 program priorities for short-lived climate
7 pollutants and other greenhouse gases.

8 And following staff's presentation, Riley Duren
9 of NASA's Jet Propulsion Laboratory will present an
10 overview of the Megacities Carbon Project in Los Angeles,
11 which is being coordinated with ARB's measurement program.

12 With that, I'm asking going to ask Dr. Abhilash
13 Vijayan of the Research Division to give the staff
14 presentation.

15 (Thereupon an overhead presentation was
16 presented as follows.)

17 MANAGER VIJAYAN: Thank you, Mr. Corey. Good
18 afternoon, Chairman Nichols and members of the Board.

19 In our informational briefing today, we will
20 provide an overview of ARB's greenhouse gas measurement
21 program, describe the various tools and partnerships that
22 contribute to the effort, present the major findings of
23 the program, and discuss short-term and long-term goals.

24 --o0o--

25 MANAGER VIJAYAN: California is working to reduce

1 greenhouse gas emissions across all sectors of the economy
2 under the framework of Assembly Bill 32, the Global
3 Warming Solution Acts.

4 As California has implemented AB 32, we have
5 worked to develop greenhouse gas monitoring capabilities
6 to support our short- and long-term climate goals. An
7 ambient measurement program for greenhouse gases helps
8 support AB 32 implementation in several ways. Greenhouse
9 gas measurements can help identify sources, evaluate the
10 emissions from these sources, help identify new emission
11 reduction strategies, and help track progress in reducing
12 emissions. An important goal of this research effort is
13 to link ambient measurements to emission sources in
14 California.

15 --o0o--

16 MANAGER VIJAYAN: California's ambient
17 measurement program has primarily focused on short-lived
18 climate pollutants, namely black carbon,
19 hydrofluorocarbons, or HFCs and methane, along with
20 nitrous oxide or N₂O. It is more challenging to determine
21 and track emissions from these pollutants than carbon
22 dioxide emissions from combustion sources.

23 For example, methane emissions from livestock
24 operations, oil wells, and landfills throughout the state
25 are variable and difficult to measure. Also, developing

1 information to support these new strategies to reduce
2 short-lived climate pollutants provides immediate climate
3 benefits.

4 To date, the measurement program has provided
5 important information related to emissions of HFCs and
6 methane and reductions in black carbon. This information
7 is improving our understanding of the sources of these
8 pollutants and their associated emissions.

9 --o0o--

10 MANAGER VIJAYAN: The foundation of ARB's
11 measurement program is a statewide greenhouse gas
12 monitoring network. The network was initiated in 2010
13 with a permanent station at Mount Wilson Observatory in
14 the Los Angeles basin. Since then, we have expanded the
15 network to six ARB-operated stations shown here in blue
16 and two run by Lawrence Berkeley National Laboratory for
17 ARB shown here in green.

18 In addition, we also collaborate with research
19 partners on several other monitoring locations represented
20 by red dots. We have equipped these stations with
21 state-of-the-art monitors for carbon dioxide, methane,
22 nitrous oxide, and black carbon. We are also deploying
23 analyzers capable of measuring methane isotopes to get a
24 better understanding of the emissions sources. Together,
25 this network is a first of its kind greenhouse gas

1 monitoring effort.

2 --o0o--

3 MANAGER VIJAYAN: The greenhouse gas network
4 consists of tower station. Based on the direction of
5 prevailing winds, each tower has a measurement footprint
6 for which it represents upwind emissions. As evidence
7 from the graphic, a taller tower will have a larger
8 footprint. Therefore, through proper planning, we can
9 effectively monitor statewide emissions using a limited
10 number of very tall towers.

11 Ambient measurements made by these stations are
12 analyzed by our staff and academic partners. Data
13 generated from the monitoring network can be compared to
14 the information on emissions for various sectors to see if
15 sources or emissions of greenhouse gases are being missed.

16 --o0o--

17 MANAGER VIJAYAN: We also employ other in-house
18 measurement tools like mobile platforms, flux chambers,
19 and tracer release studies to gain a better understanding
20 of individual emission sources. ARB has also funded
21 aircraft measurements through the CalNEXT project and
22 other remote-sensing campaigns.

23 I would also like to highlight that ARB staff are
24 presenting a greenhouse gas measurement showcase in the
25 lobby today and will be available to discuss the

1 applications and operations of the greenhouse gas
2 monitoring network and other measurement and research
3 tools in more detail.

4 --o0o--

5 MANAGER VIJAYAN: In addition to the various
6 in-house research efforts, we also collaborate with others
7 on a variety of measurements, including satellite
8 measurements, aerial measurements, and ground level
9 measurements like monitoring towers, mobile measurements,
10 field studies, remote sensing studies, as well as lab
11 studies.

12 Our program is also greatly assisted by the
13 California Energy Commission which funds complimentary
14 projects in the state. Collectively, all these tools have
15 helped us gain a better understanding of greenhouse gas
16 sources and emissions in California. The next few slides
17 will briefly discuss the key findings of the measurement
18 program.

19 --o0o--

20 MANAGER VIJAYAN: Because of its role in health
21 effects and visibility degradation, ARB started to measure
22 black carbon not long after the agency was first
23 established in 1967. These measurements have demonstrated
24 that over the last 45 years there has been over 90 percent
25 decrease in black carbon levels in California, even though

1 diesel fuel consumption went up by a factor of five. This
2 reduction is due to California's effective regulatory and
3 enforcement efforts for diesel engines, agricultural
4 burning, and other black carbon sources.

5 --o0o--

6 MANAGER VIJAYAN: More recent efforts have
7 focused on methane, a powerful greenhouse gas. Three
8 separate studies using aircraft measurements and
9 greenhouse gas monitoring network data, suggest that
10 statewide methane emissions are greater than previously
11 known.

12 As shown on the map, the majority of emissions
13 are located in the Central Valley and ongoing research in
14 collaboration with our partners is expected to provide new
15 information to better understand sources of methane and
16 their emissions.

17 --o0o--

18 MANAGER VIJAYAN: Los Angeles is another
19 important source region. As shown in the graphic,
20 greenhouse gases in the region are emitted and then
21 diluted by atmospheric mixing. The daytime sea breeze
22 pushes the well mixed up from into the San Gabriel
23 mountains, carrying the disbursed emissions from the
24 entire Los Angeles basin. We installed equipment at the
25 Mount Wilson Observatory to take advantage of this

1 opportunity to study greenhouse gas emissions from the
2 entire Los Angeles County using a single location.

3 --o0o--

4 MANAGER VIJAYAN: The very first pilot study at
5 Mount Wilson started in 2007 and focused on methane
6 emissions. Looking at the first bar chart, our ambient
7 measurements shown here in red suggested that the Los
8 Angeles County methane emissions were significantly
9 underestimated as shown here in blue. These observations
10 were further validated by studies from CalTech and other
11 groups and suggested that oil and gas sector emissions
12 were underestimated. As shown in the second bar chart,
13 the methane emissions inventory has been updated and now
14 correlates well with ambient monitoring data.

15 --o0o--

16 MANAGER VIJAYAN: A similar study measuring
17 hydrofluorocarbons and other fluoridated gasses at Mount
18 Wilson was instrumental in improving our understanding of
19 these emissions in California.

20 The previous emission estimate using a national
21 U.S. EPA based method shown here in dark blue is
22 significantly different than the ambient-based emission
23 estimates using Mount Wilson data, which is shown in red.

24 A review of the Mount Wilson data triggered a
25 revision of the emission inventory method. The new

1 California-specific emission inventory shown in light blue
2 as the last in each series is consistent with the Mount
3 Wilson measurements.

4 --o0o--

5 MANAGER VIJAYAN: More recently, a 2014 study at
6 the Mount Wilson station suggested that nitrous oxide
7 emissions in the Los Angeles region may be significantly
8 underestimated. However, we are still in the early stages
9 of research to identify the nitrous oxide emissions
10 sources. In addition, nitrous oxide measurements have
11 been recently added to our entire statewide network.

12 --o0o--

13 MANAGER VIJAYAN: As we continue to develop and
14 implement the greenhouse gas measurement program, we have
15 a number of near- and long-term goals.

16 In the short term, ARB has funded a statewide
17 analysis of nitrous oxide emissions, which is expected to
18 be completed in 2015. In addition, we plan to add and
19 expand hydrofluorocarbon and volatile organic compound
20 measurements statewide.

21 We are also planning to transition to taller
22 towers throughout the state. Currently, we have been
23 utilizing existing monitoring stations which are closer to
24 ground level because they are designed to characterize
25 human exposure to air pollution. However, to effectively

1 characterize greenhouse gas emissions over a large region,
2 taller measurement towers are needed. We also want to add
3 boundary layer measurements to improve accuracy.

4 --o0o--

5 MANAGER VIJAYAN: In addition to our short-term
6 priorities, we also have longer term goals. We want to
7 expand measurement capabilities to quantify
8 source-specific emissions and also continues our research
9 collaborations to further improve our understanding of
10 greenhouse gas sources and emissions in California.

11 --o0o--

12 MANAGER VIJAYAN: In summary, greenhouse gas
13 measurements support multiple AB 32 programs. ARB's
14 monitoring network helps improve emission inventories and
15 source attribution for important greenhouse gases. In
16 addition, research collaborations will continue to provide
17 new information to help California meet long-term climate
18 goals.

19 --o0o--

20 MANAGER VIJAYAN: This concludes staff's
21 presentation. This will be followed by a presentation by
22 Mr. Riley Duren from NASA's Jet Propulsion Lab who will
23 provide an overview of the Megacities Carbon Project and
24 other federal efforts.

25 Riley.

1 MR. DUREN: Thank you. Appreciate the
2 opportunity to speak today.

3 JPL, if you're not aware of it, is in Pasadena,
4 California. We are a federally-funded research and
5 development center operated for NASA by CalTech. We are a
6 division of CalTech. We're most known for landing robots
7 on Mars, but half of our work is to studying planet Earth
8 and space and from aircraft. I'm going to talk about
9 that.

10 I'm the Chief Systems Engineer for the Earth
11 Sciences Technology Directorate there, but I'm lucky my
12 boss lets me do exciting research focused on decisions
13 support for climate, in particular carbon and greenhouse
14 gas monitoring.

15 So I'm going to talk a bit about the Megacities
16 Carbon Project and then also two related efforts,
17 including methane detection and a broader project focused
18 on carbon decision support in response to a Congressional
19 mandate.

20 I want to point out the Megacities project really
21 is an inter-agency project funded by NIST, NASA, NOAA,
22 with support from the Air Resources Board, and other
23 sponsors. And as a result, there are a number of
24 co-principal investigators. I'm one of the principal
25 investigators. But you can see we have quite a collection

1 of very highly renowned scientists across California and
2 the US that are involved in this project and also talk
3 about some international collaborators.

4 --o0o--

5 MR. DUREN: Why focus on cities? This animation
6 you see is actually a computer model using real data that
7 shows CO2 emissions. And we've highlighted the emissions.
8 What you're seeing are concentrations higher than the
9 current atmospheric average greater than 400 parts per
10 million. The takeaway from the animation is that most of
11 the emissions are coming from a small fraction of the
12 Earth. It turns out about 80 percent of the fossil fuel
13 carbon dioxide emissions come from less than five percent
14 of the land. Those hot spots are mainly cities and their
15 power plants. That shouldn't be a surprise to us because
16 that's where most of the people live and where most of the
17 energy demand is.

18 And there's similar concentrations of methane,
19 although in the case of methane, you see this is more
20 rural areas associated with production. We'll talk more
21 about that. So they're important because they're the
22 biggest emitters.

23 --o0o--

24 MR. DUREN: The second reason we focus on cities
25 is that frankly cities and states and selected provinces

1 around the world are turning out to be the first
2 responders for climate change. They're taking action in
3 areas that we are not seeing nation states do yet. So for
4 the city's example, there is a group called the Climate 40
5 that was spearheaded by former Mayor Bloomberg of New York
6 City and Mayor Villaraigosa of Los Angeles and others and
7 they link together and are making significant reductions.
8 These are commitments that have been placed since 2007 and
9 we're seeing emission come down in some of the big cities.
10 And so that's important because these cities that I've got
11 on this map, the Megacities, collectively are the third
12 largest emitter in the world after the US and China.

