

MEETING
STATE OF CALIFORNIA
AIR RESOURCES BOARD

JOE SERNA, JR. BUILDING
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
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APPEARANCES

BOARD MEMBERS

Ms. Mary D. Nichols, Chairperson

Dr. John R. Balmes

Ms. Dorene D'Adamo

Mr. Ronald Loveridge

Mrs. Barbara Riordan

Mr. Ron Roberts

Dr. Daniel Sperling

Dr. John Telles

Mr. Ken Yeager

STAFF

Mr. James Goldstene, Executive Officer

Ms. Ellen Peter, Chief Counsel

Ms. Lynn Terry, Deputy Executive Officer

Ms. Kathleen Quetin, Ombudsman

Mr. Steve Church, Research Division

Mr. Steve Cliff, Program Development Section, Office of
Climate Change

Mr. Bart Croes, Chief, Research Division

Dr. Susan Fischer, Research Division

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APPEARANCES CONTINUED

STAFF

Mr. Bob Fletcher, Chief, Stationary Source Division

Ms. Barbara Fry, Chief, Measures Assessment Branch,
Stationary Source Division

Mr. Jorn Herner, Greenhouse Gas Technology and Field
Testing Section

Mr. Leo Kay, Director, Office of Communications

Ms. Marcella Nystrom, Air Quality Data Branch, Planning
and Technical Support Division

Ms. Elizabeth Scheehle, Greenhouse Gas Technology and
Field Testing Section, Research Division

Mr. Dale Trenchel, Greenhouse Gas Measures Section,
Stationary Source Division

Ms. Monica Vejar, Board Clerk

Dr. Patrick Wong, Health and Exposure Assessment Branch,
Research Division

ALSO PRESENT

Mr. David Armstrong, Lawrence Livermore National
Laboratory

Mr. Gus Ballis, NEC Electronics America, Inc.

Mr. Sean Edgar, Clean Fleets Coalition

Mr. Randal Friedman, Department of Defense

Mr. Hank Ryan, Small Business California

Mr. James Simonelli, California Metals Coalition

Mr. Kurt Werner, 3M

Ms. Jill Whynot, South Coast Air Quality Management
District

Mr. Larry Wong, UC Office of the President

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1 PROCEEDINGS

2 CHAIRPERSON NICHOLS: I'm going to call the
3 February 26th public meeting of the Air Resources Board to
4 order at this time and ask everybody to stand and face the
5 flag, and we'll say the Pledge of Allegiance.

6 (Thereupon the Pledge of Allegiance was
7 Recited in unison.)

8 CHAIRPERSON NICHOLS: All right. The Clerk will
9 please call the roll.

10 BOARD CLERK VEJAR: Dr. Balmes?

11 BOARD MEMBER BALMES: Here.

12 BOARD CLERK VEJAR: Ms. Berg?

13 Ms. D'Adamo?

14 BOARD MEMBER D'ADAMO: Here.

15 BOARD CLERK VEJAR: Ms. Kennard?

16 Mayor Loveridge?

17 Ms. Riordan?

18 BOARD MEMBER RIORDAN: Here.

19 BOARD CLERK VEJAR: Supervisor Roberts?

20 Professor Sperling?

21 BOARD MEMBER SPERLING: Here.

22 BOARD CLERK VEJAR: Dr. Telles?

23 Supervisor Yeager?

24 BOARD MEMBER YEAGER: Here.

25 BOARD CLERK VEJAR: Chairman Nichols?

1 CHAIRPERSON NICHOLS: Here.

2 BOARD CLERK VEJAR: Madam Chairman, we have a
3 quorum.

4 CHAIRPERSON NICHOLS: Thank you.

5 We have a reasonably light agenda today. And
6 several of us, having noticed that, have made plans to get
7 early flights. So I just want to let people know that
8 we're going to try to get through the agenda quickly but
9 with deliberate speed, of course, and try to have the
10 meeting over with by 2 o'clock today.

11 I have a couple announcements to make.

12 First of all, the closed session that appears on
13 the Board's monthly agenda will not be taking place today.

14 Secondly, there's been a slight change in the
15 order on the agenda. We will be hearing Item 09-2-5, the
16 Climate Change Scoping Plan Implementation Update and the
17 ETAAC appointments, immediately after the research
18 proposals. Then we'll continue on with the regular
19 noticed agenda order.

20 Thirdly, if there's anybody in the audience who's
21 not familiar with our procedures, we need you to sign up
22 to testify, if you wish to testify, on any item with the
23 clerk of the Board who sits over here. You're not
24 required to disclose your name, although we appreciate if
25 you do. And we usually impose a three-minute time limit.

1 If you state your name when you come up to the podium, and
2 then just speak in your own words rather than reading your
3 prepared testimony, you can usually cover a lot more that
4 way. And we can hear it better also if you get straight
5 to your main points. You don't have to read your written
6 testimony, because it will be entered into the record.

7 And finally, I am required to point out the exit
8 signs at the back of the room to let you know that if
9 there should be a fire alarm, which will be an
10 unmistakable sound, we're required to evacuate the room
11 immediately and go down the stairs and exit the building.
12 And we're not to come back until the all-clear sign is
13 heard. Let's hope it doesn't happen to us today.

14 Okay. I believe the first item on the agenda is
15 our regular monthly health update report where the staff
16 provides us with some information about some of the latest
17 research on the health effects of air pollution.

18 Today, the staff is presenting research examining
19 changes in indicators of inflammation and blood clotting
20 in adults with cardiovascular disease, when they are
21 exposed to ambient particulate matter.

22 Mr. Goldstene, would you please introduce this
23 item.

24 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
25 Nichols. Good morning, members of the Board.

1 This morning staff will present the results of a
2 recent paper that investigated the relationship between
3 particulate matter and the concentration of biochemical
4 indicators in the blood of elderly adults with heart
5 disease. While previous studies established associations
6 between ambient particulate matter and indicators of heart
7 disease, this is among the first study to broadly examine
8 the effect after particulate matter source, composition,
9 size, and origin with respect to several biochemical
10 changes in the blood.

11 This work increases ARB's understanding to which
12 characteristics of particulate matter may be most related
13 to human health effects and will help ARB to identify
14 whether some sources of particulate matter present a
15 greater risk to human health than others.

16 Dr. Patrick Wong from our Health and Assessment
17 Exposure Branch will make this staff presentation.

18 Patrick.

19 (Thereupon an overhead presentation was
20 Presented as follows.)

21 DR. WONG: Thank you, Mr. Goldstene.

22 Good morning, Chairman Nichols and Members of the
23 Board.

24 As discussed in previous health updates, many
25 studies have shown the environmental exposure to

1 particulate matter air pollution is associated with
2 increases in cardiovascular related hospitalization and
3 mortality.

4 One of the most acceptable populations include
5 elderly individuals with pre-existing cardiovascular
6 disease that places them at a high risk for heart attacks
7 or strokes.

8 --o0o--

9 DR. WONG: The exact molecular mechanisms linking
10 particulate matter or PM exposure to cardiovascular health
11 are not known.

12 However, many recent studies are beginning to
13 suggest possible pathways.

14 First, it has long been known that the risk of
15 cardiovascular disease is associated with increased
16 inflammation, platelet activation, which may lead to blood
17 clots, and oxidative stress, which is linked to cellular
18 damage.

19 The degree of these three types of cellular
20 injury can be determined by measuring specific
21 biochemicals in the blood. These biochemicals are known
22 as biomarkers, and even acute changes in biomarker levels
23 present an increased risk for individuals currently
24 diagnosed with heart disease.

25 PM exposure has been associated with increased

1 levels of these biomarkers, and it has been proposed that
2 chronic PM exposure can promote cardiovascular events like
3 heart attacks and strokes through long-term elevation of
4 these biomarkers.

5 --o0o--

6 DR. WONG: Today's health update focuses on the
7 acute effects of short-term PM exposure to determine the
8 temporal relationship between changes in PM exposure and
9 biomarker levels.

10 While this relationship has been observed in
11 several studies, it is unknown what specific properties of
12 PM can be linked to changes in biomarker levels.

13 In today's study, Dr. Ralph Delfino and his
14 colleagues at the University of California Irvine focus on
15 PM characteristics, such as source, size, and origin.

16 They investigated the relationships between
17 changes in these PM characteristics and biomarker levels
18 in a panel of elderly subjects with preexisting
19 cardiovascular disease. This work was partially funded by
20 the ARB, The National Institutes of Environmental Health
21 Sciences, and the South Coast Air Quality Management
22 District.

23 --o0o--

24 DR. WONG: This study followed 29 elderly adults
25 living in retirement homes in southern California. They

1 range in age from 71 to 96-years-old, and the average age
2 was 85.

3 All subjects had confirmed diagnosis of coronary
4 artery disease, were non-smokers, and were ambulatory
5 enough to complete simple tasks.

6 Blood samples were taken weekly over two six-week
7 periods, one during the summer and the other during the
8 fall. These samples were analyzed for biomarkers for
9 inflammation, platelet activation, and oxidative stress.

10 In addition, during the same period, PM samples
11 were collected both inside and outside the retirement
12 homes where the subjects resided and were characterized by
13 size, particle number, source, and origin.

14 --o0o--

15 DR. WONG: Statistical comparisons between
16 changes in biomarker levels and PM characteristics
17 revealed consistently higher associations with certain
18 identifiable characteristics. These included quasi
19 ultrafine PM defined by the study's author as PM less than
20 0.25 microns in diameter. Other associations were with
21 fine PM from primary combustion sources, particle number,
22 and components of fine PM originating outdoors.

23 --o0o--

24 DR. WONG: Based upon these results, the authors
25 concluded that changes in biomarker levels are strongly

1 associated with acute exposures of PM. They have
2 characteristics similar to traffic-related pollutants, in
3 particular, ultrafine PM and those from outdoor primary
4 combustion. Thus, exposure to these types of PM may lead
5 to adverse health effects in people with a history of
6 cardiovascular disease.

7 This concludes my presentation, and we'd be happy
8 to answer any questions.

9 CHAIRPERSON NICHOLS: Thank you very much for
10 that presentation.

11 Having heard a lot of epidemiological information
12 in the past brought to the Board, I'm aware of the fact
13 that people are often critical of where we got the
14 confirming kinds of studies. And I'm really pleased to
15 know that we are helping to sponsor this kind of work.

16 I am a little worried about whether 29 samples
17 would be considered to be useful in making any kind of
18 policy decisions. I'm looking at Dr. Balmes down here.

19 BOARD MEMBER BALMES: Well, I should acknowledge
20 that I'm on the External Scientific Advisory Committee for
21 the Southern California Particle Center, which is -- so
22 I've heard this data being presented in the past. And so
23 I'm an advisor to the overall center and the specific
24 project.

25 It's part of a larger study funded by NIH. And

1 the larger study will address the issue of whether the
2 pollutants that were discussed, just talked about
3 actually, have an impact on real life cardiac events, and
4 the subjects in the overall subjects sample -- sample size
5 for the study is larger than the 29 individuals. These
6 are 29 individuals they had good blood test data on and as
7 well as good air pollution data.

8 So I actually feel that we shouldn't make too
9 much out of this study. It's a study that helps us
10 understand mechanism. The authors found what they
11 expected to find in general. And so that's reassuring
12 with regard to the overall design of the study.

13 But that's, I think, all we can really take from
14 this. It supports the epidemiologic data, but doesn't
15 really take us too much farther down the road.

16 CHAIRPERSON NICHOLS: Well, it's interesting to
17 know that this larger study is going on. This has been an
18 area that everybody has been dying to have more
19 information about, which particles and how and all of
20 that.

21 BOARD MEMBER BALMES: I hope that wasn't a pun.

22 (Laughter.)

23 CHAIRPERSON NICHOLS: Sorry. Just impossible to
24 avoid those kinds of things. I'm sorry.

25 BOARD MEMBER BALMES: I'm actually pleased that

1 the Board decided to support this work. There was
2 controversy from one of the past physician Board members
3 about whether this study was worth supporting. And I
4 think the right decision was made.

5 CHAIRPERSON NICHOLS: Okay. Thank you.

6 Dr. Telles, do you have a comment or question?

7 BOARD MEMBER TELLES: Well, the significance of
8 this study will depend on who publishes it. And has it
9 been submitted to a peer review journal? Is it going to
10 be published by --

11 DR. WONG: It's already been published, and I
12 think the reference was on the earlier slide number 3.

13 BOARD MEMBER BALMES: Yeah. It's in the
14 Environmental Health Perspectives, which it's not the New
15 England Journal or JAMA, but it's probably the best
16 environmental health journal.

17 BOARD MEMBER TELLES: Yeah. I have a question,
18 just informational question. These ultrafine particles,
19 what percentage of that is actually direct diesel?

20 DR. WONG: That is not known. They didn't do any
21 type of source speciation with these particles. That's
22 absolutely one of the things they want to try later on
23 furthering the study.

24 RESEARCH DIVISION CHIEF CROES: This is Bart
25 Croes.

1 Another study the ARB has funded looks like a lot
2 of the ultrafines comes from diesel, but also from
3 light-duty vehicles. It seems actually to be from --
4 compared to studies from the 405 freeway, which is
5 primarily light-duty traffic, and the 710 freeway, which
6 has a high percentage, more than 25 percent of truck
7 traffic, the ultrafine levels seem to be similar from
8 those two freeways, indicating that both cars and large
9 trucks are equal contributors overall.

10 BOARD MEMBER TELLES: Just a comment is that when
11 we think about air pollution, we often just think about
12 the lungs. But actually, as I mentioned yesterday in my
13 hearing, that the major mortality related to air pollution
14 is cardiovascular and it's related to myocardial
15 infarction or heart attacks.

16 And there's plenty of epidemiological data that
17 just short-term exposure to high concentrations of small
18 particles increase emissions for myocardial infarction and
19 congestive heart failure.

20 The mechanism is probably this inflammatory
21 process where small particles are absorbed into the lungs
22 and the white blood cells in the lungs take up those small
23 particles and they secrete some substances called
24 leukotrienes, which activate other inflammatory substances
25 that are secreted by the liver. And one thing that most

1 people don't think about, but coronary plaque is actually
2 an inflammatory process just like a little boil on your
3 hand. It has a lot of white blood cells in it. And if
4 those white blood cells are activated by these
5 inflammatory markers, which are measured in this study,
6 there's potential that those white blood cells can secrete
7 substances, which dissolve the cap on the plaque. And
8 then the cap on the plaque is released and clots form on
9 top of the plaque. And then it closes off the artery.
10 Then you have a heart attack. That's probably the
11 mechanism that's going to evolve and how PM is related to
12 this.

13 CHAIRPERSON NICHOLS: Thank you.

14 Any other questions or comments?

15 If not, thank you very much.

16 While we're changing personnel, I should mention
17 that what Dr. Telles was referring to was his confirmation
18 hearing before the Senate Rules Committee, which I
19 attended a good part of before I had to leave. And it
20 went very well and had a satisfactory result, since he was
21 recommended for confirmation by the Committee and had a
22 parade of witnesses who came to support him, both for the
23 San Joaquin Valley and for this Board. It was a good
24 hearing. Well done.

25 All right. The next item that we will be

1 considering is a group of research proposals that are
2 presented for the Board's consideration.

3 Mr. Goldstene.

4 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
5 Nichols.

6 The proposals before you today have been
7 developed from concepts approved by the Board in July as
8 part of the fiscal year 2008/2009 Annual Research Plan.
9 This research supports the Board's mission of
10 investigating the causes, effects, and solutions to
11 California's air pollution problems, with a focus on
12 ongoing regulatory and policy priorities, such as the
13 Diesel Risk Reduction Plan, development of SIPs, and
14 climate change mitigation.

15 Dr. Susan Fischer of the Research Division will
16 make the staff presentation.

17 Susan.

18 DR. FISCHER: Thank you, Mr. Goldstene.

19 (Thereupon an overhead presentation was
20 Presented as follows.)

21 DR. FISCHER: Good morning, Chairman Nichols and
22 members of the Board.

23 We have eleven research proposals for you to
24 consider this morning.

25 --o0o--

1 DR. FISCHER: As Mr. Goldstene indicated, these
2 proposals were developed from concepts presented in the
3 Annual Research Plan, which was approved by the Board in
4 July 2008.

5 ARB staff worked with collaborators to develop
6 research concepts and into proposals, which were
7 externally reviewed through the Board's Research Screening
8 Committee.

9 ARB is continually looking for co-funding
10 opportunities to conserve the State's research dollars.
11 And these studies substantially leverage federal
12 resources, including in-kind analytical support from U.S.
13 EPA, as well as an estimated \$12.7 million worth of
14 equipment use and flight time for atmospheric studies to
15 be carried out in collaboration with the National Oceanic
16 and Atmospheric Administration.

17 The overhead rate for these projects is only 12.1
18 percent, far less than normal government-approved overhead
19 rates of 45 percent.

20 --o0o--

21 DR. FISCHER: The proposed research supports
22 Board priorities related to health, diesel, SIP support,
23 and climate change.

24 Issues directly related to agriculture and
25 environmental justice are addressed by two of these

1 projects.

2 --o0o--

3 DR. FISCHER: Now I'll describe the context and
4 objectives of the 11 proposed research projects beginning
5 with health and exposure.

6 --o0o--

7 DR. FISCHER: Children are particularly
8 vulnerable to some environmental contaminants, but their
9 exposures in daycare centers are largely unknown. A study
10 to be undertaken by Dr. Asa Bradman from UC Berkeley will
11 help ARB fill this gap in our knowledge of young
12 children's exposures to air pollution, consistent with the
13 Children's Environmental Health Protection Act.

14 Results will help ARB determine whether
15 additional regulations of some toxic air contaminants,
16 such as phthalates, is needed to protect children.

17 --o0o--

18 DR. FISCHER: We recommend three contracts for
19 support in the area of diesel emissions.

20 --o0o--

21 DR. FISCHER: All three recommended projects to
22 support ARB's Diesel Risk Reduction Plan and emission's
23 measurements. With more stringent tailpipe diesel
24 emissions standards and, as discussed in the health
25 update, the linkage between ultrafine exposures and health

1 effects, ARB may need to use number-based measurement
2 methods to characterize and control particle emissions.

3 The first project will investigate Europe's
4 measurement protocol, addressing measurement issues
5 identified in previous collaborative research.

6 Off-road diesel emissions now account for a
7 significant fraction of all diesel PM, but the off-road
8 diesel emissions inventory model has lagged behind the
9 model for on-road emissions. The results from the second
10 project will be used to update and improve the ARB's
11 off-road emissions inventory model.

12 The revised model will provide the Board with
13 improved emissions estimates from these source categories,
14 supporting ARB's efforts to protect public health by
15 curtailing off-road diesel emissions.

16 The third project makes use of NASA's full-scale
17 wind tunnel, the largest such facility in the world, to
18 probe characteristics of heavy-duty diesel emissions that
19 account for climate impacts and aerosol-aging processes,
20 including formation of ultrafine particles.

21 --o0o--

22 DR. FISCHER: We recommend two studies to support
23 State Implementation Plans for ozone.

24 --o0o--

25 DR. FISCHER: To support control of ozone, we

1 recommend for funding a project that would update the
2 ambient VOC mixture that serves as a basis for many
3 reactivity-based regulations.

4 The currently used ambient VOC mixture for
5 reactivity-based regulations represents conditions of the
6 1980s. An updated mixture will facilitate these
7 regulations to help the State reach attainment for both
8 8-hour and one-hour air quality standards or ozone.

9 A project to support development of
10 stain-blocking primers near zero VOC emissions could
11 facilitate reductions of up to 2.6 tons per day.

12 --o0o--

13 DR. FISCHER: We propose to fund two climate
14 change research related projects.

15 --o0o--

16 DR. FISCHER: Proposed projects in the area of
17 climate change were chosen to support near-term efforts to
18 meet AB 32 goals, as well as the State's climate policy
19 leadership and long-term commitment to reduce emissions by
20 80 percent.