13 --o0o--

14 MR. DUREN: Another motivation is emerging
15 climate policy actions. You're well aware of this in
16 California. California is out in front with cap and
17 trade. And even in the absence of national level cap and
18 trade programs, we're seeing the emergence of sub-national
19 trading programs in the Americas and Europe and in Asia.
20 China, you're probably aware has a significant pilot
21 project involving five Megacities and two provinces. I
22 know that California is working with them. And there's
23 significant potential as a policy mechanism if there's
24 sufficient trust to link and trade between these markets.
25 To the extent with better carbon data we can improve

1 confidence and trust to incentivize others to participate
2 in this, then that's perhaps a good thing.

3 --o0o--

4 MR. DUREN: So all of that motivated us a couple
5 years ago -- almost three years ago now -- to pose a
6 concept for a global carbon monitoring system focused on
7 where most of the emissions are, where the cities are.
8 This is a conceptual view showing -- the red colors show
9 you where most of the CO2 is coming from. The black dots
10 show you the locations of Megacities that exist today.
11 And the blue ones are Megacities that are projected to
12 cross that threshold more than ten million people by 2035.

13 You see all those blue dots in Asia, they're
14 popping up all over the map as urbanization continues.
15 The idea is somewhat like the weather service. The idea
16 is combine measurements of greenhouse gases in the air
17 from surface stations, just like meteorological services
18 and then satellites which see everywhere and combine those
19 two things to produce carbon data. Instead of
20 precipitation and tornados, we're talking about CO2 and
21 methane in the atmosphere and where is it going and where
22 is it coming from.

23 --o0o--

24 MR. DUREN: To test that approach and dry run it,
25 we established a pilot project called the Megacities

1 Carbon Project. Most of the focus I'll talk about today
2 is on Los Angeles, the US component, but our partners in
3 Paris have been at it in parallel with us for the last few
4 years. They're up and running with a similar effort.

5 We're having active discussions with colleagues
6 in San Pablo, Brazil. We are going down in August to try
7 to kick start an effort there. They're also exploratory
8 discussions with various cities in Asia.

9 So what are we trying to do with this? I just
10 put some general questions on this chart. Questions are:
11 What are the carbon emission of cities and how are they
12 changing? Why are emissions changing, specific to
13 sectors, policies, and behaviors. Are mitigation efforts
14 and policies having the intended effect? If not, why?
15 How reliable is the carbon data people are reporting,
16 including from these sub-national markets? And can we
17 establish mechanisms for transparently sharing data
18 between cities? This has been a real barrier at the
19 national level on trust and sharing data. We're trying to
20 do a research effort to establish a transparent data
21 portal where cities share data across boundaries.

22 --o0o--

23 MR. DUREN: So how does this work? There is kind
24 of five steps involved. And I'm going to walk you through
25 them for the Los Angeles projects. So we start with

1 coming up with our best prior estimate or initial estimate
2 of CO2 emissions in Los Angeles.

3 And this applies somewhat to other gases, but
4 I'll speak to fossil fuel CO2 here. This is a product
5 called Hestia. It's named after I believe a Roman
6 goddess. The concept is to take publicly available data
7 and grid it up in space and time so that we have
8 information at the level of individual buildings,
9 individual roads so we can see how it evolves in time so
10 we can link policies with what we're seeing in the
11 atmosphere. This is a bottom-up estimate.

12 What you see here is a map of the five counties
13 in southern California that comprise the LA Megacity.
14 What I'm going to do is zoom into a small area in Los
15 Angeles County where building level data is available. So
16 what happens here is Kevin Gurney and his team at Arizona
17 State lead this effort of taking publicly available data
18 that classifies buildings by type. So they're key
19 building types, residential, commercial, industrial. And
20 within them, there are different building classes and age
21 types. So for example a given type of building commercial
22 might have 22 classes. That's how much resolution we
23 have.

24 What they then do is then predict what the
25 emissions should be based on data such as surveys of

1 natural gas use. So we know that buildings don't generate
2 their own power, but they do use natural gas. The
3 electricity generation is based on other module, which
4 looks at all the power plants. We have that data.

5 What you see here is that it's color coded by the
6 redder buildings are emitting more, and there's actually
7 some initial findings here that this is probably not a
8 surprise. But large offices, apartment building with more
9 than five units, and large industrial building tend to
10 emit significantly more than other building types. The
11 point is that data is there and we can track it over time,
12 including hour and hour and day to day with models about
13 activities and behavior.

14 --o0o--

15 MR. DUREN: The other dimension of this is
16 looking at road traffic. This is a similar approach
17 looking at the annual emissions of CO2 from roadways
18 on-road traffic across the five counties. And again, if
19 we zoom into kind of the Palos Verdes peninsula in Los
20 Angeles County, you see red indicates larger emissions
21 than green. And notice these emissions are quite larger
22 in some areas by segments. This is based on a combination
23 of traffic data from the Southern California Association
24 of Governments, together with modeled emissions from EPA's
25 emissions models, and vehicles miles travel data.

1 The idea is this model comes on line, as this is
2 data set comes online, we'll have a space-time resolved
3 estimate of where the emissions are going in Los Angeles
4 so we can link to the next step.

5 --o0o--

6 MR. DUREN: The next step is to model the
7 atmosphere. Because if we're trying to relate emissions
8 of greenhouse gases from specific sources and how they
9 change the atmospheric composition that we're measuring --
10 we talked a minute ago about the measurement network
11 across California -- we need to translate that because the
12 atmosphere is moving. Winds move the air around. The
13 boundary layer moves up and down day to day. What this is
14 on the left shows you what the prior emissions look like.
15 If I take the Hestia model and predict how much CO2 is
16 going into the atmosphere and grams of carbon per square
17 meter per unit of time. And the right is showing us what
18 the concentration would be at a certain level. This is 50
19 meters above ground level over time.

20 This works both ways. You can measure the
21 concentrations on the right with our greenhouse gas
22 analyzers and then use the computer model to run it
23 backwards in time and say where do the emissions come
24 from. And then given your database I talked about before,
25 you can start to relate what we're seeing in the

1 atmosphere to activity at the level of buildings, parcels,
2 roadways, and specific policies.

3 --o0o--

4 MR. DUREN: To make those measurements, we need a
5 measurement network. So my third step here echoes what
6 the ARB is doing at the state level. This is a network
7 we're standing up in Los Angeles 16 measurement sites in
8 and outside of basin. The reason why we put them outside
9 the basin, if you look at this little color map, this is a
10 heat map of where we see the emissions are. The urban
11 areas are going to be dirtier than the remote sites. We
12 do have four sites that are outside the basin that serve
13 as background so we have something to compare against.

14 I'm going to zoom in quickly and talk about three
15 of these sites: Victorville, Granada Hills, and USC where
16 we've been collecting data just to illustrate there is a
17 wide variation in concentrations that we measure in the
18 atmosphere at different places.

19 These curves -- I won't get into detail -- on the
20 left is CO2. This is methane over a period of about a
21 month. The green line is what we measure at Victorville.
22 The red and blue lines is what we measure at USC and
23 Granada Hills. And you notice the urban sites are much
24 more polluted as you would expect. But the point is that
25 there is method behind the layout of this network and why

1 we have the number of sites that we have.

2 --o0o--

3 MR. DUREN: The fourth step here is going beyond
4 individual cities. This is where satellite capabilities
5 are emerging. You probably heard in the news NASA
6 launched its orbiting carbon observatory a few weeks ago.
7 It was a huge step forward for the community. And that
8 satellite and other satellites that are coming in the
9 future will have the capability to directly detect the
10 emissions of cities and over time monitor their trends.
11 It's by combining these sorts of measurements from space
12 with the surface networks we hope to have a closed loop
13 system for accounting.

14 --o0o--

15 MR. DUREN: I'm now going to start this
16 animation. Can you run it for about two seconds more?

17 What we're going to show is a video that shows
18 how we put all these things together to give us
19 information relevant to decision making. This is an
20 animation of Los Angeles. The little yellow towers you
21 see represent measurements from individual measurement
22 sites. The ray of sunlight that's coming in, it looks
23 like a laser beam coming in from the left is supposed to
24 represent sunlight bouncing off the surface of the basin.

25 And you can go ahead and let it go.

1 It goes up to a censor on Mount Wilson I'll talk
2 about in a minute. And that instrument actually is like a
3 satellite. It's monitoring gases from across Mount
4 Wilson. We have airplanes that fly through the basin and
5 sample the air. And then here comes the orbiting carbon
6 observatory. It's not really that low. But we had to
7 make it fit the animation.

8 But this is the test bed. And the idea is to
9 test these things over the next couple years. But in the
10 future as the satellite technology emerges, I mentioned
11 the weather service. This is the concept of the carbon
12 weather satellite parked over the U.S. The reds that you
13 see are puffs of carbon monoxides coming from cities.
14 This is a simulation. You would expect CO2 to do about
15 the same.

16 The white things are the night lights. You can
17 see the gases are correlated with where all the people
18 are. And then you see us zoom in here. The idea is that
19 persistent observations everywhere watching all these
20 molecules of greenhouse gas and where they came from is
21 where we hope to go over the coming decade or so.

22 --o0o--

23 MR. DUREN: Finally, connecting it back to what
24 matters in terms of making decisions. Because we make
25 decisions based at what happens at the block level, the

1 street level, the counties, cities, different policies, in
2 sectors, it's important to relate this back to emission
3 sector specific data. So that initial data set that I
4 talk talked about at the street level, this ultimately
5 gets pulled back into a model and we have to relate it.

6 --o0o--

7 MR. DUREN: That's okay. I was basically just
8 going to show the maps I showed earlier. But they're
9 moving in space and time.

10 In my remaining time, I want to mention a few
11 related projects that intersect with the Megacities
12 projects, but they're distinct. They're not under the
13 same sources. They're mainly NASA projects. They have A
14 lot of overlap with the state of California's greenhouse
15 gas program. So I'll just take us to the next slide.

16 --o0o--

17 MR. DUREN: So one national challenge that we're
18 confronting right now is the potential of methane leaks
19 from the oil and gas supply chain from well head to user.
20 I think the state-of-the-art and in surveys that have been
21 done -- you probably read about this in the paper and
22 scientific literature -- where people have gone out and
23 done surveys and made measurement of methane, for the most
24 part the supply chain is pretty solid. But there is what
25 we call a long tail problem where we believe a small

1 fraction of the infrastructure is releasing a large amount
2 of emissions. We call them super emitters.

3 The challenge is it's hard to predict where they
4 are and when they're happening. They can last fairly
5 short time. They can last for a few weeks and release a
6 lot of methane. This is important when you consider the
7 map. This is an energy information agency map of all
8 known oil and gas wells in the US. Those are the brown
9 and blue dots. There are several million of those.

10 The idea of building a system that can track all
11 those things, including the pipelines and distribution
12 systems and potential sources of methane is daunting.

13 The concept we've been working on is a national
14 monitoring system that includes a satellite like the one
15 we talked about a minute ago that monitors all these sites
16 all day long every day, that looks for a hot spot to flare
17 up and we can pinpoint it to that little grid on the left
18 is -- each of those little squares is about 500 yards on
19 the side. Once we find something, we then flag it for
20 follow up with the aircraft. The aircraft can come in and
21 provide images of these invisible plumes of methane. I'll
22 show you a example of that in a minute.

23 --o0o--

24 MR. DUREN: So the idea is if you want to
25 quantify methane from space, how you get there. Air

1 Resources Board is one of the agencies that have supported
2 the development of this beautiful facility you see on the
3 left, the California Laboratory for Atmospheric Remote
4 Sensing on Mount Wilson. It acts like a satellite because
5 it looks over the whole L.A. basin. It can monitor all
6 day long, at least during sunlight hours.

7 This is a preliminary result from that measuring
8 system. What you see here is a map of methane to CO2
9 ratios in the atmosphere over the L.A. basin. And the red
10 means there's more methane than in other places.

11 What we see from this initial product is that for
12 many years we've known the methane budget was higher in LA
13 than we had predicted. But here, we're starting to zero
14 in on why. So we haven't correlated this to specific
15 point sources yet. But that's the direction we're
16 heading. This is my first tier of that observing when I
17 talked about the national system.