21 The first project will resolve climate impacts of
22 particles from combustion emissions. This research will
23 provide a basis for linking particle controls to climate
24 impacts.

25 In a collaborative effort with other State

1 agencies, including the California Department of Food and
2 Agriculture and the Energy Commission, as well as
3 agricultural stakeholders, the second study addresses an
4 early action item: Emissions of N2O from application of
5 fertilizers to agricultural soils.

6 --o0o--

7 DR. FISCHER: We recommend that the Board fund
8 three projects that take advantage of a unique opportunity
9 to perform a field study illuminating a nexus of air
10 quality and climate change issues.

11 --o0o--

12 DR. FISCHER: Next year, California will benefit
13 from extensive efforts by some of the most experienced
14 atmospheric scientists in the world when the National
15 Oceanic Administration will collaborate with ARB staff and
16 many other researchers on the CalNex 2010 field study.
17 This unique study will offer unprecedented observations of
18 atmospheric phenomena in California and address ARB's
19 needs for more information to guide climate, as well as
20 air quality, regulations.

21 --o0o--

22 DR. FISCHER: NOAA's flying laboratory, the P-3
23 aircraft, seen on the right, and the research vessel, the
24 Ronald Brown on the left, will be deployed in and off
25 California in May and June of 2010.

1 Data collected by these platforms, as well as
2 possibly two other aircraft and several surface super
3 sites, will improve the emissions inventory for greenhouse
4 gases as well as particles and ozone precursors.

5 The study will also improve our understanding of
6 chemical processes, transport, and meteorology, which will
7 facilitate better air quality modeling, control
8 strategies, and planning. NOAA's contribution of
9 approximately \$12.7 million will leverage ARB's funds by
10 more than 6-to-1.

11 --o0o--

12 DR. FISCHER: We seek your approval on three
13 CalNex projects.

14 The first is a study to improve urban air quality
15 models with more accurate portrayal of nighttime
16 chemistry.

17 The second will improve our understanding of the
18 sources of processing of organic aerosols in southern
19 California.

20 And the final project is a large effort to
21 clarify atmospheric chemistry's role and the response to
22 regulatory strategies of the San Joaquin Valley air basin.

23 Results from the CalNex study will improve our
24 understanding of the impact of climate change on ambient
25 air quality, emissions inventories, and trade-offs between

1 climate and criteria air pollutant control.

2 --o0o--

3 DR. FISCHER: These proposals will help ARB
4 fulfill its mission to understand children's exposures to
5 pollution, reduce public health risks from PM and from
6 ozone, and mitigate greenhouse gas emissions.

7 We recommend that you approve these research
8 proposals.

9 --o0o--

10 DR. FISCHER: Thank you for your attention.

11 We'd be happy to answer any questions.

12 CHAIRPERSON NICHOLS: Questions?

13 Mr. Yeager.

14 BOARD MEMBER YEAGER: Thank you.

15 It's sort of just sort of a free-flowing
16 question. Maybe, Mr. Goldstene, I'll address it to you.

17 And I actually thought about this when we were
18 talking about the previous item on exposure to
19 traffic-related air pollution and how it affects adults.
20 And then just seeing what of these research proposals is
21 also dealing with children's exposures in daycare centers.
22 And I'm just wondering if, as we get more of this
23 research, how it might affect land-use decisions in the
24 future.

25 I sit on the ABAG certainly dealing with land

1 use. We know the population of California's going to
2 continue to increase. And as people try to figure out --
3 especially with SB 375 and show that we want to have
4 developed closer to the core, but oftentimes when you
5 think of infill that's available, it's going to be next to
6 highways, heavy, you know, trafficked areas.

7 And as we're learning more and more that this is
8 not where we want to have daycare centers or senior homes
9 and potential lawsuits that might happen if a city
10 approves these kind of activities. And then all of a
11 sudden somebody becomes ill because there is research that
12 shows they're in connection, how is that all sort of
13 bubbling up or bubbling down with ARB and things we're
14 sort of looking at, just trying to make sure that with all
15 the dollars we're investing in research that we're
16 actually using the information that we're getting.

17 You can answer that any way you want.

18 EXECUTIVE OFFICER GOLDSTENE: That's a very good
19 question.

20 We already have guidance that we published
21 several years ago saying that, you know, you should avoid
22 building homes within 500 feet or closer to freeways, busy
23 areas.

24 This points out a very challenging problem in the
25 land-use decision effort that we're undertaking under SB

1 375 and the land-use decisions local governments have been
2 making for years and years.

3 And so, you know, the current research that we've
4 had up to this date has already pointed out the fact that
5 living near a busy roadway is not good for your health.
6 As we learn more, it's going to put even more pressure on
7 land-use planners to keep that in mind as they move
8 forward.

9 I don't know if Mary or Lynn wants to add to
10 that.

11 CHAIRPERSON NICHOLS: I was just going to comment
12 it also puts more pressure on us to clean up the fuels and
13 the vehicles and to find ways to give people realistic
14 alternatives. So you have to really work on both sides at
15 once.

16 And I think that's one of the main things we've
17 finally come to realize that just as you can't solve the
18 global climate or air problems without getting into
19 land-use and reduce the need to drive, we also can't do it
20 only with land-use or, you know, we'll face some pretty
21 serious problems. So we've got to kind of push forward on
22 some of these things at the same time. At least that
23 seems to be the best advice so far.

24 BOARD MEMBER YEAGER: Just again maybe we see how
25 we deal with these kinds of questions. In the future, it

1 is something again that local governments are all going to
2 face. And just again trying to figure out we can use the
3 research to make better land-use decisions again knowing
4 that the pressure that's going to be on all these cities
5 to increase housing, because of our increasing population.

6 Thank you.

7 CHAIRPERSON NICHOLS: I think that's a very good
8 point.

9 The other thing I was going to mention is that I
10 know that there are people -- I'm not sure if we're
11 funding any research on this, but I know there's work
12 being done in the area of design to see if you can take
13 uses that are near roadways and protect them or protect
14 the people who are in them from exposure just -- I mean,
15 an obvious example would be putting a blank side of the
16 building up against where the roadway is and having the
17 whatever open space there is going to be for yard or
18 whatever facing away where -- you know, that sort of
19 thing. But I don't know whether there's any really good
20 research on that at this point.

21 BOARD MEMBER YEAGER: Thank you.

22 BOARD MEMBER TELLES: Follow-up question.

23 CHAIRPERSON NICHOLS: I'm sorry. Dr. Telles.

24 BOARD MEMBER TELLES: Just an informational
25 question.

1 Are there any codes or statutes that currently
2 exist that state that you can't build a school within so
3 many feet of a freeway?

4 DEPUTY EXECUTIVE OFFICER TERRY: Yeah. Yes,
5 there are State law that addresses school sites
6 specifically. And when we developed our guidance, that
7 was one of the reasons why we developed a guidance on this
8 issue a few years ago is that that doesn't exist for
9 daycare centers and medical facilities and just
10 residential housing in general. So, yeah, it was
11 important that we try to get the word out.

12 But at the same time, it's a very challenging
13 issue with respect to -- it was pre-SB 75. But a lot of
14 the dialogue on that guideline document was as local
15 governments when we spoke with them, well, what shall we
16 do? You want us from a regional perspective to have
17 transit-oriented development and density.

18 But as our Chairman has indicated, it's all about
19 cleaning up the vehicles at the same time. And so that's
20 one of the reasons we designed our guidelines based on
21 exposure and not on absolute estimations of health risks,
22 because over time, the situation is going to vastly
23 improve with respect to exposure.

24 CHAIRPERSON NICHOLS: Dr. Balmes.

25 BOARD MEMBER BALMES: Well, just a follow-up

1 comment to Lynn's.

2 San Francisco has specifically been trying to
3 deal with this issue of balancing sort of the regional
4 health impacts with local ones with regard to zoning.

5 And I think there -- I don't know how much CARB
6 has worked with the Health Department in San Francisco. I
7 know I attended at least one workshop where there was
8 somebody from CARB.

9 But they are trying to use health -- the tool of
10 health impact assessment to try to help decide between
11 those differing imperatives regional -- to try to decrease
12 regional air pollution with transit-oriented strategies of
13 development, but also try to protect individuals from
14 local exposure. So when they build -- when they allow
15 apartment buildings next to busy roads, they make sure
16 those apartments have HEPA filters to decrease
17 infiltration of particles into the homes.

18 DEPUTY EXECUTIVE OFFICER TERRY: And maybe I can
19 just add one more connection with respect to the research
20 is, over the years we've done research on in-vehicle
21 exposures to traffic pollutants. And certainly it's
22 linked to livable communities, long communities, how much
23 time children are spending in their cars. So we have a
24 lot of good information that we hope to bring to the SB
25 375 process from a public health perspective.

1 CHAIRPERSON NICHOLS: Thank you, Lynn.

2 Any other comments or questions from the Board?

3 If not, could I ask --

4 BOARD MEMBER TELLES: Yesterday, the staff
5 briefed me on this in detail, because I had a lot of time
6 here.

7 (Laughter.)

8 CHAIRPERSON NICHOLS: Good.

9 BOARD MEMBER TELLES: They did a wonderful job,
10 and I think every one of these programs has its merits. I
11 would recommend that we approve them.

12 CHAIRPERSON NICHOLS: Thank you very much.

13 BOARD MEMBER BALMES: I'll second that.

14 CHAIRPERSON NICHOLS: All of those in
15 favor -- yes, Dr. Sperling.

16 BOARD MEMBER SPERLING: I'd like to recuse myself
17 from two of the projects both from UC Davis. There's one
18 on N20 emissions and another one on the heavy-duty
19 emissions with the NASA facility, because of my
20 involvement at UC Davis. And I would point out that I
21 knew nothing about those projects -- actually, one of them
22 until yesterday.

23 CHAIRPERSON NICHOLS: Okay. Well, you beat me to
24 the punch. I was going to disqualify myself on the UCLA
25 award as well, even though I'm not affiliated in a

1 financial way with UCLA anymore. I'm still an on-leave
2 member of the faculty, so I won't vote on that particular
3 research project. But I will on all the others.