18 --o0o--

19 MR. DUREN: If you want to zoom in and pinpoint
20 methane emissions remotely, there is another technique.
21 In this case, we're involving basically thermal imaging
22 that's tuned to a methane band. What I'm showing here in
23 the upper left is a control release experiment that was
24 conducted last summer at the Department of Energy's
25 facility. What the team did is replace methane at

1 different control rates. This airplane flew overhead and
2 they imaged it. The plumes are invisible. The airplanes
3 can see them. The idea here is to project this to other
4 areas.

5 You can probably see this on your computer
6 screens, but what I'm showing now is a test we ran a few
7 weeks ago at La Brea tar pits. The road isn't that
8 curved. But that is Wilshire running up and down on the
9 left. Where you see the circled green spots, those green
10 spots are where the airplane detected hot spots of methane
11 flying overhead.

12 On the right is where I got out in my Prius and
13 drove around with my piccaro and gas analyzer and measured
14 high concentration of methane at those spots. Pretty good
15 agreement.

16 I'll say on the bottom right-hand corner, we even
17 see what appears to be methane coming from individual
18 sewer vents on top of a building. And we haven't
19 confirmed this yet, but those would be -- imagine you've
20 seen a building and they have vents on top for the methane
21 from sewer vents. Fairly small.

22 --o0o--

23 MR. DUREN: So I'm going to close with a word
24 about NASA's broader carbon monitoring system. NASA has a
25 Congressional mandate to leverage its significant

1 portfolio in satellite observations and aircraft
2 observations of the atmosphere land and oceans to support
3 decision making for greenhouse gases.

4 So currently, the program has 37 pilot projects
5 that range from global scale to the U.S. national scale to
6 state level. There are projects in California, county
7 level and urban scale. They range from ocean, land, and
8 atmosphere. And in addition to delivering data sets, they
9 including funding for myself. One of my other projects --
10 and Bart Croes here is a member of my team -- called the
11 Understanding User Needs Project. And our job is to go
12 out and work with stakeholders to understand what data is
13 needed, what questions could help to benefit from better
14 data, and how can we help inform and direct the research
15 program. So that's our job is to provide that bridge to
16 the user community. Just to close --

17 --o0o--

18 MR. DUREN: -- on a few examples. What I'm
19 showing on the left is a map of forest biomass for the
20 United States at fairly high resolution. They're driving
21 us down to one hectare. This is from Sesan Saatchi at JPL
22 who leads a group of people, including collaborators at
23 Forest Service.

24 On the right now zooming in the county level,
25 this is data at very high resolution, 30 meter resolution

1 again above ground forest biomass for several counties in
2 Maryland led by Ralph Dubayah. He also has a project for
3 Sonoma County in California which is geared towards
4 supporting RED and carbon offset trading.

5 Finally, an example of using methane observation
6 from satellites, which are still in their infancy, but to
7 use them to help test inventories, including different
8 sectorial estimates. This is work that Daniel Jacob and
9 his team at Harvard are doing using Japanese and European
10 satellites at the moment.

11 So with that, that's my survey. And I'd be happy
12 to entertain questions. Thank you.

13 CHAIRPERSON NICHOLS: Thank you. Your inclusion
14 of the map that was attributed to Sesan reminds me he was
15 a colleague at UCLA at the Institute of the Environment.
16 He was also collaborating with people at UCLA on some work
17 that related to looking at the effects of global warming
18 on a regional scale basis. I don't know if that's work
19 that's also going on in your shop now as well. But we did
20 get a briefing on that at one point a number of months ago
21 I think, the ability now to sort of look at an area the
22 size of the L.A. basin and talks about what's likely to
23 actually happen in terms of things like drought and fires
24 and so forth. Is that part of the work that you're doing
25 as well as?

1 MR. DUREN: Yes. Sesan is prolific. And I will
2 say there are a number of other researchers.

3 Generally speaking, our efforts on the applied
4 science front include not just mitigation, but climate
5 adaptation. They're efforts that focus on water
6 resources. There are activities underway now looking at
7 the bay delta and also the Sierra Nevadas using a number
8 of airborne platforms. We're trying to make connections
9 between hydrology and water availability and shortages
10 with ecosystems. There's work going on in the Central
11 Valley looking at groundwater, using satellite data to
12 look at subsidence as a proxy for groundwater discharge
13 and recharge.

14 There's also work involving crop stress, using
15 remote sensing to assess crop stress and health at
16 different scales.

17 CHAIRPERSON NICHOLS: To what extent can we
18 compare the information that you're getting about the
19 sources in the Southern California region with other parts
20 of the United States? Do you have similar efforts going
21 on in this through the Megacities project? Is that coming
22 up?

23 MR. DUREN: It's not specifically the Megacities
24 project, but I can say that NIST, which is one of the
25 major sponsors for the L.A. effort, also funds the project

1 called Influx in Indianapolis and starting to fund work in
2 the northeast corridor between DC and Boston.

3 They're also involved in doing this
4 internationally. I mentioned San Pablo, Paris, cities in
5 Asia. NIST is actually working internationally. So there
6 is -- I can give you a figure of merit. When we have a
7 session at the American Geophysical Union every year in
8 December in San Francisco and with we started this effort
9 three or four years ago, we had groups from three cities
10 that would show up and give talks. Last year, we had 13
11 cities. And abstracts are due in a couple weeks. I'm
12 hoping we'll see 20 or more. It's proliferating.

13 CHAIRPERSON NICHOLS: Thank you.

14 BOARD MEMBER SPERLING: In the first presentation
15 that ARB one, there was a graph presented and a statement
16 made that the emission inventories now are well correlated
17 with these ambient measurements. That's -- I mean, I'm
18 kind of surprised, even stunned, to hear that because
19 everything I hear is that we have no idea how much methane
20 leakage -- I'm speaking nationally now. We have no idea
21 what it is that was a study that came out last year that I
22 said that -- I think using numbers like 1.5 percent of the
23 methane is leaking overall.

24 But, you know, as one of you said, there's really
25 high leak super emitting -- even like city of Boston has

1 been documented to have tremendous leakage because they
2 have old pipes that were made out of iron and that they
3 corroded and don't even exist as pipes anymore. So
4 there's tremendous leakage in some distribution systems.
5 There's flaring at the Shell Oil facilities. There's
6 flaring.

7 So anyway, the story I understood -- and this is
8 really important -- is that we don't know how much leakage
9 there is. But now you're telling me at least for
10 California -- or I guess this was L.A. County, we do know.
11 And if that's true, I mean, that's hugely important. Just
12 for the LCFS, for instance, the new Greek model that came
13 out that we used for measuring emissions of natural gas
14 associated with natural gas vehicles, they came out and
15 said the leakage -- because of the leakage that hasn't
16 been measured, the numbers are probably 20 percent worse
17 than they had been -- that we had been using in the past.

18 So if what you said is really true or if we're
19 really close to that, that has tremendous implications
20 back to a lot of our policies here. As Chairman Nichols
21 also said, you know, it varies greatly across -- she was
22 suggesting it varies greatly. And that means that the
23 numbers that we use here in California probably are
24 different -- for methane leakage are probably very
25 different numbers that might be used somewhere else. And

1 that has tremendous implications as well.

2 So can you kind of -- what's really going on
3 here? Have you made this tremendous break through where
4 science has prevailed?

5 DEPUTY EXECUTIVE OFFICER TERRY: Well, I'll be
6 happy to kick it off because I think this really is very
7 significant in terms of the point that we're very close in
8 Los Angeles County. And I think that in a way is not
9 surprising, given the effort that we've always put into
10 inventories. But that's the good news story.

11 The bad news story is the slide in the Central
12 Valley says we're way off. That's where most of the
13 methane emissions are from a statewide perspective.
14 You're right from the standpoint of the vehicle side and
15 the distribution side in the urban area.

16 BOARD MEMBER SPERLING: If we figured it out for
17 L.A. County is this just amount of spending a little more
18 money to get your numbers elsewhere?

19 DEPUTY EXECUTIVE OFFICER TERRY: Well, I'm going
20 to ask technical staff. But that seems it's been our
21 history with inventories that you spend the money and the
22 effort and it gets a lot better.

23 RESEARCH DIVISION CHIEF CROES: Part of it is I
24 think there's been more effort to controlling our oil and
25 gas sector than in other parts of the country, which is

1 reflected in lower emissions per throughput than we see
2 elsewhere.

3 BOARD MEMBER SPERLING: What you just said is
4 important if that's -- if California methane emissions are
5 lower than elsewhere, then we shouldn't be using in this
6 case the Greek results, for example.

7 RESEARCH DIVISION CHIEF CROES: Well, that said,
8 we're starting now to focus on measurements in the San
9 Joaquin Valley. And just preliminarily, there does seem
10 to be areas where higher than anticipated leakage. So
11 we're still -- we've identified potential emission
12 sources. But we're still not at the stage where we've
13 quantified those emissions and made the comparison to the
14 inventory for that specific sector.

15 What we managed to do with the statewide network
16 is compare the overall measurements of methane in the air
17 to what we think the inventory is. And there the
18 discrepancy is pretty high, on the order of 30 to 70
19 percent. And so we think there's still a lot of work to
20 do.

21 But oil and gas, it's just one sector we're
22 investigating. There's also potential emissions from
23 landfills and from livestock and from manure application.

24 BOARD MEMBER SPERLING: Let me ask one more
25 question then. If we understand now from this ambient

1 monitoring how accurate the ambient monitoring is,
2 shouldn't we be able to say pretty accurately what the
3 emissions are in the valley or somewhere else?

4 DIVISION CHIEF CROES: Well, the ambient
5 measurements have their own uncertainties as well. There
6 is an interpretation of the data that has to happen,
7 whether we correlate it with other pollutants or whether
8 we do this inverse modeling that Riley was describing.
9 Those depend on our understanding of the meteorology or
10 other inventories that we correlate with methane. So they
11 have their own uncertainties.

12 So we're going through really a process now that
13 we're actually in the middle of trying to reconcile the
14 ambient measurements and their uncertainties with the
15 emission inventories and its uncertainties.

16 BOARD MEMBER SPERLING: I'm starting to sound
17 like the impatient regulator instead of the scientist
18 here. But it does seem like we're getting -- should be
19 getting very close to having some pretty good numbers on
20 methane leakage.

21 RESEARCH DIVISION CHIEF CROES: For the
22 pollutants that have been working on longer, the
23 hydrofluorocarbons, we get good agreement now.

24 I think that's been a real success story and
25 something that took about four or five years to have

1 happen. With methane, we've only been working on these
2 emission inventory improvements and trying to reconcile
3 them with the ambient data just for the last few years. I
4 think we're -- I think Riley would agree with this. We
5 are on the verge of some real break-throughs over the next
6 year in our understanding.

7 And then the N2O, which is also a problem, I
8 think we're really just beginning our efforts and it's
9 going to take several years to figure that out.

10 MR. DUREN: It would add one comment. If you
11 zoom out and look at it from the US level and take the
12 natural gas sector as an example, there's been a lot of
13 studies, a lot in the news and lot of papers published.
14 Different groups have been doing studies for some years
15 now. But in some cases, these are large areas that have
16 to be surveyed and less an absence of a dedicated network
17 that's dense enough to collect the data. People do things
18 like fly airplanes or they do -- primarily fly airplanes
19 that do mobile studies. Those are still sparse -- often
20 sparse data sets. They represent a few days of flights.
21 So they can say something about we see higher levels in
22 this area than we had predicted, but pinning it down to
23 the actual sources and then saying how it changes over
24 time because some of these sectors are changing the
25 landscape literally dramatically over weeks and months.

1 So the answer that you had a few months ago might
2 change. So the one advantage in California is there is a
3 lot of infrastructure relatively speaking, but it's not
4 complete. I would never say we're oversampled on any of
5 the stuff, even in California. We still have a sparse
6 data problem.

7 MONITORING AND LABORATORY DIVISION CHIEF

8 BENJAMIN: This is Michael Benjamin with the Monitoring
9 and Laboratory Division.

10 The other point I'd like to make is the sources
11 and our state of knowledge between the L.A. basin and the
12 San Joaquin Valley are very different. So the L.A. basin,
13 we really have a good handle on sources in general. We've
14 been inventorying those sources for many, many years.
15 Most of those sources are human sources that are
16 permitted. So there is a lot of information that we can
17 tap into to understand those emissions.

18 Whereas, in the valley, a lot of those are rural
19 sort of natural sources. And they're not as well
20 understood. So, for example, in general, we don't
21 understand emissions from dairies as well as we do
22 emissions from vehicles.

23 And so I think that's part of the reason why we
24 have better agreement between the inventory and the
25 ambient in the L.A. basin versus the San Joaquin Valley.

1 I think it's dangerous to extrapolate and assume because
2 we have good correlation in L.A. area we should have that
3 same level of certainty in the San Joaquin Valley.

4 CHAIRPERSON NICHOLS: I want to ask a question
5 that goes back to the black carbon and the dramatic
6 reductions. I'm not aware of the fact that we were always
7 measuring black carbon. I'd like to understand what
8 that's based on and what we know about how this actually
9 happened.

10 RESEARCH DIVISION CHIEF CROES: This is Bart
11 Croes.

12 There was a statewide network established back in
13 the late '60s for coefficient of haze because of concerns
14 about the impact of pollution on visibility. So we had a
15 recent contract completed with Ramanathan and other
16 investigators at Scripps Institute of Oceanography and
17 they interpret that data and were able to relate it back
18 to black carbon. So this network, which is pretty
19 extensive throughout California, we were able to get a
20 fairly good characterization of what happened to black
21 carbon statewide.

22 CHAIRPERSON NICHOLS: So they looked at the haze
23 data and then made some sort of algorithm to translate
24 into black carbon number. Can they then correlate that
25 with the sources of black carbon?

1 RESEARCH DIVISION CHIEF CROES: Yes. So did a
2 pretty extensive analysis looking at other pollutants.
3 And they were able to determine that it seemed like most
4 of the black carbon reduction was correlated with diesel
5 controls. And we were controlling diesel as early as the
6 '70s. So it seems to relate well with what we would have
7 expected from the diesel control program.

8 CHAIRPERSON NICHOLS: Okay. Thank you. Other
9 questions? Comments? All right. Thank you very much.
10 This is interesting work.

11 We have one more item on our agenda. It seems
12 like a short day. But we have a big item tomorrow. So
13 the staff made a decision because they knew we were going
14 to have to spend a number of hours on the items we have
15 for tomorrow. So people can look forward to the
16 opportunity of an early day today, which is great. They
17 can take in the sites of downtown Sacramento.

18 So our final item on the agenda for today is an
19 informational update from the staff on the status of our
20 compliance offset bank, if you will. Not a bank but the
21 work we've been doing to create a supply of offsets that
22 are usable under the California Cap and Trade Program.

23 But before we dive into this item, I need to take
24 a few minutes to acknowledge one of the people who's
25 sitting at the table behind Edie Chang, who has played a

1 critical role in this climate program over the last seven
2 years.

3 Seven years is not a long time in ARB time,
4 although in the rest of the world, it might seem a bit of
5 time. But as it happens, it just about coincides with my
6 time at the Air Resources Board in this most recent
7 incarnation. So Steve Cliff has been a very important
8 part of my time at ARB, as well as his important work on
9 behalf of the whole climate program.

10 Steve has recently been announced as an appointee
11 as the Assistant Director of Sustainability at Caltrans, a
12 job which didn't exist until previously.

13 (Applause)

14 CHAIRPERSON NICHOLS: So he is now a Governor's
15 appointee. And we are extremely excited about the
16 opportunity of working with Steve in his new role. But
17 we're not exactly happy to see him leave, to put it
18 mildly.

19 Steve has had a major impact at ARB, a long
20 string of accomplishments from the very first Scoping Plan
21 to work on the cap and trade regulation. He has been
22 literally the face of ARB to many of our stakeholders who
23 think he is the ARB actually. So sometimes we've had to
24 straighten them out on that. But in fact, he has been an
25 absolute stalwart, creative and fun to work with and just

1 a really terrific contributor to the program. So Steve,
2 we all want to just take this minute to embarrass you if
3 we can and to wish you absolutely the best.

4 During the time that we have been working on this
5 effort, the Board has approved five compliance offset
6 programs to be used under the Cap and Trade Program. So
7 the purpose of this briefing today is just to make sure
8 that we are updated on the status of that program, which
9 as people will recall is one of the more controversial
10 elements of the Cap and Trade Program. And also what's
11 happening in terms of a continued evaluation of looking at
12 sector-based offset crediting programs.

13 We included the offset credits in the Cap and
14 Trade Program as a way of providing cost containment and
15 to leverage reductions in sectors outside of the cap.
16 Continued evaluation of our compliance offset program has
17 shown that California's leadership in climate change -- it
18 shows we have a role as leaders, I should say. First
19 update to the AB 32 climate change Scoping Plan, which was
20 adopted in May of this year details some of the ongoing
21 evaluation that has been underway from the very beginning.
22 If we're going to truly address global climate change and
23 its impacts on California, we also have to consider the
24 role that offsets can play in addressing emissions.

25 Part of this consideration to date has included

1 evaluating the potential for new sources of offsets,
2 including from sector-based crediting programs such as
3 those designed to reduce emissions from the deforestation
4 and degradation of tropical forests. This is an issue
5 that's received a lot of attention because tropical
6 deforestation and degradation is responsible for roughly
7 15 percent of all global greenhouse gas emissions. In
8 other words, it's literally impossible to address the
9 problem without doing something about that issue. And it
10 impacts the entire world, including the snow pack in the
11 sierra and water supply here this California. So while it
12 may not be under our direct control or in our
13 jurisdiction, it is having an impact on us.

14 The staff has developed an informational update
15 on the various types of work and concerns that they feel
16 we should be following here. And so we just wanted to
17 make sure that we had an opportunity when we had a
18 relatively quiet time for the Board members to focus on
19 what's going on in this area.

20 So Mr. Corey, would you please introduce this
21 item?

22 EXECUTIVE OFFICER COREY: Yes, thank you,
23 Chairman. The Cap and Trade Program includes the limited
24 use of approved offset credits as a cost containment
25 feature of the program. We allow covered entities to use

1 offset credits from approved sources for up to eight
2 percent of their compliance obligation. The Board has
3 already approved the use of offset credits generated from
4 ARB adopted compliance offset protocols. And this
5 informational update is intended to provide the Board with
6 the status of ARB's compliance offset program.

7 And given the rigorous criteria set forth in AB
8 32 for offsets included your requirement that offsets can
9 only come from sources which are not covered by the cap,
10 which we'll be discussing. There are challenges to
11 identifying in-state offset protocols, which we'll also
12 discuss as part of the presentation. But ARB is committed
13 to continuing to pursue in-state offsets with the most
14 recent example being a proposed rice cultivation project
15 protocol scheduled to be considered by the Board later
16 this year. And we're continuing to evaluate the potential
17 offset protocols for inclusion in the program.

18 With that, I'd like to have Brieanne Aguila of
19 our Program Data Section present the staff's presentation.
20 Brieanne.

21 (Thereupon an overhead presentation was
22 presented as follows.)

23 PROGRAM DATA SECTION MANAGER AGUILA: Thank you,
24 Mr. Corey.

25 Good morning, Chairman Nichols and members of the

1 Board.

2 Today, I will be presenting an update on the
3 compliance offset program, which is part of the Cap and
4 Trade Program. This presentation will focus on two main
5 elements of the compliance offset program. First, I will
6 provide an overview of the design of the compliance offset
7 program and an update on staff's progress in implementing
8 the program. Second, my colleague, Jason Gray, will
9 explain staff's continued work on offsets, including our
10 participation in international efforts to voluntarily
11 reduce global greenhouse gas emissions.

12 --o0o--

13 PROGRAM DATA SECTION MANAGER AGUILA: For this
14 presentation, I will begin by providing background on AB
15 32 and the goals of the Cap and Trade Program. I will
16 also discuss the roll of offsets in the Cap and Trade
17 Program, as well as the regulatory development process.

18 I will provide an overview of the design of the
19 compliance offset program and rigorous criteria that
20 offsets must meet to be credited in the program.

21 I will also provide an update on the
22 implementation of the compliance offset program, including
23 the offset verification program and offset credit
24 issuance. While staff is not proposing a schedule for
25 development of international offsets, the cap and trade

1 regulation signals that ARB will look to international
2 sector-based offsets as a means to provide offset supply
3 and additional cost containment to the program.

4 Jason will present an overview of the staff's
5 participation in several ongoing international efforts to
6 evaluate international sector-based offsets.

7 The final portion of the presentation will
8 present staff's next steps for implementing the offset
9 program, including protocol development.

10 --o0o--

11 PROGRAM DATA SECTION MANAGER AGUILA: AB 32, the
12 Global Warming Solutions Acts of 2006, put the 2020
13 statewide greenhouse gas emission goal into law. AB 32
14 mandated that ARB develop a Scoping Plan to lay out the
15 path for achieving the reductions needed to meet the
16 state's 2020 mandate. This slide shows the measures and
17 policies contained in the Scoping Plan. The Cap and Trade
18 Program is a key measure being implemented to achieve our
19 statewide goals. The compliance offset program is a key
20 component of the Cap and Trade Program.

21 --o0o--

22 PROGRAM DATA SECTION MANAGER AGUILA: The cap and
23 trade regulation was developed over a three-year period
24 through an extensive consultation process. The Board
25 initially considered the proposed regulation in December

1 2010 and officially adopted the regulation order in
2 October of 2011.

3 In 2012, staff proposed two sets of amendments
4 that were formally adopted by the Board, one set related
5 to implementation and the other related to linkage with
6 the Canadian Province of Quebec.

7 In 2013, staff proposed additional amendments
8 related to program implementation, which were formally
9 adopted by the Board earlier this year. As part of this
10 action, the Board also adopted the mine methane capture
11 projects compliance offset protocol.

12 --o0o--

13 PROGRAM DATA SECTION MANAGER AGUILA: The cap and
14 trade regulation includes elements designed to minimize
15 compliance costs without compromising environmental
16 integrity. Offset credits that are generated in
17 accordance with an ARB-approved protocol and meet strict
18 monitoring and verification requirements may be used to
19 meet up to 8 percent of an entity's compliance obligation
20 for each compliance period. Allowing offsets increases
21 the supply of compliance instruments in the market, which
22 reduces the overall costs of the program, making the
23 offset program an integral cost containment mechanism
24 under the Cap and Trade Program.

25 Including offsets in the program also supports

1 the development of innovative voluntary projects and
2 technologies from sources outside capped sectors.

3 Since offset projects can be developed within the
4 United States, the offset program provides an important
5 incentive mechanism to encourage the spread of clean, low
6 carbon technologies inside and outside California. The
7 reductions achieved by offsets projects provide important
8 environmental, social, and economic benefits by reducing
9 greenhouse gas emissions and supplying green jobs inside
10 and outside of California.

11 --o0o--

12 PROGRAM DATA SECTION MANAGER AGUILA: The
13 compliance offset program showcases California's continued
14 leadership in developing rigorous and innovative
15 environmental programs. The California compliance offset
16 program is considered the leading standard for offset
17 programs and has withstood legal challenge to the program
18 design, specifically it's additionality provisions.

19 It is important to note that while the court
20 ruled in ARB's favor, the case is currently on appeal.
21 The compliance offset program includes criteria and design
22 features intended to maintain the environmental integrity
23 of the Cap and Trade Program. The AB 32 criteria for
24 emission reductions, as described on the next slide,
25 ensure that offsets issued under the program are real and

1 In the Cap and Trade Program, all compliance
2 instruments are completely fungible, including any
3 allowances or offset credits issued by linked
4 jurisdictions. In January of this year, the program's
5 linkage to Quebec became effective, which means that we
6 also accept offsets issued by the Province of Quebec.

7 The regulation also includes a placeholder to
8 allow sector-based offsets credits to be used in the
9 program. These offset credits would be issued by another
10 jurisdiction approved by ARB. Contrary to offsets issued
11 directly by ARB, the reductions would not be based on
12 emissions from individual projects, but rather reductions
13 that are achieved by a sector as a whole at the
14 jurisdiction level. Sector-based offsets will be
15 discussed more in the second half of this presentation.

16 --o0o--

17 PROGRAM DATA SECTION MANAGER AGUILA: To ensure
18 reductions credited as offsets are real and additional,
19 offset credits cannot be issued for any reductions
20 achieved in capped sectors. This could cause double
21 counting of those reductions within the system.