4 BOARD MEMBER BALMES: And I have to do the same
5 thing with UC Berkeley.

6 CHAIRPERSON NICHOLS: I think it's easier rather
7 than voting on them ad seriatim just to note those, and
8 then we can vote on the group as a whole.

9 All right. All those in favor please say aye?

10 (Ayes.)

11 CHAIRPERSON NICHOLS: No?

12 Very good. Thank you very much.

13 CHAIRPERSON NICHOLS: The next item is very
14 timely. It's an update on implementation of AB 32
15 discussing our plan for the coming year, as well as the
16 progress status on early action items the Board is working
17 on under AB 32.

18 We're going to also hear recommendations for the
19 appointments of five replacement members and one new
20 member to the Economic and Technology Advancement Advisory
21 Committee, otherwise known as ETAAC.

22 ETAAC has been a very active and extremely
23 helpful forum in developing the Scoping Plan, and we look
24 forward to their continued involvement as we move forward
25 on implementation. This was a Committee that was actually

1 called for in the bill itself. The Board appointed the
2 original committee in January of 2007, but there has been
3 some turnover on the Committee, as a result of people
4 changing jobs and changing focus, and so we need to
5 replace those members, as well as to create a new seat for
6 a position that I think will be very helpful to us.

7 So with that, I think I will turn this over to
8 Mr. Goldstene.

9 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
10 Nichols.

11 This item will be the first in an ongoing series
12 of updates to the Board on our progress on implementing
13 the Scoping Plan. We want to keep the Board fully briefed
14 as we continue to put the plan into place.

15 The Board approved a list of 44 early actions in
16 October of 2007. Most of these items were carried into
17 the Scoping Plan as measures.

18 Today, staff will update you on the progress made
19 to date implementing these early action measures. Staff
20 will also provide an update on plans for implementing the
21 Scoping Plan as a whole, including the process we will use
22 for developing the cap-and-trade regulation.

23 Staff will provide our current thinking regarding
24 stakeholder meetings, interaction with the Western Climate
25 Initiative, and the solicitation expert input on economic

1 analysis and allowance allocation issues.

2 One step in implementing the Scoping Plan will be
3 to continue to work with the Environmental Justice
4 Advisory Committee and the Economic and Technology
5 Advancement Advisory Committee, as Chairman Nichols just
6 mentioned.

7 The Board formed these Committees and appointed
8 their original members in January of 2007. The members
9 appointed to ETAAC by the Board were chosen for expertise
10 in the areas important to the Committee's tasks.

11 Over the past year, five of the members have left
12 the Committee, and staff has recommendations to fill these
13 vacancies. In addition, staff believes the Committee's
14 work would benefit from the inclusion of a representative
15 of the California labor on the committee, so we are
16 recommending an appropriate appointee for this new seat as
17 well.

18 Steven Cliff from our Office of Climate Change
19 will present this staff recommendation and the update.

20 Steve.

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

23 MR. CLIFF: Thank you, Mr. Goldstene.

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

1 now even greater. In addition to working with the new
2 administration, we are also working with many other states
3 who are interested in pursuing a strong climate agenda.

4 And as you know, California and ARB are
5 represented in Washington by Brian Turner, the Assistant
6 Executive Officer at ARB for federal climate policy.

7 As you well know, in a previous administration,
8 U.S. EPA denied the waiver that California needs to
9 enforce the Pavley clean car standards, the single largest
10 emission reduction measure in the Scoping Plan. U.S. EPA
11 is reconsidering the waiver of denial. On March 5th, EPA
12 will hold a hearing in Washington, D.C., to consider new
13 information and is taking written comments until April
14 6th.

15 Chairman Nichols, Chief Deputy Tom Cackette, and
16 ARB technical experts will attend the hearing to call for
17 swift action after the close of the written comment
18 period.

19 In addition, the recently passed federal stimulus
20 bill will also advance California's climate change goals.
21 We anticipate that money will be made available to
22 California for energy efficiency, renewable energy, green
23 building, and weatherization, smart grid electrical
24 transmission, and cleaner transportation technology.
25 These efforts will be funded through both direct

1 appropriations and tax credits and will provide an
2 important jump start to achieving the goals of AB 32.

3 --o0o--

4 MR. CLIFF: This timeline shows where we are in
5 the process. ARB has already adopted a number of the
6 early actions called out in the Scoping Plan and is
7 actively at work on regulations to implement many of the
8 other measures included in the Scoping Plan.

9 By 2012, all of the measures must be launched,
10 which will mean more than 20 additional regulations will
11 be adopted by ARB in 2009 and 2010.

12 Regulatory development will follow ARB's usual
13 public process with extensive stakeholder involvement.
14 And as with all regulatory programs, successful
15 implementation and enforcement will be necessary for
16 achieving the environmental goal. We will continue
17 monitoring implementation of the plan and report to the
18 Board twice a year.

19 Our experience with past clean air plans has
20 proven that we will need to be flexible, innovative, and
21 creative as some technologies surpass our expectations and
22 others barely make it out of the starting gate.

23 AB 32 recognizes that this feedback is critical
24 and requires ARB to revisit the plan in every five years.

25 I also want to point out that the Governor's

1 Executive Order on climate change and AB 32 recognize that
2 meeting the 2020 target is not the endpoint. The goal of
3 an 80 percent emissions reduction by 2050 set by the
4 Executive Order is in line with what climate scientists
5 think will be necessary to stabilize the climate.
6 Mounting evidence suggests that aggressive action is
7 imperative.

8 --o0o--

9 MR. CLIFF: For an effort as broad as this
10 Scoping Plan, interagency coordination will be critical,
11 especially since many programs cut across sectors and
12 agency responsibilities.

13 The Climate Action Team, comprised of State
14 agencies and chaired by CalEPA Secretary Linda Adams, has
15 been reorganized to focus on implementation with lead
16 groups providing regular updates on the Climate Action
17 Team to the status of major development.

18 In addition, the Resources Agency is leading the
19 development of California's Climate Adaptation Strategy,
20 which will be released in April 2009.

21 Because so many Scoping Plan measures affect the
22 energy sector, we are working very closely with the
23 California Energy Commission and the Public Utilities
24 Commission to coordinate on the development of energy
25 efficiency measures, the renewable portfolio standards,

1 combined heat and power, as well as in the development of
2 the cap-and-trade regulation.

3 We are also working with the Resources Agency,
4 the Board of Forestry, and Cal Fire to resolve technical
5 issues through the Forestry Working Group. The first
6 meeting of this group is tomorrow, and we are in the
7 process of working with our sister agencies to convene a
8 public health workgroup.

9 We have also started working with CAPCOA to
10 develop a joint work plan on climate change to be
11 completed this spring.

12 --o0o--

13 MR. CLIFF: As I mentioned earlier, the adoption
14 of the Scoping Plan was not an endpoint for the ARB, but
15 rather a kick-off for the bulk of AB 32 activities that
16 will be occurring over the coming years.

17 I will now mention a few measures of relevance,
18 but more detailed information on all of the measures
19 recommended in the Scoping Plan can be found in the
20 implementation timeline on ARB's website.

21 ARB is moving forward with the process outlined
22 in SB 375. In January, you appointed the SB 375 Regional
23 Targets Advisory Committee, which is charged with
24 providing recommendations to ARB on factors to be
25 considered and methodologies to be used in setting

1 regional targets for reducing greenhouse gas emissions
2 from passenger vehicles.

3 ARB is working very closely with CalTrans, the
4 Business Transportation and Housing Agency, and the
5 Governor's Office of Planning and Research to implement SB
6 375.

7 Staff has also been working diligently to resolve
8 very complex issues for the low carbon fuel standard
9 regulation. This regulation to reduce the life-cycle
10 carbon intensity of transportation fuels by ten percent is
11 currently expected to be presented for your consideration
12 at the April Board hearing.

13 I will present more information on the low carbon
14 fuel standard in the coming slides.

15 The cap-and-trade program is the cornerstone of
16 AB 32 implementation. And I will speak about the
17 beginning of the rule-making process for that regulation
18 in a few moments.

19 And, most relevant to today's Board hearing,
20 later today, you'll be considering two emissions reduction
21 regulations: The first, to reduce greenhouse gas
22 emissions from semi-conductor operations; and the second,
23 to reduce sulfur hexafluoride emissions in
24 non-semiconductor and non-utility applications.

25 Both of these regulations are discrete early

1 action measures, which must be enforceable by 2010.

2 --o0o--

3 MR. CLIFF: We thought this would be a good
4 opportunity to update the Board on the status of the 44
5 early action measures that you approved in October 2007.

6 Of these measures, nine were designated discrete
7 early action measures, which as I mentioned before, must
8 be adopted and enforceable by January 1st, 2010.

9 The list also included 35 early actions, both
10 regulatory and non-regulatory measures, to be pursued over
11 the next five years. We have provided you and the public
12 a handout summarizing the status of all these early action
13 measures.

14 --o0o--

15 MR. CLIFF: During the Scoping Plan development,
16 ARB staff continued to evaluate the early action measures
17 to determine whether they should be included in the
18 State's climate strategy.

19 The Scoping Plan adopted by the Board includes
20 all of the discrete early action measures and most of the
21 early actions as well as additional measures.

22 After further analysis during the Scoping Plan
23 development, we determined that some of the early action
24 measures do not provide substantial greenhouse gas
25 reductions. These measures are still being pursued for

1 criteria pollutant or toxic reductions, but were not
2 included in Scoping Plan.

3 The Board has adopted 13 early actions so far --

4 CHAIRPERSON NICHOLS: Can I interrupt you for a
5 second here? I don't believe the Board members do have
6 the update on the early action measures that you're
7 referring to. I know it exists, but it's not in front of
8 us. Where is it? The public has it. Okay. Great.

9 We'll catch up. Don't worry. Thank you.

10 MR. CLIFF: My apologies.

11 The Board has adopted 13 early actions so far,
12 included four of the nine discrete early actions. Eleven
13 more early action measures, including the remaining five
14 discrete early actions, are scheduled for Board
15 consideration this year.