22 In addition, only ARB can issue compliance offset
23 credits under the approved offset protocols. All
24 California issued offset credits in the program are
25 created and tracked by ARB in its market tracking system

1 called the compliance instrument tracking system service,
2 or CITSS. ARB is able to track all trades and retirement
3 in CITSS. Full ARB oversight of the tracking system and
4 trading behavior allows ARB to monitor the market
5 effectively and ensure that there is no market
6 manipulation.

7 --o0o--

8 PROGRAM DATA SECTION MANAGER AGUILA: The cap and
9 trade regulation currently includes five compliance offset
10 protocols that project developers may use to generate
11 credits in the program. These include the US Forest
12 Projects Protocol, the livestock manure digester projects
13 protocol, the urban forest projects protocol, the US ozone
14 depleting substances projects protocol. These four
15 protocols were initially developed by the Climate Action
16 Reserve, or CAR, and the protocols included in the
17 regulations are virtually identical to those developed by
18 CAR for use in the voluntary offset market.

19 In April of this year, the Board also approved
20 the adoption of the mine methane capture projects
21 protocol. This protocol was developed by ARB staff in
22 consultation with stakeholders. Staff is working to
23 develop a protocol for rice cultivation projects.

24 Staff has already conducted extensive outreach
25 and stakeholder process to develop this protocol. Staff

1 is also working to finalize and review the data needed to
2 allow offset projects in Alaska to be developed under the
3 US forest project protocol.

4 We continue to coordinate with our Western
5 Climate Initiative partners on all of our protocol
6 development efforts. The cap and trade regulations
7 specifies a Board approval process for offset protocols.
8 All new protocols must be approved by the Board after a
9 stakeholder process.

10 --o0o--

11 PROGRAM DATA SECTION MANAGER AGUILA: This slide
12 shows a flow chart which explains how staff
13 operationalizes the offset program to credit reductions
14 achieved by offset projects with offset credits. Once an
15 offset protocol has been approved by the Board and become
16 effective in regulation, a project developer can submit
17 project information showing its intent to seek offset
18 credits. This information is known as listing
19 information. Once a developer submits all of the
20 information required by the regulation, the offset project
21 can be listed.

22 After an offset project is listed, a project
23 developer must submit annual monitoring and reporting
24 information. This information contains information
25 related to project activities over the course of the year

1 and also includes the amount of emission reductions that a
2 project developer claims to have been achieved by the
3 project during the year.

4 This report is submitted by the project operator
5 to an ARB accredited third party verification body. The
6 verification bodies have been trained by ARB to verify the
7 report and determine whether the offset project developers
8 emission reduction assertion is accurate.

9 Once the verification body has completed its
10 review, the findings are submitted to ARB. If the
11 findings are positive, the project developer can apply for
12 issuance of offset credits. Once ARB receives an
13 application for issuance of offset credits, ARB staff does
14 an in-depth review of all project documentation and the
15 verification findings. Based on this review, staff will
16 determine whether offset credits should be issued. If
17 offset credits are issued, they will be created in ARB's
18 market tracking system and placed in the accounts of the
19 appropriate parties.

20 --o0o--

21 PROGRAM DATA SECTION MANAGER AGUILA: As I just
22 discussed, the compliance offset program includes a
23 rigorous third party offset verification program in which
24 all verifiers are accredited directly by ARB. The
25 regulation includes education and experience requirements

1 that verifiers must meet to become accredited. ARB
2 administers extensive training to all verifiers accredited
3 in its program, and all verifiers must pass exit exams.

4 Verifiers can be accredited as general verifiers,
5 lead verifiers, and project-specific verifiers, which
6 means they have education and experience related to a
7 specific protocol.

8 To date, ARB has accredited 18 verification
9 bodies and almost 100 individual offset verifiers. There
10 are almost 80 verifiers accredited as lead verifiers and
11 over 30 verifiers accredited under each protocol, except
12 the mine methane capture project protocol. In June, staff
13 completed its eighth week-long training session for
14 verifiers since mid 2012 at which it offered training
15 under the mine methane capture protocol for the first
16 time. Staff expects to accredits verifiers under that
17 protocol very soon.

18 The regulation includes strict conflict of
19 interest requirements between ARB accredited verifiers and
20 project developers. ARB accredited verifiers are
21 responsible for assessing any potential conflicts and must
22 disclose them to ARB.

23 The regulation oversight of the offset
24 verification program and conflict of interest is extremely
25 important to the program's integrity. Verification bodies

1 are required to notify ARB prior to beginning any
2 verification services so ARB staff can plan its audit and
3 oversight activities. Staff has audited many of the
4 onsite verification activities to date and conducts a desk
5 review of every verification that is performed under the
6 program.

7 --o0o--

8 PROGRAM DATA SECTION MANAGER AGUILA: A supply of
9 compliance offsets is important to achieving the program's
10 overall cost containment goals. To ensure that a
11 sufficient supply of high quality offsets is available,
12 ARB has approved offset project registries to help ARB
13 administer the compliance offset program.

14 Leveraging offset project registry expertise and
15 infrastructure has allowed us to access the existing
16 capabilities of the third party registries so that the
17 offsets program can be deployed quickly.

18 In addition to ARB's audit and oversight
19 activities of verification bodies, offset project
20 registries also conduct additional audits of verification
21 activities. While offset project registries are
22 instrumental in administering the program, these programs
23 cannot issue compliance offset credits or adopt compliance
24 offset protocols and are subject the ARB audit and
25 oversight authority.

1 --o0o--

2 PROGRAM DATA SECTION MANAGER AGUILA: This slide
3 provides a status update on the implementation of the
4 compliance offset program. So far, ARB has listed over 90
5 early action projects for transitioning voluntary credits
6 into compliance offsets and over 75 compliance offset
7 projects that were developed directly under ARB compliance
8 offset protocols.

9 ARB has issued offset credits to a total of 59
10 early action and compliance offset projects. ARB has also
11 issued over eleven million compliance offsets to date.
12 Information related to the issuance of compliance offsets
13 can be found on ARB's website.

14 This concludes the portion of the presentation
15 related to the domestic offset program. I will now turn
16 it over to Jason Gray, who will present an update on
17 sector-based crediting activities.

18 --o0o--

19 MARKET MONITORING SECTION MANAGER GRAY: Thank
20 you, Brieanne.

21 In this portion of the presentation, I will
22 present an update on the activities staff has been engaged
23 in related to evaluating international sector-based offset
24 crediting programs. I will first describe what
25 sector-based crediting is, how it fits into the current

1 structure of the cap and trade regulations compliance
2 offset program, the types of activities staff has been
3 observing, and the importance of this type of offset
4 credit.

5 --o0o--

6 MARKET MONITORING SECTION MANAGER GRAY: As
7 Brieanne mentioned earlier offsets under the cap and trade
8 regulation may come from three types of source:

9 ARB-approved compliance offset protocols where ARB issues
10 the offsets directly; offsets issued by a linked
11 jurisdiction, such as Quebec; and offsets issued by a
12 jurisdiction with an approved sector-based crediting
13 program.

14 A sector-based crediting offset program as
15 defined by the cap and trade regulation is a greenhouse
16 gas emissions reduction crediting mechanism established by
17 a country, region, or subnational jurisdiction in a
18 developing country and covering a particular economic
19 sector within that jurisdiction. This type of
20 sector-based program differs from the offset protocols
21 adopted by ARB because reductions are measured across an
22 entire economic sector within the issuing jurisdiction
23 rather than on a project-by-project basis.

24 As I will explain later, an example of an
25 economic sector that could be part of a sector-based

1 crediting program would be tropical forestry. The
2 regulation makes clear that before considering any
3 sector-based offset crediting program for compliance, the
4 program would have to meet the rigorous AB 32 criteria
5 mentioned earlier. The credits would need to be real,
6 additional, permanent, verifiable, quantifiable and
7 enforceable.

8 Similar to ARB issued credits under our
9 compliance offset protocols and to ensure that any
10 sector-based offset credits meet the AB 32 criteria, the
11 involvement of the jurisdiction as the credit issuing body
12 is crucial.

13 Before I go any further, I would like to stress
14 that there are no approved sector-based offset crediting
15 programs at this time.

16 --o0o--

17 MARKET MONITORING SECTION MANAGER GRAY: You may
18 wonder why we would pursue a sector-based crediting
19 program approach for international offsets when we use a
20 project-based approach for ARB's approved compliance
21 offset protocols.

22 One reason is that compliance offset protocols
23 set performance standards for projects that they must meet
24 within the United States. This means that the projects
25 occur in jurisdictions that California has assurance the

1 protocol requirements can be enforced. The projects
2 subject themselves to California's jurisdiction and ARB
3 can evaluate publicly available state and federal data for
4 the project's sector.

5 For instance, ARB's US forest protocol relies on
6 rigorous federal data that spans the forest sector within
7 states and across the country. When we start thinking
8 about international credits, achieving the same levels of
9 assurance requires a different approach since the credits
10 would come from another country. In this context there
11 are important benefits from a jurisdiction-wide,
12 sector-based crediting approach. For instance, accounting
13 for reduction credits in an entire sector within a
14 jurisdiction ensures the jurisdiction is conducting low
15 emission planning across that entire jurisdiction.

16 Setting a jurisdiction-wide performance standard
17 which must be met before crediting can occur ensures that
18 reductions are beyond what is otherwise required, ensuring
19 the additionality of credits.

20 A broad jurisdiction-wide approach may help
21 leverage the effects of reduced emissions to other
22 economic sectors. Since sector-based crediting programs
23 necessitate jurisdiction involvement in the design,
24 implementation, and issuance of credits, there is more
25 certainty that the jurisdiction's enforcement authority

1 functions properly.

2 Brocading the accounting of reductions beyond the
3 project-level to cover an entire jurisdiction helps
4 protect against the emissions leakage by ensuring that a
5 project developer cannot simply protect one project while
6 removing its emission-causing activities to another
7 project, including sector-based offset credits from an
8 approved program would also expand the existing sources of
9 offsets to support cost containment in the California Cap
10 and Trade Program.

11 Under the current design of the cap and trade
12 regulation, sector-based offset credits would still fit
13 within the existing eight percent quantitative usage
14 limit. Sector-based offset credits could only be used for
15 up to two percent of the entity's total compliance
16 obligation in the first two compliance periods and up to
17 four percent in the third.

18 --o0o--

19 MARKET MONITORING SECTION MANAGER GRAY: The
20 first sector identified in the regulation to evaluate for
21 sector-based crediting is the tropical forest sector.
22 Specifically, the regulation calls out programs which
23 reuse emissions from deforestation and forest degradation
24 of tropical forests, which is often summarized with the
25 acronym REDD. Tropical forests were highlighted as a

1 critical sector for evaluation because deforestation and
2 forest degradation of tropical forests accounts for
3 between 11 and 14 percent of the global greenhouse gas
4 emissions. This is roughly equivalent to the entire
5 emissions from the global transportation sector.

6 Tropical forests are also the most studied sector
7 internationally because of their relationship to climate
8 change and due to the importance placed on them by United
9 Nation's framework convention on climate change.

10 In addition, addressing emissions from
11 deforestation and forest degradation results in multiple
12 co-benefits globally. These include improved habitat for
13 protecting biodiversity, ensuring forest dependent
14 community livelihoods, water management, soil
15 conservation, and protecting against decreased
16 precipitation from forest loss.

17 Recent research has actually pointed to the
18 important role tropical forests in the Amazon play in
19 California's snow pack and the atmospheric rivers which
20 impact California precipitation, which is especially
21 critical now given our current drought situation.

22 Finally, addressing emissions from the
23 deforestation of tropical forests can leverage additional
24 transformations in the rural development model for
25 tropical jurisdictions. For example, policy makers and

1 ranchers in the state of Acre, Brazil are working to
2 decrease the amount of forests cleared for cattle ranching
3 by simultaneously working to increase cattle yield on
4 already degraded land. This integrated planning approach
5 to rural development considers forest conservation, local
6 livelihoods, climate impacts, and economics, much in the
7 same way California is doing through our updated Scoping
8 Plan.

9 I'd like to play a short video for you from
10 NASA's Jet Propulsion Laboratory, which depicts the role
11 tropical forests play in the atmospheric rivers which
12 impact California's rain fall.

13 (Whereupon a video presentation was made.)

14 --o0o--

15 MARKET MONITORING SECTION MANAGER GRAY: This
16 video clip shows how water enters the atmosphere in the
17 tropical forest region, is transported northwest over the
18 Pacific, and then returns to California as rain and snow.

19 --o0o--

20 MARKET MONITORING SECTION MANAGER GRAY: With
21 this slide, I'll cover some of the history of ARB's
22 engagement on tropical forests, evaluating the role
23 California can play to help reduce emissions from the
24 deforestation and degradation of tropical forests has
25 actually been part of California's climate strategy since

1 the original 2008 Scoping Plan, which recognized the
2 important role tropical forests play in climate.

3 Based in part on this recognition, California
4 came together with the group of subnational governments
5 from Brazil to Indonesia to create an information sharing
6 group called the Governor's Climate and Forest Task Force,
7 which I'll describe further in a moment.

8 ARB also included a placeholder provision in the
9 cap and trade regulation to signal our intent to continue
10 evaluating whether and how sector-based crediting programs
11 related to tropical forests could fit within the
12 regulatory structure for future compliance credits.

13 In 2010, California partnered with two other GCF
14 members, the Governor's Climate Forest Task Force, and
15 Acre, Brazil, and Chiapas, Mexico, to encourage the
16 development of an expert technical working group to
17 develop recommendations on how such credits could be
18 included in our program.

19 The 2014 update to the scoping plan highlights
20 these efforts and keeps us on course to continue our
21 engagement in the GCF and on evaluating potential for
22 sector-based crediting programs designed to reduce
23 deforestation and forest degradation to come into
24 California's compliance program.

25 I would also note that as described in the

1 updated Scoping Plan, continued evaluation of programs
2 designed to reduce deforestation and degradation of
3 tropical forests and other sector-based offset programs
4 further demonstrates California's ongoing climate
5 leadership and could be result in partnering on other
6 mutually beneficial climate and low emissions development
7 initiatives, including those in Mexico.

8 --o0o--

9 MARKET MONITORING SECTION MANAGER GRAY: As I
10 mentioned previously, California helped to create the
11 Governor's Climate and Forest Task Force in 2008. As a
12 forum for information and the best practice exchanges, the
13 GCF is currently comprised of 22 subnational jurisdictions
14 from countries comprised of Brazil, Indonesia, Mexico,
15 Nigeria, Peru, Spain, and the United States.

16 The tropical forest jurisdiction within the GCF
17 cover more than 20 percent of the world's tropical
18 forests. Each jurisdiction within the GCF is enacting
19 legal and policy structures to improve their forest
20 management. Some jurisdictions are including or plan to
21 include, structures that allow the jurisdiction to issue
22 robust sector-based offset credits.

23 Much of the discussion within the GCF revolves
24 around evaluating standards for reporting, verification,
25 community involvement, inventory development, and

1 enforcement to ensure rigorous credits that meet the same
2 criteria required by AB 32.

3 The GCF meets annually to share experiences
4 between members who are developing these jurisdiction
5 level offset programs. ARB continues to monitor the
6 activities of the GCF and to engage in discussions with
7 other GCF members to understand the status of their
8 programs and answer questions about how our program
9 functions. This engagement gives ARB an excellent
10 opportunity to demonstrate California's climate leadership
11 while also learning from other emerging programs.

12 --o0o--

13 MARKET MONITORING SECTION MANAGER GRAY: The REDD
14 Offset Working Group, mentioned previously, including
15 technical experts from multiple backgrounds and
16 jurisdictions who developed a set of recommendations that
17 were submitted to ARB and the governments of Chiapas and
18 Acre in 2013. These recommendations, which are referenced
19 in the Scoping Plan update, looked at policy
20 considerations and technical considerations aimed at
21 assisting sector-based crediting programs to meet
22 California's stringent requirements so they could
23 potentially be considered for inclusion in Cap and Trade
24 Program in the future.

25 --o0o--

1 MARKET MONITORING SECTION MANAGER GRAY: Staff is
2 not proposing any specific action for the Board today on
3 sector-based crediting, but we did want to explain our
4 ongoing work. This includes a continued evaluation of the
5 recommendations from the REDD offset working group,
6 ongoing engagement with the Governor's Climate Forest Task
7 Force as called out in the Scoping Plan, and coordination
8 with the US Department of State on common issues between
9 California's climate programs and the negotiations
10 underway at the United Nation's Framework Convention on
11 climate change.

12 While staff is not currently proposing a time
13 line for specific action, next steps would include further
14 evaluation, public workshops, a linkage assessment, and
15 findings under Senate Bill 1018 similar to what was done
16 for a linkage with Quebec and future rulemaking should the
17 Board ultimately decide to consider the inclusion of a
18 sector-based crediting program within the Cap and Trade
19 Program.

20 --o0o--

21 MARKET MONITORING SECTION MANAGER GRAY: I'll now
22 move away from our discussion on sector-based crediting
23 programs to provide a brief update on our linked partner
24 jurisdiction, Quebec.

25 As the Board will recall, California and Quebec

1 officially linked their Cap and Trade Programs beginning
2 on January 1, 2014. We are scheduled to hold a joint
3 auction of emissions allowances in November 2014 with a
4 joint practice auction taking place on August 7th, 2014.

5 The Board directed staff to provide you with
6 updates to changes in linked programs at least six months
7 prior to changes taking effect.

8 To that end, Quebec will be proposing regulatory
9 amendments to harmonize their requirements with
10 California's recently adopted amendments. This
11 harmonization is expected to occur later this year.

12 --o0o--

13 MARKET MONITORING SECTION MANAGER GRAY: Finally,
14 I will review a few next steps for California's overall
15 compliance offset program.

16 As Bri mentioned, staff will be proposing new
17 protocols for Board consideration in late 2014. These
18 include a rice cultivation protocol and an updated US
19 forest protocol to include Alaska. As outlined in the
20 Scoping Plan, we continue to work to identify additional
21 compliance offset protocols and are committed to focusing
22 this work on in-state offsets, while recognizing the
23 challenges of identifying possible in-state sources of
24 offsets.

25 --o0o--

1 MARKET MONITORING SECTION MANAGER GRAY: For
2 members of the public who are interested in additional
3 information, this slide provides links to ARB's Cap and
4 Trade Program and the compliance offset program web pages.

5 Thank you for your attention to this
6 informational update. We would be happy to answer any
7 questions you may have.

8 CHAIRPERSON NICHOLS: While people are
9 considering their questions, we can hear from these who
10 have taken the time to come and address the Board on this
11 issue. So we have a list of seven speakers up on the
12 wall. And we'll just take them in order starting with
13 Christina McCain.

14 MS. McCAIN: Good afternoon. I'm Dr. Christina
15 McCain with the Environmental Defense Fund.

16 Thank you for today's important update on offsets
17 in California. We see offsets as a critical component of
18 the Cap and Trade Program because they provide economic
19 and environmental benefits, both to California as a whole
20 and particularly when it comes to land-based offsets to
21 benefits to the lands owners, the farmers, and the
22 foresters who participate in the offsets market.

23 Offsets also have tremendous potential to inspire
24 innovation in sectors outside of the cap where direct
25 regulation is challenging. There is still important work

1 ahead on offsets though. And we look forward to seeing
2 the release of the final version of the rice protocol and
3 a statement of ARB's dedication to the development of
4 future agricultural offset protocols for California.

5 We appreciate the ARB's considering international
6 sector-based forest offsets such as reducing emissions of
7 deforestation and degradation, or REDD, among key
8 potential options for continuing the development of a
9 robust offset program and increasing the global impact of
10 California's program.

11 As staff has described here today, there are
12 ample reasons to consider a pathway for REDD in
13 California, and I want to emphasize just a few. Recent
14 analysis suggests that addressing emissions from tropical
15 deforestation, which as the Chairwomen pointed out are a
16 really large proportion of global emissions, and in fact,
17 exceed the emissions from the entire world's
18 transportation sector will be critical the keeping global
19 warming below catastrophic levels. Leadership on REDD in
20 California would catalyze international action to reduce
21 greenhouse gas emissions, proving that California's
22 actions can have very high global returns.

23 Here in California, the additional offsets apply
24 from REDD can contribute to keeping the cost of achieving
25 greenhouse gas reductions low for 2020 and as we plan for

1 beyond 2020.

2 Reminded by the Governor's upcoming mission to
3 Mexico, California is the forefront of international
4 leadership on preventing the most devastating effects of
5 climate change. California must continue to lead by
6 partnering with other states, provinces, and countries
7 that are taking action on climate change. Building a
8 pathway for high quality REDD programs to participate in
9 California's market will provide a multiple,
10 environmental, as well as social benefits for California
11 citizens and the world.

12 We look forward to continuing to work with this
13 Board and the staff on these important issues going
14 forward. Thank you very much.

15 CHAIRPERSON NICHOLS: Thank you.

16 Mr. Harris.

17 MR. HARRIS: Hello, everyone.

18 My name is Frank Harris. I'm here representing
19 Southern California Edison.

20 I was going to talk about the general benefit of
21 offsets. I believe that the representative from EDF and
22 the staff presentation did that. Suffice it to say Edison
23 has consistently supported a broad based Cap and Trade
24 Program. And in terms of a well designed program, we look
25 at offsets as being a critical mechanism for that.

1 A fair amount has been stated about the economic
2 benefits to cost efficiencies, cost control benefits of
3 offsets. As EDF mentioned, in addition to that, Edison
4 sees a key benefit in terms of promoting additional
5 emission reductions outside of the boundary of the cap and
6 trade, once again where regulation can be somewhat
7 difficult. And we see that as a critical benefit to the
8 offset program. Unfortunately, the current offset market
9 is really stagnant. And it's critical that ARB support
10 its current protocols and really push to develop further
11 protocols.

12 I believe the state, as was represented by EDF,
13 also the state needs to look to how it can expand the role
14 of agriculture in the offset market. I think this is
15 critical. In terms of the rice protocol, we've got some
16 very small individual reduction opportunities. It's
17 not -- it's largely not an economic option for some of the
18 small farmers and aggregation option is really critical
19 here. So I want to push and compel staff to look at this.

20 In terms of REDD and sector-based offsets, I
21 think we've all looked at all the modeling. If we really
22 are trying to achieve controls on global emissions in
23 long-term climate change, we can't do this without REDD.
24 We can't do this without international offset
25 opportunities. So I'm happy that the Board and staff is

1 looking into this.

2 Now, in addition to this, we're getting towards
3 the end of the first compliance period. It's very likely
4 that the full quantity of offsets authorized won't be
5 available. I, once again, would ask the staff and the
6 Board to look for opportunities where we might be able to
7 carry over that authorization or bank that authorization
8 after the end of the compliance period. I wouldn't want
9 the ability to bring those emission reductions to the
10 market for regulatory compliance. I wouldn't want that
11 opportunity to go away simply because the compliance
12 period ends.

13 Now, Madam Chair, if I might ask for a slight
14 indulgence.

15 CHAIRPERSON NICHOLS: Okay.

16 MR. HARRIS: Southern California Edison would
17 like to go on record thanking Steve Cliff for his years of
18 service. Okay. I've worked with ARB since AB 32 was
19 passed. I worked on climate change with the PUC before
20 that. Steve's hire has proven critical to the ARB to
21 bring in and expand its strength in this area. He's been
22 a solid colleague. I call him a colleague. Very solid
23 colleague in the research and regulatory development
24 process. I say this as a representative of a regulated
25 utility, okay. And it's not as if Steve has given away

1 the store here.

2 CHAIRPERSON NICHOLS: I was about to ask.

3 MR. HARRIS: I would have liked that, believe me.
4 He hasn't. But he's been a very reasoned person to deal
5 with. When we bring good ideas -- and as Steve will tell
6 you, I only bring good ideas -- I feel very clear and
7 confident that he will listen carefully and give it his
8 full consideration. In other words, I really hold Richard
9 personally responsible for letting him go.

10 Congratulations on your new job, Steve. It's
11 well deserved. Edison will miss you. Thank you very
12 much.

13 CHAIRPERSON NICHOLS: I'm sure he's grateful for
14 those comments. We don't view this as losing Steve. We
15 view this as gaining an ally at Caltrans.