16 As I mentioned, in April, staff will present the
17 low carbon fuel standard, another discrete early action,
18 to the Board for consideration. The low carbon fuel
19 standard, also known as LCFS, will be the first major
20 rule-making for the Board since adoption of the Scoping
21 Plan, and almost ten percent of the emission reductions
22 needed to meet the 2020 goal is attributed to this
23 measure.

24 The LCFS is designed to create a durable
25 framework for the near and long-term transition to lower

1 carbon fuels. The proposal is performance-based and
2 encourages technology innovation. By sending strong
3 market signals for low carbon fuels, we hope to establish
4 a stable investment environment.

5 Staff also recognizes that the success of LCFS is
6 highly dependent on other jurisdictions adopting similar
7 programs and has designed the LCFS in a way that we
8 believe can be readily adopted by other states and
9 provinces or by the federal government.

10 We would finally note that the ARB's efforts to
11 develop the LCFS are being closely watched, and the
12 decisions that are made here will have a significant
13 impact on the development of low carbon fuels on both a
14 national and international basis.

15 --o0o--

16 MR. CLIFF: The California Environmental Quality
17 Act, or CEQA, is a longstanding State law that requires
18 the assessment and mitigation of greenhouse gases from new
19 projects that pose a significant environmental impact.

20 In 2007, Senate Bill 97 was passed identifying
21 greenhouse gases as an environmental impact and thus
22 subject to CEQA analysis.

23 The Governor's Office of Planning and Research,
24 which maintains the State's CEQA guidelines, was tasked to
25 develop recommended changes to California's CEQA

1 guidelines to address greenhouse gases for adoption by the
2 Resources Agency.

3 As part of that effort, OPR asked for ARB's
4 assistance in recommending an approach for setting
5 thresholds of significance for greenhouse gas emissions.
6 We are coordinating closely with OPR on these efforts.

7 In October and December 2008, ARB staff held
8 workshops on concepts for thresholds of significance for
9 greenhouse gases. We are reviewing the substantial
10 comments received on threshold concepts, as well as
11 comments on OPR draft recommendations.

12 OPR recently concluded the public comment period
13 on their preliminary draft amendments. ARB staff
14 anticipates bringing a proposed threshold approach to the
15 Board this spring once OPR completes its process.

16 Next slide.

17 --o0o--

18 MR. CLIFF: The Scoping Plan recommended the
19 creation of a broad-based cap-and-trade program to provide
20 a fixed limit on greenhouse gas emissions. The California
21 program will be linked to those of our partners, including
22 six other U.S. states and four Canadian provinces in the
23 Western Climate Initiative, or WCI.

24 The goal of the WCI is to establish a regional
25 cap-and-trade program to reduce greenhouse gas emissions

1 collectively among the members. This translates to a
2 reduction 15 percent below 2005 levels by 2020, and nearly
3 doubles the reductions of a California-only program.

4 The regional trading market has additional
5 benefits, such as lower compliance costs for cap sources,
6 reduced leakage of emissions, and job retention in
7 California. The overall WCI reduction target is
8 comparable to the California target and the regional
9 program would cover sources that encompass nearly 90
10 percent of the region's emission.

11 California's cap-and-trade program will be
12 designed to complement health-based air quality programs
13 and environmental justice policies. As with all of ARB's
14 regulations, we will consider the effects of the program
15 on the California economy and public health. Throughout
16 the rule-making, ARB will seek input from experts on
17 public health, allowance distribution and use, revenue
18 distribution and economic analysis.

19 --oOo--

20 MR. CLIFF: As staff considers the many issues in
21 designing the cap-and-trade regulation, it is important to
22 note the principles that will guide the eventual staff
23 recommendation.

24 These principles come from AB 32 principles from
25 market mechanisms and existing ARB policies. We will seek

1 to minimize costs and maximize total benefits; to minimize
2 emissions leakage and job losses, as well as
3 administrative burdens from program implementation; to
4 complement existing air programs to reduce emissions;
5 exposure and risk while considering the potential for
6 direct, indirect, and cumulative emissions including
7 localized impacts.

8 We will also keep our focus on avoiding
9 disproportionately impacted low income communities.

10 --o0o--

11 MR. CLIFF: The cap-and-trade regulation will be
12 developed with extensive stakeholder input. Staff plans
13 to hold frequent issue-based meetings to get input on key
14 issues and eventually on draft rule provisions.

15 We also plan to solicit expert advice through
16 regular meetings on economic analyses, allocation
17 distribution and revenue use, and public health analysis.

18 Periodically, public workshops to provide broader
19 updates on rule development progress and impact analyses
20 are also planned.

21 In addition, staff will provide the Board with
22 updates as appropriate in order to get feedback and
23 direction on the rule as it is developed.

24 Throughout this process, ARB staff and staff from
25 other California agencies will be participating in the WCI

1 effort to help ensure that the design developed for the
2 regional program is consistent with what we are developing
3 under AB 32.

4 For the major milestones of the cap-and-trade
5 regulation, 2009 will be full of many focused public
6 meetings as we gather input on various design issues.

7 By late 2009 or early 2010, we expect to begin to
8 provide more detailed information and draft regulatory
9 language on specific issues.

10 By mid-2010, we plan to release the preliminary
11 draft regulation and plan to present the regulation for
12 the Board's consideration in November 2010.

13 The target date for the launch of the
14 cap-and-trade program is January 1st, 2012.

15 --o0o--

16 MR. CLIFF: As part of the rule-making for both
17 the cap-and-trade regulation as well as other AB 32
18 regulations, we will perform a series of analyses of the
19 potential impacts of the regulation.

20 Some of these analyses were required prior to AB
21 32. For example, under CEQA, ARB must evaluate
22 environmental impacts of our proposed regulation, and ARB
23 has long evaluated the economic impacts of our
24 regulations, including the impacts on small businesses.

25 Other analyses are specifically called for in AB

1 32, including the impacts on energy diversification,
2 public health, and for market-based compliance mechanisms
3 like the cap-and-trade regulation, the potential for
4 localized impacts in communities that are already
5 adversely impacted by air pollution.

6 Because of the significant interest in the
7 economic analysis and of the Scoping Plan last year, I
8 want to spend a little more time on the economic analyses
9 we have planned.

10 --o0o--

11 MR. CLIFF: The Board resolution adopting the
12 Scoping Plan recognized the concerns regarding the
13 economic analysis and directed staff to provide an update
14 to you by the end of this year.

15 Specifically, you directed staff to: Examine the
16 estimates of overall costs and savings for emissions
17 reduction measures; to estimate the timing of capital
18 investments; the annual payments to cover the cost of
19 capital investments and the resulting savings; to examine
20 the sensitivity of economic analysis results to changes in
21 inputs, such as energy price forecasts and measure costs
22 and savings; and to look at the impacts on small
23 businesses as outlined in AB 32.

24 Throughout the course of regulatory development,
25 staff will continue to update costs and savings as

1 thinking is refined and new information comes to light.

2 To help guide our analysis, staff will consult
3 with economic experts on the modeling tools and approach,
4 as well as opportunities for additional analyses. And as
5 part of ARB's open and transparent process, staff plan to
6 hold periodic public meetings to discuss the economic
7 analysis.

8 The first of these meetings is planned for early
9 April.

10 --o0o--

11 MR. CLIFF: I'm now going to switch gears to
12 discuss staff's recommendation for the Board to appoint
13 new and replacement members to the Economic and Technology
14 Advancement Advisory Committee.

15 --o0o--

16 MR. CLIFF: The Economic and Technology
17 Advancement Advisory Committee, or ETAAC, was established
18 in AB 32 to advise ARB on opportunities to facilitate
19 implementation of technological research and development.

20 The ETAAC was one of a number of committees
21 created to advise ARB on the implementation of AB 32. The
22 Market Advisory Committee provided a report to ARB in June
23 2007, and the Environmental Justice Advisory Committee was
24 established by AB 32 and has submitted comments and
25 recommendations to ARB.

1 ETAAC has a diverse membership of 20 individuals
2 representing academia, finance, manufacturing, energy,
3 transportation, agriculture and forestry. After several
4 statewide public meetings, ETAAC presented a report of
5 recommendations to the Board in February of 2008, and also
6 developed and provided comments on the Scoping Plan.

7 --o0o--

8 MR. CLIFF: Since ETAAC was first established,
9 five members have vacated their seats. To fill these open
10 seats, staff recommends the names shown on this slide as
11 replacements: Mr. Dan Adler, Dr. Chris Busch, Mr. Roland
12 Hwang, Mr. Ralph Moran, and Mr. Hank Ryan.

13 In addition to the replacement members, staff
14 recommends the creation of a new seat for labor and
15 recommends Mr. Jim Beno of the California Labor Federation
16 for this seat.

17 --o0o--

18 MR. CLIFF: In summary, staff recommends that the
19 Board create a position for labor and appoint the
20 identified persons to fill all open seats.

21 Thank you.

22 CHAIRPERSON NICHOLS: Thank you for the
23 presentation.

24 I think it's obvious that there's a huge amount
25 of work going on here and also that the Board has a lot of

1 work to do over the next year to deal with the early
2 action measures and to keep an eye on some of these other
3 issues as well.

4 I just wanted to add a comment to what Steve said
5 at the beginning about the heating up of the pace of
6 activity at the federal level and what that's doing to us
7 as well, because there's no question that the Obama
8 Administration and the Congress have been working hard to
9 try to get legislation passed this year, as well as to
10 seek the EPA to begin to move forward with some very
11 specific climate actions.

12 And in all of this, they are reaching out and
13 soliciting help from lots of places, but the State of
14 California, the ARB in particular, are very much being
15 called on to advise in a number of these areas. And as a
16 result of this, Mr. Goldstene, I, Tom Cackette, our
17 General Counsel, Ellen Peter, and many others are being
18 called upon to go to Washington or get on conference calls
19 and participate in these discussions.