16 Welcome.

17 MS. BURNS: My name is Karin Burns, and I'm
18 Executive Director of Code REDD.

19 CHAIRPERSON NICHOLS: We need you closer to the
20 mike.

21 MS. BURNS: First, thank you for providing the
22 important update regarding the compliance offset program.

23 First, I'd like to state my support for the
24 compliance offset program within California's Cap and
25 Trade Program.

1 Second, I'd like to further state my support for
2 efforts currently underway to consider sector-based
3 offsets and in particular REDD. Hence, the name of our
4 company. Substantial supports already exists for the
5 inclusion of REDD in California's compliance market.
6 Within industry, our leading industry here in California.
7 Within our most credible longstanding NGOs here and across
8 the country and globally. And when explaining to them the
9 general public.

10 California has a unique and game-changing legacy
11 opportunity to catalyze the adoption of REDD in emerging
12 global compliance markets leading by example. Those of us
13 working in the REDD industry know firsthand the benefits
14 that REDD provides to biodiversity preservation, community
15 empowerment, and greenhouse gas reduction and forest
16 protection.

17 Deforestation, as you know, is our second largest
18 source of global emissions. And any serious attempt to
19 reduce our emissions must consider and account for
20 tropical forestry. We can do this through REDD. REDD is
21 our most cost-effective opportunity for industry. It's a
22 prudent use of our resources and implementable at scale
23 today. So for these reasons and many others, we strongly
24 encourage and support the adoption of REDD in California's
25 compliance work. Thank you.

1 CHAIRPERSON NICHOLS: Thank you.

2 Mr. Tutt.

3 MR. TUTT: Good afternoon. Tim Tutt from
4 Sacramento Municipal Utility District.

5 With only three people preceding me, it's hard to
6 believe I could feel like I'm going to be duplicating
7 comments already. But I think that I will.

8 SMUD has always supported offsets as part of the
9 Cap and Trade Program. We believe they're a critical cost
10 containment measure. We particularly supported the use of
11 sector-based offsets and particularly REDD because we do
12 feel it's important to have the message of reducing
13 greenhouse gases translated out to these critical sectors.
14 And there's a need for a funding mechanism to do this work
15 in developing countries. And you guys can help provide
16 that. And you have put a placeholder for that into your
17 regulation since 2011 when they were initially adopted.
18 Really appreciate the work there and the ongoing work on
19 this issue.

20 I would point out like Frank did that it's coming
21 up to the end of the first compliance period. So at the
22 end of this year, there's no guarantee that the full
23 offset limit will have been taken advantage of by all the
24 parties to which it's applied. In particular, the 25
25 percent of that offset limit that can be under the

1 regulations supplied by REDD offsets, there's no way to do
2 that because there's no REDD offset protocols that are in
3 place.

4 Perhaps the only way to preserve that 25 percent
5 is to do -- make some change like allowing some kind of
6 banking of the REDD or the offset structure so that
7 parties can continue to access that and provide that
8 benefit to the world after the end of this year. So I
9 would encourage your consideration of that.

10 And also consider moving forward with as much
11 speed as possible staff has available on including REDD
12 into the process. So we don't get to the end of the
13 second compliance period and still face the idea of are we
14 going to lose the ability to procure these REDD offsets.

15 And then I would also say ditto to everything
16 that Frank said about Steve Cliff. He's been wonderful to
17 work with. I mentioned in the hallway outside I'm going
18 to switch my job position to transportation related work
19 so that I can continue working with Steve at Caltrans.
20 This might be the last time you see me here. Thank you.

21 CHAIRPERSON NICHOLS: Thank you very much. He'll
22 take his fan club with him.

23 Ms. Passero.

24 MS. PASSERO: Hi. Michelle Passero with the
25 Nature Conservancy. Thank you for the opportunity to

1 comment.

2 I do want to express our continued support for
3 the use of offsets among whole portfolio policies and
4 measures that ARB and the state is implementing to reduce
5 emissions. It's an important way to leverage greenhouse
6 gas reductions in sectors that are uncapped, like forests.
7 As mentioned by a number of folks earlier, it really is a
8 significant source of greenhouse gas emissions globally
9 and also locally. Our forests here are also a source of
10 emissions.

11 And as many of you may know, when our forests are
12 conserved and as they grow, they absorb carbon dioxide out
13 of the atmosphere and store it in their branches, leaves,
14 and trunks. When they're disturbed through fire or
15 conversion to other uses, they can become a source. They
16 release the carbon into the atmosphere.

17 This is a global challenge. But there are also
18 opportunities. We've certainly shown a lot of leadership
19 here elemental locally on this issue by including forests
20 in our Scoping Plan to help conserve our forests.

21 Also action happening in other jurisdictions.
22 And you have the whole presentation on REDD efforts in
23 Brazil and in Mexico are ongoing to develop robust
24 programs to address this issue as forest loss and
25 degradation is a tremendous source of emissions in those

1 countries.

2 So we appreciate the leadership that ARB has
3 shown to date on this issue. And we do strongly encourage
4 partnerships with these other jurisdiction as they are
5 other opportunities to leverage action and additional
6 greenhouse gas reductions in these other areas so we can
7 reduce emissions here and globally and also protect all
8 the other great public benefits that come along with
9 protecting our forests. Thank you.

10 CHAIRPERSON NICHOLS: Thank you.

11 Matthew Plummer.

12 MR. PLUMMER: Good to see you again. Matthew
13 Plummer on behalf of Pacific Gas and Electric Company.

14 I'm noticing some common themes with the other
15 speakers, especially EDF and Edison. So I'll shorten my
16 remarks down.

17 PG&E appreciates and supports the Board staff's
18 continued work on offset protocols which as mentioned are
19 critical to both cost containment and emission reductions.
20 As staff's presentation showed, an unprecedented amount of
21 work has taken place in a relatively short time. But
22 without additional protocols or sector-based programs, a
23 number of market observers have noticed the demands for
24 offset credits may be greater than applying complying
25 compliance periods two and three. Given this need, PG&E

1 encourages ARB to strengthen its efforts and develop
2 additional protocols.

3 Finally, PG&E reiterates its support for
4 development of a jurisdictional REDD program. Thank you.

5 CHAIRPERSON NICHOLS: Thank you.

6 Mik Skvaria.

7 MR. SKVARIA: Hi. My name is Mik Skvaria. Here
8 on behalf of the California Council for Environmental and
9 Economic Balance.

10 We've got several speakers and we are all
11 reiterating the same points. CCEEB does believe that
12 offsets, both REDD and sector-based in the currently
13 adopted ones are critical to the Cap and Trade Program and
14 greenhouse gas program here in California.

15 We believe that it's an economically efficient
16 way of providing lower cost options for capped sources, in
17 addition to providing geographically broad coverage which
18 is essential for global progress on the issue of climate
19 change.

20 We think that adopting more offsets and offset
21 protocols would build capacity and expertise inside and
22 outside of California across the state and broader set of
23 activities. And facilitate earlier emission reductions by
24 reducing the risks associated with the initial compliance
25 periods.

1 And I don't need to go on further with what
2 everyone else has said. We just urge staff to continue
3 their hard work on this issue and hope the Board will
4 consider it when it's time to adopt these protocols.
5 Thank you.

6 CHAIRPERSON NICHOLS: Thank you.

7 You know, it may seem as though there's sort of a
8 consensus around these issues. But obviously there still
9 remain major critics of the whole idea of offsets,
10 continues to be a source of articles, and underlies a lot
11 of concern about the whole Cap and Trade Program.

12 I suppose the good news is we don't have very
13 many offsets. The bad news is we don't have very many
14 offsets, so depending on where you're looking at it. But
15 we do have a very credible number of them as it turns out,
16 and real projects that have made it through the very
17 rigorous screening, which indicates it is possible.

18 The next real horizon is in the sector-based
19 program. And this isn't just something that ARB has
20 invented. Actually, we're legally required to have an
21 agreement with any country that we might accept offsets
22 from that's outside of the United States anyway as a
23 result of legislation passed by the California Legislature
24 and signed by the Governor. So we have a lot of work to
25 do. And we have not been able to make this a huge area

1 for investment of staff time because we have other things
2 to do.

3 But despite that, we've got very high quality
4 staff working on these issues and doing a lot of thought
5 and giving it great deal of consideration.

6 I have had an opportunity to brief the Governor's
7 office about the status of work on REDD. And they are
8 interested and wanting to see us continue to pursue it,
9 although raising the same concerns anyone else would about
10 this can potentially be seen as somehow underlining the
11 local benefits of the program. So it just continues to be
12 a bit of a dichotomy I think in our thinking about climate
13 programs. We are here in California wanting to do things
14 that lead the world and demonstrate what can be done.
15 We're also here in California wanting to do things that
16 benefit the state of California. We have to really try to
17 do both of those things at the same time, achieve both of
18 those sets of objectives.

19 But I think it's clear from the presentation that
20 having at least an adequate supply of offsets, even if
21 it's not as exciting a market as some might have hoped it
22 would be a few years ago really is a critical element of
23 making our Cap and Trade Program a success. So we
24 continue to move along in a very kind of measured careful
25 way.

1 And I had the opportunity recently to go to a
2 meeting of the Board of the Department of Food and
3 Agriculture, State Board of Food and Ag, and listen to the
4 presentation on the rice protocol and how it's been going.
5 And it was a really inspiring and interesting presentation
6 on some very good work. A lot of science. A lot of
7 community work. A lot of work by growers. And you know,
8 this protocol, when it gets adopted, is going to be a real
9 milestone I think in the history of land-based or
10 environmentally-based offset protocols. And yet at the
11 same time, we're hearing it probably won't be very useful
12 because it's so rigorous and so hard to do that many
13 people won't be able to take advantage of it, unless some
14 new structure comes along.

15 But I think that's the continued strain that
16 there's going to be on this program. And we're just going
17 to have to keep it moving forward, in spite of those kinds
18 of questions because clearly we making intellectual
19 progress at least, if not necessarily yet generating a lot
20 of additional offsets. I see nods coming from my
21 colleague over here, our agricultural representatives. I
22 don't know if anybody has any comments, questions they
23 would like to raise at this point about offsets or
24 other -- Sandy.

25 BOARD MEMBER BERG: My only comment is I do have

1 to close with thanking Steve since he's been my personal
2 tutor through cap and trade and following. So needless to
3 say, he's not off the hook. He has to send me his further
4 information to keep that tutoring arrangement.

5 Thank you very much for all of your efforts,
6 Steve, the times we've sat in your office and you were at
7 the white board drawing boxes. This is the utility. It
8 truly helped me tremendously, and you've been a great
9 colleague. We wish you well. And we do look forward to
10 working with you in your new position. Congratulations

11 CHAIRPERSON NICHOLS: Absolutely.

12 John.

13 BOARD MEMBER BALMES: Again, I also want to say a
14 few words of appreciation for Steve because while I
15 haven't seen a white board demonstration, I have had many
16 phone calls where he's been very useful and educated me to
17 the intricacies of things like that mine methane gas
18 protocol.

19 I wanted to ask a last question though. We heard
20 a lot about REDD today, and I just wanted you to give me a
21 hint about how close do you think we are to actually
22 having a REDD protocol. I know it's a loaded question.

23 BOARD MEMBER SPERLING: But he's leaving.

24 BOARD MEMBER BALMES: Exactly. Are we talking a
25 long time?

1 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF

2 CLIFF: I'm probably not the best to answer this. I think
3 I should leave this to others.

4 I will say I think it's an important thing for us
5 to follow. Jason laid out several pieces of it, not only
6 regarding the amount of emissions that are associated with
7 deforestation, but its potential impact on climate
8 directly in California due to this relationship with the
9 atmospheric cycling of our water cycles.

10 So maybe I'll leave it to others to kind of talk
11 a little bit about the timing and how far things have come
12 in the process.

13 MARKET MONITORING SECTOR MANAGER GRAY: Thank you
14 for the question.

15 I want to thank Steve for all the work he does.
16 We're going to make him blush eventually.

17 I'm a little hesitant to give a time line because
18 I think folks are looking for various signals. But there
19 are jurisdictions that are very advanced to they can track
20 whatever crediting system they're doing, setting up legal
21 structure and financing mechanisms to make sure their
22 communities and their population benefit from whatever
23 investments go into that jurisdiction.