20 And we're also working hard with other states
21 that have climate programs as well on these issues,
22 because we're trying hard to work out what the
23 relationship between the states and the federal government
24 is going to be in this area, in a way that would not only
25 maintain the rights of states legally to move in this

1 area, but also create a new kind of partnership between
2 the State and the federal governments, which we believe
3 should be possible in this area given how complicated it
4 is and how many different types of programs are needed.

5 We think that we could go beyond the Clean Air
6 Act, which is probably already the most vibrant
7 State/federal partnership legislation that there is into
8 something that's even more collaborative. But it's going
9 to be a very exciting year on that front.

10 And I want to invite my fellow Board members to
11 weigh in on these issues.

12 I usually post the schedule and also, you know,
13 testimony and whatever it is I'm doing on our website.
14 And I'm also happy if any of you have any spare time --

15 (Laughter.)

16 CHAIRPERSON NICHOLS: -- that you're not doing
17 anything else with, and, you know, might be interested in
18 getting more involved in some of these opportunities that
19 are out there, because there are many and they're all
20 valuable. I mean, the number of forums where people --
21 you know, important positions, people from business,
22 academia, labor, the environmental community obviously,
23 the states, local governments, et cetera -- I think those
24 are people in local government probably know more about
25 this than I do in terms of numbers of conferences and

1 events that are going on.

2 But it is just an amazing time. And I would
3 welcome your collaboration and support in expanding our
4 activities in this area. So I don't think I need to sign
5 you up for anything right this minute. But if you want to
6 let me know off line in any way, I would really appreciate
7 that.

8 We do have one person who signed up who's also
9 one of the nominees to speak at the public comment period.
10 So I'm going to invite Hank Ryan to come forward, if
11 you're here. There you are. He's our small business
12 representative.

13 MR. RYAN: There we are.

14 I just wanted to take the opportunity
15 representing Small Business California to thank you for
16 the opportunity to serve on the ETAAC committee and to
17 reflect on a bit of what we've done so far -- I've served
18 as an alternate pretty much through the process on the
19 Committee -- and what we're about to do, because there are
20 some activities occurring in the building today that go to
21 concerns that are expressed regarding small business and
22 AB 32.

23 Our organization's really built around solutions,
24 and we try to bring those forward. And I'm very pleased
25 to know that financing has reached a point where in San

1 Diego and separate territories it is fully developed and
2 will continue to be developed throughout the state
3 beginning with the 2009 to '11 cycle is somewhat delayed.
4 We're actually filing a motion following the next filings
5 on March 2nd that will ask for acceleration of OBF
6 specifically for counties and cities, because of the dire
7 straights that they are in to be addressed by PG&E and
8 SCE. We'll see where the judge takes that.

9 But today I wanted to say that we are moving
10 forward with a demonstration project for something that
11 small business really does need to be concerned about.
12 From the energy efficiency and process side, as the
13 Governor said recently, it's really just a math issue. If
14 you figure out the math, there's a positive cash flow
15 issue going on that is not being fully recognized by small
16 businesses.

17 But in the vehicle side, we do have issues. And
18 we need to get vehicles out there that can get us down the
19 road and keep our profits in tact, especially if we see
20 things that occur as they did last summer. And they will
21 again.

22 There's a vehicle drive train developed by a
23 company called AFS Trinity, which has not solved the
24 battery problem for plug-in hybrids, but it has taken the
25 ultracapacitor approach and software approach to making

1 the vehicle work in a way that brings up to 150 miles per
2 gallon in a fully operational vehicle built on the Saturn
3 view platform.

4 Two of these vehicles, along with a demonstration
5 van, will be on site in San Francisco next Friday, March
6 6th, for the purposes of getting this information out, and
7 from our perspective, look at small businesses who can
8 look at this and, say, wait a minute. If I go from 10 to
9 15 miles a gallon to 100, 150 miles a gallon, that makes
10 sense. And to get these vehicles on the manufacturing
11 lines so they can be mass produced. We don't know if they
12 will be successful. We've got to start with this type of
13 process. We think this technology may be the one.

14 And I just want to let you know and again thank
15 you. And if you'd like to have them come up to this neck
16 of the woods, I think that that would be something we
17 could put together.

18 Thank you.

19 CHAIRPERSON NICHOLS: Thank you very much for
20 coming today and for your service.

21 All right. Any comments, questions here?

22 Dr. Sperling, then Mayor Loveridge.

23 BOARD MEMBER SPERLING: Just a little comment
24 about the last presentation.

25 I do think everything we do here should support

1 innovation and stimulate innovation. I think all of us
2 have an eye towards that to create policies and
3 regulations and incentives that accomplish that in terms
4 of use, reducing greenhouse gases in particular.

5 But I had -- there are two things that I wanted
6 to talk about, one is the ETAAC committee, you know,
7 that's -- that has played and will play an important role
8 with us.

9 And I -- the names here that I see listed, I know
10 three out of the five very well. And you know, they're
11 outstanding choices, but I think that's great.

12 I was wondering if we could see a list of the
13 full membership. I can't recall having seen that in two
14 years probably.

15 CHAIRPERSON NICHOLS: It hasn't been brought back
16 before us this time around. Do you happen to have it with
17 you?

18 EXECUTIVE OFFICER GOLDSTENE: Yeah. We'll get a
19 copy of it.

20 CHAIRPERSON NICHOLS: We'll get copies made.

21 BOARD MEMBER SPERLING: The other thought is, you
22 know, there was quite a discussion here of the
23 cap-and-trade program. And I want to mention that, you
24 know, what I've always admired about ARB is it's an agency
25 grounded in scientific analysis. And it's been an

1 important part of the success of this agency.

2 And when we approach the cap and trade, there's
3 one piece that I think that we can do that will give us
4 more credibility, and that is to include an analysis of
5 carbon taxes along with it. While it's true that the
6 political momentum is behind cap and trade, there's a lot
7 of reasons to, you know, not drop the carbon tax idea off
8 the table. And it's not even a done deal in Washington
9 how they're going to proceed either.

10 So I would just suggest that the analyses
11 include -- at least as a comparative analysis of the pros
12 and cons of the carbon tax.

13 BOARD MEMBER BALMES: I would also endorse that
14 position.

15 CHAIRPERSON NICHOLS: I think this is an issue
16 which is going to keep coming back up for sure as we see
17 cap and trade moving closer towards possibly actually
18 being enacted as a federal program. We see quite a number
19 of organizations, including some of the largest
20 corporations in the world, saying that they would prefer a
21 tax rather than the cap-and-trade program. Really very
22 interesting.

23 Some people I think assume that that's a delaying
24 tactic perhaps or perhaps not in good faith. But
25 actually, the tax idea has been one that's been very much

1 promoted by the Congressional Budget Office over the
2 years. You know, the trade-off being that it's much
3 easier to institute a tax if you have the political will
4 to do it and to collect it, than it is to administer a
5 cap-and-trade program.

6 And, of course, one of the main arguments in the
7 early days for cap and trade was that many people believed
8 that it would be easier to get political bodies to adopt
9 it rather than taxes, because we know how hard it is to
10 get taxes approved.

11 So it's a very interesting dynamic. And I think
12 we have stated our preference as the Governor did for cap
13 and trade as a policy, primarily because of the cap that
14 it's legally binding and therefore, you know, you have a
15 greater assurance of what you're getting if you had that
16 program in place.

17 But I know when I testify or am asked about this,
18 I always try to leave the door open in a sort of a
19 pragmatic way to say, you know, that we are interested in
20 whatever works. And we're willing to work with anybody
21 who's in a position to help us design a program that will
22 work.

23 In terms of the analysis, there was work done on
24 the carbon tax as part of the plan. And maybe you want to
25 talk about that, Mr. Goldstene.

1 EXECUTIVE OFFICER GOLDSTENE: Sure, Chairman
2 Nichols.

3 As part of the Scoping Plan economic analysis,
4 which was challenging as you all know, was looking at a
5 tax as alternatives. We still believe that we need to
6 look at alternatives as part of the rule making that is
7 part of the process is looking at alternatives. So we'll
8 have to make sure that we incorporate some level of
9 analysis on a carbon tax, as we move forward on the
10 development of the cap-and-trade rule.

11 CHAIRPERSON NICHOLS: Thank you.

12 Any other questions?

13 Ms. D'Adamo. I'm sorry. Mr. Loveridge first.

14 BOARD MEMBER LOVERIDGE: This is, in some ways, a
15 follow-up to what Dan Sperling raised about the ETAAC
16 Committee. And let me just offer a point of view that's
17 not really questioning the names here at all. Part of
18 that I don't see the other names.

19 But, you know, California has arguably the
20 world's greatest research universities in the world. This
21 is a very tough problem. Every name here is a
22 stakeholder. There was -- academy was -- academia was
23 mentioned. It seems to me that in this quest for
24 difficult answers, we ought to look to the best we have in
25 the university system, both public and private, in

1 California. I'm distressed that we don't do that very
2 often. I think we should do so as we approach this
3 enormously difficult question.

4 So it's nothing against what's here, but I don't
5 know where and who else is on the list.

6 CHAIRPERSON NICHOLS: Right. No, I hear you.
7 We'll get the list around to everybody. I think that was
8 an oversight, and we should have had that in front us just
9 to see where these folks fit in.

10 It is true that the ETAAC Committee is more of a
11 hands-on group of people, who work in this field who were
12 invited to help actually craft the Scoping Plan, than it
13 is part of the big picture solutions thinking that we also
14 need to have.

15 I would point out that although last year it
16 didn't make it to signature, there's going to be another
17 effort this year to create a Climate Research Institute in
18 California.

19 Something that was an idea that very much
20 promoted by the Public Utilities Commission, and it got
21 caught up in some politics around the PUC and whether they
22 should be raising the funds for this.

23 But I've been working with my colleagues at the
24 Energy Commission and the PUC to help develop this and
25 also with our agency, CalePA, to try to see if we can help

1 flesh out a proposal that could make it that could
2 generate some new funding, but also -- and funding is
3 important -- but also really a new mission for California
4 research entities to contribute to directly to helping us
5 make policy in this area.