24 The Governor's Climate Force Task Force members,
25 the sub-national jurisdictions, I mentioned they're really

1 sharing the information. They're learning from
2 particularly the Brazilians and a lot of working on in
3 Mexico. You know, I think the jurisdictions are making
4 really good progress. I think even at the larger level at
5 the national scale in the UN system, there's been a lot of
6 progress as well that some of the sub-nationals can draw
7 from.

8 So I'm hesitant to give a time line. I don't
9 think it's after the post-2020 that kind of time line. I
10 think it would be much sooner than that. There's been
11 some tremendous progress from some of our partners in the
12 GCF. It's been I think at the staff level very
13 interesting to continue to watch what they're doing and
14 interact and see what of our programs works and what
15 stringency we would look for in our -- any offset that we
16 would take into the program.

17 CHAIRPERSON NICHOLS: Jason, you might just
18 address a little bit the issue of why other jurisdictions
19 would be willing to spend a great deal of time and take
20 significant action, given how small the California market
21 is and how slow other jurisdictions have been to adopt
22 serious Cap and Trade Programs.

23 MARKET MONITORING SECTION MANAGER GRAY: I really
24 think it's because of the stringency of the program. If
25 California shows the leadership on that level for looking

1 at sector-based programming, there is an expectation that
2 others will follow suit.

3 I think the level of work, the rigor of our
4 domestic offset program is looked to as a very strong
5 rigorous program that's credible. And I think that has
6 trickled into the discussions on sector-based crediting
7 with other jurisdictions watching what we do. So I think
8 that's one of the reasons that they're really interested
9 in engaging with us.

10 CHAIRPERSON NICHOLS: Dr. Sperling.

11 BOARD MEMBER SPERLING: So let me just follow up
12 with some questions here, just really trying to understand
13 better.

14 So the forest protocol we now have, is that
15 considered treated as a sector-based program?

16 MARKET MONITORING SECTION MANAGER GRAY: It's
17 not. The difference between the domestic programs we have
18 here is there is a performance standard for that sector
19 that individual projects must meet. So the accounting is
20 actually at the project scale.

21 The reason there is a difference here is because
22 we have really good data that we can rely on from our
23 federal counterparts and our other state agencies
24 throughout the United States that we're able to really
25 ensure we know what's going on in the overall sector.

1 When we start looking at another country and
2 another jurisdiction in a country, we don't necessarily
3 have either the same level of access to the data or the
4 same authority to look at what's going on. So working
5 directly with that jurisdiction, accounting across the
6 jurisdictions sector really provides us the same levels of
7 assurance that we currently have for our project-based
8 protocol here in California.

9 BOARD MEMBER SPERLING: Do we have in mind any
10 sector-based programs for the US or California?

11 MARKET MONITORING SECTION MANAGER GRAY: I may
12 look to Rajinder.

13 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF
14 SAHOTA: We do not. Like Jason said, it's a little bit of
15 a question of the data access and being able to accurately
16 define, quantify, and then credit issued offsets.

17 When you look at a jurisdiction in another
18 country, the data may not exist there. The same levels of
19 environmental protections may not exist there. So having
20 that jurisdiction commit to an overall performance level
21 across that sector and only crediting at a project level
22 when the project reductions occur beyond that sector
23 ensures that net in that sector and that jurisdiction
24 you're getting real benefits and real reductions to the
25 atmosphere.

1 When you look at the US and you look at
2 California and you look at forestry in particular here, we
3 have protections. We have programs. We have rigorous
4 data. We have lots of quantification assurances that if
5 you're saying this overall you're getting atmospheric
6 benefits in a project in northern California, all net
7 across the US, you're getting benefits to the atmosphere.

8 When you look at other project types, it's the
9 same case here. We have better access to data. We have
10 better access to information from other regulatory
11 agencies to better understand what the requirements are in
12 terms of the sector for other environmental protections or
13 for greenhouse gas protections. So it's not as needed
14 here in the US as it would be in developing countries.

15 BOARD MEMBER SPERLING: So what about being
16 broad-mined? What about Europe? What about a program in
17 Europe? Would we consider that as -- I mean there could
18 be -- certainly in agriculture I can imagine that there
19 would be some sector-based offset programs that might be
20 compelling that wouldn't be part of their ETF.

21 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF
22 SAHOTA: So beyond forestry, I think we've looked at
23 considering sectors that are potentially capped in
24 California but not capped -- but would not be capped or
25 under some kind of greenhouse gas accounting reduction

1 program elsewhere.

2 So let's say that there's agricultural sectors in
3 Europe that are also not capped in California. Could you
4 potentially go ahead and set up performance sector based
5 standard and give them credits. Theoretically, you could
6 do that. But in Europe you also have the countries there
7 now looking internally into terms of offsets. In the EU
8 ETS, they're used the taking the EDM offsets from the
9 Kyoto protocol. But now there's a direction in some
10 countries to do what California has done, which is to see
11 what co-benefits can be provided locally by looking at
12 offsets locally. So as time goes on, we might see the EU
13 ETS countries starting to look inward in terms of offsets,
14 which would mean they want those reductions for
15 themselves.

16 BOARD MEMBER SPERLING: Last, someone wanted to
17 add something in on that.

18 So last is on -- so I looked up on the website to
19 see exactly what the offsets are. And so I see that there
20 have been none on urban forests, only a tiny amount for
21 the livestock digesters, and quite a few for ozone
22 destroying substances and US forests. I don't know if you
23 want to comment on that generally. But even specifically,
24 can you give us a sense of -- so each credit is a ton;
25 right? So that seems like a fair number of tons. I mean,

1 when we're -- I don't know. What's the cap? 300 million
2 tons? Is that what it is for California? Something like
3 that?

4 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF

5 SAHOTA: For the offset program at the eight percent
6 offset usage limit, it's about 218 million metric tons
7 through 2020.

8 BOARD MEMBER SPERLING: So this is significant?

9 Would this be considered significant, how many offsets
10 we've gotten so far?

11 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF

12 SAHOTA: So if you look at the first compliance period,
13 you're looking at a full potential demand at 8 percent of
14 about 26, 27 million metric tons?

15 BOARD MEMBER SPERLING: That's the maximum.

16 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF

17 SAHOTA: For the first compliance period. Considering how
18 many early action projects are listed and how many
19 compliance projects are listed and the addition of the
20 mine methane protocol from last April, I think we're safe
21 in saying we're going to meet that demand if every entity
22 wanted to use offsets for the first compliance period.
23 There is no requirement that you have to use offsets. You
24 can bank them for future use, et cetera.

25 When you start to look at the second and third

1 compliance periods when the scope of the program expands
2 to include transportation and natural gas fuels, you're
3 looking at a shortage of offsets under the current amount
4 of protocols that we have adopted. So there is a lag time
5 from once you adopt a protocol to when projects are
6 actually undertaken and brought to ARB for issuance. In
7 the context of the second and third compliance periods, we
8 need to keep looking in earnest at new opportunities now.

9 CHAIRPERSON NICHOLS: I would say with respect to
10 one of those protocols that I've been particularly
11 interested in, the urban forestry protocol, there is a
12 real lack of understanding on the part of potential offset
13 developers about the opportunity and the lack of marketing
14 by the jurisdictions that would benefit the most from
15 having those kinds of projects.

16 The topic has come up on the new forest Climate
17 Action Team as one of the issues that a variety of
18 agencies, Natural Resources Agency, like Parks are going
19 to be involved in, as well as in some of our conversations
20 with local governments that are very interested in playing
21 a part in the climate program. And I think eventually
22 we're going to see some uptake on that.

23 But it just wasn't -- the fact that we adopted a
24 protocol did not mean that instantaneously there were
25 going to be projects brought to us. But I don't know of

1 any intrinsic reason why it can't happen, other than just
2 the fact that people don't get it yet that's something
3 they can do.

4 BOARD MEMBER SPERLING: What have the credits
5 been selling at, do you know?

6 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF
7 SAHOTA: We watch the markets on the secondary market.
8 They're selling at about 85, 90 percent below what the
9 current allowance values are. And offsets in general are
10 always about 80 to 90 percent of what the allowance values
11 are by their very nature.

12 BOARD MEMBER SPERLING: Okay. Thank you.

13 CHAIRPERSON NICHOLS: Any other?

14 Yes, Dr. Sherriffs.

15 BOARD MEMBER SHERRIFFS: Couple of comments,
16 questions.

17 One, it sounds like we have a communication
18 problem with potential entrepreneurs, just as we have a
19 communication problem with those small trucking firms and
20 needing to get the word out to -- I don't know -- business
21 schools or people have mentioned local business
22 development within Chambers of Commerce and so on and we
23 really need to reach out to that and make them aware of
24 these opportunities and help them develop some of these.

25 Selling this to people in the far off San Joaquin

1 Valley, precipitation gets people's attention. Can we
2 quantify the effects of deforestation over five years at
3 the current levels? Are we talking about a quarter inch
4 of precipitation? Are we talking about ten percent effect
5 on precipitation? Do we have any kind of numbers we can
6 assign to that, as hard as the weather is to predict?

7 CLIMATE CHANGE PROGRAM EVALUATION BRANCH CHIEF

8 SAHOTA: I was just going to say, I think that would be a
9 difficult exercise to do thinking of how the weather
10 patterns that are impacted by short-term events like El
11 Nino, Nina, and also trying to tease out the signal
12 related directly to deforestation.

13 I think there is a trend that is in the data that
14 suggests that deforestation has a direct impact on rain
15 levels in California. And so in that context, you can
16 talk about a net overall the last 10, 20 years, this is
17 the pattern that's emerging.

18 I think it's -- how do you convince somebody
19 that's -- when they say last year it was flooding and
20 there was mud slides in this region and now you're telling
21 me what's going on, people tend to latch onto the most
22 recent events as an indicator that's the real story.

23 So I think we can do our best to try and talk
24 about the impacts and get as much data and information as
25 we can. There is a lot of research going out there

1 independent of anything ARB would be doing, like the
2 experts at JPL, some of the climate centers. There is a
3 lot information we can draw for this.

4 But I think understanding that there is a direct
5 relationship from deforestation to California snow pack to
6 California rain levels is important to the story.

7 BOARD MEMBER SHERRIFFS: Thank you. I thought
8 there was a clause in Steve's contract he couldn't leave
9 until the first REDD credit had been sold.

10 CHAIRPERSON NICHOLS: He sited the 13th amendment
11 to the US Constitution. That was an obstacle,
12 unfortunately.

13 All right. Yes, Hectar.

14 BOARD MEMBER DE LA TORRE: I just wanted to
15 emphasize one of the comments you made about the desire to
16 have more state-based credits. I know that there are
17 challenges in doing this. But there are people in the
18 building a few blocks away from us. There are people in
19 this state who want to see some of that happen. So I
20 think whatever is promising in that space, we need to
21 really prioritize because folks want to see that. And
22 they have every right to have it happen here in
23 California. So that's my little plug. Thank you.

24 CHAIRPERSON NICHOLS: Okay. It's a topic that
25 continues to come up. I know it's going come up next week

1 when I'm in Mexico with the Governor talking about climate
2 change and other projects we're going to be working on
3 together. Some of the same legislators that have been
4 very concerned about offsets in California are also
5 interested in projects in Mexico, too. So this is just an
6 evolving story, but it certainly is one that we have been
7 managing well I think.

8 I do want to just close, since there isn't any
9 action required here. We'll close out this item by saying
10 that we have some of the best people in this business
11 working in California on these projects, both for us
12 directly and indirectly as a result of the projects that
13 we have helped to incentivize. So it's going to continue
14 to be a very interesting area to watch. And even if we
15 don't generate as many tons of offsets as some people
16 might want, we'll generate a lot of papers. Lots of
17 studies and reports.

18 Thanks, everybody. I think that probably is
19 enough on this.

20 Do we have a public comment? Anybody signed up
21 for just general public comment today? If not, I think we
22 should entertain a motion to adjourn.

23 BOARD MEMBER BERG: So moved.

24 CHAIRPERSON NICHOLS: Second? Any opposition?

25 So moved. See you tomorrow.

(Whereupon the Air Resources Board recessed at
3:15 p.m.)

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