6 I think many of us agree that we're not going to
7 make it through without engaging some of our best research
8 institutions.

9 Any other comments?

10 Ms. D'Adamo.

11 BOARD MEMBER D'ADAMO: Thank you for the
12 presentation. I found it to be very helpful, and would
13 just like to ask how often we're going to be receiving
14 these updates. Despite the fact we just adopted this a
15 few months ago, this is still very helpful.

16 And also a request. Would it be possible to
17 include in the next presentation some charts -- pie charts
18 to help put it in perspective as to, you know, the value
19 of some of these actions in terms of meeting the goal.

20 I think that you mentioned in your presentation
21 that low carbon fuel standard is expected to bring 10
22 percent of the reductions that we expect to achieve. So
23 obviously that one is very significant. And maybe putting
24 some percentages on these other items as well.

25 And then I always have a challenge with cap and

1 trade and, you know, conceptualizing where it fits in with
2 the regulations that we're adopting. So if there's a way
3 to incorporate the capped sector reductions as well, it'd
4 be helpful for me.

5 EXECUTIVE OFFICER GOLDSTENE: We'd be happy to do
6 that.

7 CHAIRPERSON NICHOLS: Go ahead.

8 EXECUTIVE OFFICER GOLDSTENE: We'd be happy to
9 provide the charts.

10 And our plan was to provide an update to the
11 Board every two or three months, but, of course, we could
12 do it more often if you want.

13 We'll be back -- the next major item on AB 32 is
14 the LCFS rule, which we're planning to bring to the Board
15 in April. And so, at that time, we'll give you another
16 update. That was our current plan, but we can do more if
17 you'd like.

18 CHAIRPERSON NICHOLS: I was actually just
19 thinking when DeeDee was describing a pie chart that we do
20 one of those thermometers like they have --

21 EXECUTIVE OFFICER GOLDSTENE: -- to show where we
22 are in our program.

23 (Laughter.)

24 CHAIRPERSON NICHOLS: Sorry.

25 (Laughter.)

1 CHAIRPERSON NICHOLS: Other comments?

2 Yes, Dr. Telles.

3 BOARD MEMBER TELLES: I have a question regarding
4 the presentation.

5 Early in the presentation, you mentioned the
6 federal stimulus package is going to come up with some
7 appropriations and tax credits. And I have a couple
8 questions in that regard.

9 One is, are states like California, which are
10 putting their economy at risk to proceed with a climate
11 change plan, getting preferential treatment? And which I
12 think they should. And if so, have our communications
13 with the federal government been such? And then how much
14 appropriation is actually slated for California and tax
15 credits? And how are they going to be used to accomplish
16 what we're trying to accomplish?

17 EXECUTIVE OFFICER GOLDSTENE: We're still looking
18 at the stimulus bill to find out where we're -- when we
19 can go and make a case for some of the money for certain
20 types of projects. Energy is the big area, I think, where
21 we're going to have major impact and where the bulk of the
22 federal funding will go. But there might be other areas
23 as well that we're going to have to look at. This is all
24 happening very quickly, and it's new. All of this is new
25 at the same time.

1 And we're also looking at other monies on our
2 other rules not related to climate, but on the diesel
3 reductions and other things. So there's a lot of money
4 slowly becoming available relatively quickly in the
5 political sphere. And we're having to see where we can
6 find opportunities as a state, not just ARB, but PUC, CEC,
7 and other agencies too.

8 CHAIRPERSON NICHOLS: The Governor's office is
9 leading the effort though. They're not -- individual
10 agencies are not out panhandling.

11 (Laughter.)

12 CHAIRPERSON NICHOLS: We're doing this together.

13 EXECUTIVE OFFICER GOLDSTENE: I think it's a good
14 question, and we'll provide you an update when we know
15 more.

16 BOARD MEMBER TELLES: Just one final question on
17 ETAAC.

18 The attrition of the Committee, was that
19 expected? Or was there any disgruntlement or frustration
20 or seems like a large number to leave all at once?

21 EXECUTIVE OFFICER GOLDSTENE: I think it was over
22 a period of time. I think some people changed jobs.
23 Others got busy. Other, you know, groups made choices
24 about other representation. So there was no
25 disgruntlement, to my knowledge.

1 CHAIRPERSON NICHOLS: Yeah. I think five out of
2 20 after, what, three years over the three-year period.
3 Some of these people left earlier. They didn't all leave
4 at one time.

5 I'm just looking at a couple of them. I know
6 unfortunately one of them was deceased. But the others I
7 think are all just natural transitions.

8 Yes, Dr. Balmes.

9 BOARD MEMBER BALMES: I don't know if this is the
10 appropriate time, but the discussion of the federal budget
11 stimulus package and its impact on California reminded me
12 that I would like to actually hear details about the
13 budget bill here in California that's impacted on some of
14 our work as well. I don't know if that's something we can
15 do today.

16 CHAIRPERSON NICHOLS: Do you want -- we don't
17 have actually the full report out on the financial aspect
18 of the budget. I suspect you're interested in the
19 legislation that --

20 BOARD MEMBER BALMES: Yes.

21 CHAIRPERSON NICHOLS: -- goes along with the
22 budget and some of the controversy about that.

23 Mr. Goldstene, do you want to comment on that?

24 EXECUTIVE OFFICER GOLDSTENE: One of the trailer
25 bills in the budget directed you, the Board, to amend the

1 off-road construction rule to essentially delay its
2 implementation effectiveness by a couple years. The
3 overall effect is a 17 percent reduction in benefits by
4 2014. So we're looking at that language now, and we'll
5 have to come to you with a proposal to comply with that
6 statute in the near future.

7 CHAIRPERSON NICHOLS: I have been quoted in a
8 couple of places in my strong disappointment with the
9 passage of this bill. And I recognize that it was part of
10 a compromise that was made in order to get a budget
11 passed.

12 But despite the fact that the environmental
13 community and the Legislature and the Governor, I should
14 add, were successfully resisting many of the bad ideas
15 that we heard floating around, this one did make it
16 through. And I think we're going to have to look hard at
17 how we implement it and where there are other ways to make
18 up those emissions reductions, which we can't afford to
19 lose.

20 BOARD MEMBER BALMES: I guess I would make a
21 comment for the record that in contrast to the very open
22 process by which we discussed that regulation and the
23 Board worked on that regulation, this was done, in what I
24 would consider, an undemocratic fashion that didn't allow
25 that public input.

1 CHAIRPERSON NICHOLS: I think that's a valid
2 comment.

3 Yes, Dr. Telles.

4 BOARD MEMBER TELLES: Yesterday in my hearing, I
5 got a pretty good schooling on economics.

6 (Laughter.)

7 BOARD MEMBER TELLES: And one of the senators,
8 and rightfully so, mentioned there was disagreement
9 between the independent economical review and the staff
10 review. And are we going to continue to have independent
11 economical reviews as we go forward?

12 EXECUTIVE OFFICER GOLDSTENE: Yes. And, in fact,
13 we've learned from last year. So we'll do it even better
14 this year.

15 We're going to be coming to you -- we made a
16 commitment -- you directed us in the Scoping Plan
17 resolution to come back to you in December with an updated
18 economic analysis. And part of that work will include
19 working with these independent experts up front instead of
20 after we've completed the analysis. So we'll work with
21 them as we move forward.

22 CHAIRPERSON LLOYD: I'm going to push us forward,
23 unless there are comments that must be made.

24 BOARD MEMBER SPERLING: Just a tiny little
25 follow-up on Mayor Loveridge's question about university

1 participation.

2 I think there's a general statement I'd just like
3 to make on that. And that is that we do have this
4 tremendous capability and resources out there in the
5 university. And I would just make a general plea to the
6 staff and our chairman to -- as we're putting together new
7 committees, that we really tap it. Because it's not only
8 in terms of getting their input, but a lot of these people
9 we can bring in, you know, as part of the process playing
10 leadership roles as we move along. And we're going to
11 need all of the leadership. And there's, you know, huge
12 potential for that for this agency and some of the others
13 that we're working with.

14 CHAIRPERSON NICHOLS: There are more Dan
15 Sperlings out there?

16 (Laughter.)

17 BOARD MEMBER SPERLING: There's a lot of them out
18 there.

19 CHAIRPERSON NICHOLS: Good.

20 BOARD MEMBER SPERLING: You know, I just remember
21 I was encouraged very much by a few senior people, you
22 know, when I was thinking about this. And it made, you
23 know, a big impact. So I think that's to the benefit of
24 the State if we can do that.

25 CHAIRPERSON NICHOLS: Thank you.

1 Mrs. Riordan.

2 BOARD MEMBER RIORDAN: Madam Chair, I'm going to
3 move the item that's before us. I looked at the original
4 list, and I looked at the additions. And I feel it's a
5 balanced list. And I feel a number of people are there at
6 the table who belong there. And I'd like to support this.

7 CHAIRPERSON NICHOLS: Do we have a second?

8 BOARD MEMBER BALMES: Second.

9 CHAIRPERSON NICHOLS: All in favor say aye?

10 (Ayes)

11 CHAIRPERSON NICHOLS: Any opposition?

12 Great. Thank you.

13 We will move on, unless our court reporter needs
14 a break.

15 Okay. Then we'll take our next item, which is a
16 proposed regulation to reduce greenhouse gas emissions
17 from semiconductor operations. This proposal is one of
18 the discrete early action measures that we talked about a
19 little bit ago. And I believe this is the first
20 greenhouse gas regulation that's ever been proposed for
21 the semiconductor industry. I know a tremendous amount of
22 work went into developing it and look forward to the staff
23 presentation

24 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
25 Nichols.

1 The semiconductor industry uses greenhouse gases
2 with high global warming potentials ranging from 6,000 to
3 nearly 24,000 times that of carbon dioxide. As you know,
4 Assembly Bill 32 requires the Board to adopt discrete
5 early action measures for greenhouse gases that are
6 enforceable by January 1st, 2010, which we just talked
7 about.

8 These measures must achieve the maximum
9 technologically feasible and cost effective reductions in
10 greenhouse gases emissions. In October 2007, the Board
11 designated the measure to reduce greenhouse gases from the
12 semiconductor industry as a discrete early action measure.

13 Before proceeding to the staff presentation, I
14 want to acknowledge the voluntary reductions already
15 achieved by some members of this industry.

16 The proposal before the Board today would
17 establish emission limits that further reduces the
18 greenhouse gas emissions from semiconductor operations by
19 56 percent.

20 I'll ask Dale Trenchel from our Stationary
21 Source Division to begin the staff presentation.

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

24 MR. TRENSCHEL: Thank you, Mr. Goldstene.

25 Now I'm on.

1 Thank you, Mr. Goldstene.

2 As mentioned, today's presentation will describe
3 the basis our proposal to further reduce greenhouse gas
4 emissions from some semiconductor operations. The
5 proposed regulation for semiconductor operations is one of
6 the high global warming potential measures in the Scoping
7 Plan.

8 --o0o--

9 MR. TRENSCHEL: In approving the Scoping Plan, to
10 implement a climate change program, the Board identified
11 sources of high global warming potential gases as a
12 significant sector requiring mitigation. High GWP gases
13 have global warming potentials thousands of times greater
14 than carbon dioxide.

15 This slide shows the high GWP gases listed in AB
16 32, which are the same as those covered by the Kyoto
17 Protocol.

18 In addition, AB 32 allows for consideration of
19 other high GWP gases, such as nitrogen trifluoride, which
20 also contribute to climate change.

21 Under business as usual, high GWP gases will play
22 an increasingly significant role in the future. We
23 project that emissions of these gases will more than
24 triple from 2004 to 2020, with a majority of increases
25 coming from the refrigeration and air conditioning

1 systems.

2 --o0o--

3 MR. TRENSCHEL: The Scoping Plan identified a
4 number of mitigation measures for this sector that will
5 achieve reductions on the order of 20 million metric tons
6 of carbon dioxide equivalent by 2020.

7 More than 50 percent of the emission reductions
8 will come from refrigeration and air conditioning systems.
9 While some measures, such as the proposed semiconductor
10 regulation and the consumer products regulation, do not
11 result in large reductions, these set a precedent for
12 national and international action.

13 In addition to direct measures, the Scoping Plan
14 includes a mitigation fee for high GWP gases to provide
15 economic incentive for further reductions.

16 --o0o--

17 MR. TRENSCHEL: The high GWP greenhouse gas
18 sector is very diverse. This slide reflects the breadth
19 of strategies that we've identified in the Scoping Plan
20 for stationary sources. The three measures listed here
21 are discrete early action measures. The measure for
22 consumer products has already been adopted by the Board.

23 The semiconductor regulation includes SF-6, the
24 highest GWP gas, as well as other high GWP gases.

25 --o0o--

1 MR. TRENSCHEL: This slide shows the high GWP
2 strategies identified in the Scoping Plan for mobile
3 sources. As previously mentioned, a high GWP mitigation
4 fee measure will provide another mechanism to reduce
5 emissions that remain after the specific measures take
6 effect.

7 Now I will discuss the proposed regulations for
8 semiconductor operations.

9 --o0o--

10 MR. TRENSCHEL: As part of the rule development
11 process, we conducted a survey of the semiconductor
12 industry. The survey results indicate that California has
13 85 semiconductor operations. Approximately 30,000 people
14 are employed by the operations that are affected by the
15 proposed regulation.

16 California sales exceed \$16 billion annually,
17 which is approximately 20 percent of the U.S. market. The
18 85 operations emitted 0.32 million metric tons of carbon
19 dioxide equivalent in 2006.

20 This represents about ten percent of the U.S.
21 emissions from semiconductor operations.

22 --o0o--

23 MR. TRENSCHEL: The proposed regulation addresses
24 emissions from two processes used in the semiconductor
25 industry.

1 The first process is chemical vapor deposition,
2 or CVD cleaning. Greenhouse gases used in this process
3 remove residues that adhere to the walls of the deposition
4 chamber. The chamber must be cleaned periodically to
5 prevent contamination of the wafer surface.

6 Some operations have continuous monitoring
7 equipment to indicate when chamber cleaning is needed.
8 Others perform cleaning after a certain number of wafers
9 are processed.

10 The second process is etching. Greenhouse gases
11 are used to etch patterns on each layer of the wafer.
12 Depending upon the application, a wafer can have from one
13 to many layers.

14 --oOo--

15 MR. TRENDSHEL: This slide shows that the global
16 warming potentials of gases used by semiconductor
17 operations are thousands of times greater than carbon
18 dioxide. All of these gases contain fluorine, which is an
19 essential element in semiconductor processing.

20 Based on ARB survey results, the gases listed are
21 used in both CVD chamber cleaning and etching processes.

22 The first gas listed, C₂F₆, accounts for half the
23 total emissions. C₃F₈ and C₄F₈ are used as lower GWP
24 substitutes for C₂F₆ in the chamber cleaning process
25 because they are cost-effective replacements.

1 NF3 is a substitute gas with a high GWP, but
2 accounts for just five percent of the total emissions.
3 This is because NF3 is much more effective than C2F6 in
4 the CVD chamber cleaning process.

5 --o0o--

6 MR. TRENSCHEL: High GWP gases containing
7 flourine are used in the manufacturing process to make
8 semiconductors or "chips". Flourine prevents
9 contamination of the chips by effectively removing
10 deposits from the walls of chemical vapor deposition
11 chambers. Flourine even also enables precise etching to
12 the submicron level on the surface of the chips.

13 Chips are used in a wide variety of products,
14 such as cellular phones, computers, street lights, and
15 vehicles.

16 --o0o--

17 MR. TRENSCHEL: The slide shows business as usual
18 emissions for 2006 and 2020.

19 Total emissions are projected to decline slightly
20 from 0.32 to 0.29 million metric tons of carbon dioxide
21 equivalent, as some operations indicated they were
22 planning to move or close prior to the development of the
23 proposed regulation.

24 While the amount of gas used for CVD chamber
25 cleaning is nearly 40 percent greater than that for

1 etching, the GWP weighted carbon dioxide equivalent
2 emissions from the two processes are similar. This is
3 because etching uses higher GWP gases and fewer abatement
4 devices are used on etching tools.

5 --o0o--

6 MR. TRENSCHEL: The U.S. EPA has administered a
7 voluntary emissions reduction program since 1996. Three
8 operations in California participate.

9 The program goal is to reduce emissions to ten
10 percent below 1995 levels by 2010.

11 Two of the three California operations have
12 exceeded the ten percent goal.

13 Currently, there are no mandatory greenhouse gas
14 regulations pertaining to the semiconductor industry.

15 --o0o--

16 CHAIRPERSON NICHOLS: Could I interrupt you for
17 just a second? I just have to ask this question.

18 When you use the term "operations," do you mean
19 manufacturers? Is that what they are or what?

20 MR. TRENSCHEL: Yes. It's basically a
21 manufacturing facility. They can also do R&D at that same
22 facility.

23 CHAIRPERSON NICHOLS: I see. Okay. Thanks.

24 MR. TRENSCHEL: The U.S. EPA has administered
25 both -- I read this already.

1 Okay. Sorry.

2 Semiconductor operations have used three
3 strategies to reduce their emissions. These strategies
4 are process optimization, alternative chemistry, and
5 abatement.

6 Process optimization reduces emissions by
7 reducing the amount of gas used for CVD chamber cleaning.
8 Alternative chemistries is the substitution of one gas for
9 another. The substitute gas reduces emissions because it
10 is a lower GWP or a lower percentage of the gas is emitted
11 in the process.

12 The most common abatement technologies used to
13 reduce emissions are thermal destruction and plasma
14 destruction. Emissions can be abated at the process tool
15 or at the end of the exhaust stream of multiple tools.

16 --o0o--

17 MR. TRENSCHEL: As mentioned earlier, the Board
18 designated greenhouse gas emissions from the semiconductor
19 industry as a discrete early action measure.

20 discrete early action measures must become
21 enforceable by January 1st, 2010, and achieve the maximum
22 greenhouse gas reduction that is technologically and
23 economically feasible.

24 The proposed regulation includes performance
25 standards, reporting, and recordkeeping provisions and

1 relies on existing strategies to reduce emissions.

2 Staff believes the proposal serves as a model for
3 the U.S. as well as for international semiconductor
4 operations.

5 --o0o--

6 MR. TRENSCHEL: The proposed performance
7 standards apply to 28 operations, which account for 94
8 percent of the total emissions. There are standards for
9 large, medium, and small operations, and the stringency
10 decreases with the size of the operation. The proposal
11 would reduce emissions by 56 percent, or 0.18 million
12 metric tons of carbon dioxide equivalent. Twelve of the
13 28 operations already comply with the standards based on
14 2006 emissions data.

15 --o0o--

16 MR. TRENSCHEL: This slide shows the emission
17 reductions by the size of operations. Large operations
18 accounting for over half of the emissions would have the
19 most stringent emission standards, achieving 61 percent of
20 the total reduction.

21 Medium operations, which account for one-quarter
22 of the emissions, would have a less stringent standard
23 that achieves 17 percent of the reductions.

24 And small operations would have the least
25 stringent standard, accounting for 22 percent.

1 --o0o--

2 MR. TRENSCHEL: Semiconductor operators would
3 have until January 1st, 2012, to comply with the proposed
4 standards with two exceptions.

5 First, operators that are upgrading their process
6 tools from 150 millimeter wafers to larger wafers are
7 allowed two additional years to comply, or until January
8 1st, 2014. This provision prevents abatement expenses
9 from being incurred for equipment that would soon be
10 replaced.

11 Second, very small operations that emit less than
12 800 metric tons of carbon dioxide equivalent per year are
13 exempt from the standards. This threshold represents a
14 natural breakpoint in the emissions data for the remaining
15 57 operations that account for six percent of the
16 emissions.

17 --o0o--

18 MR. TRENSCHEL: The proposed regulation also has
19 reporting and recordkeeping requirements for all
20 operations. Semiconductor operators would be required to
21 submit an initial report of 2010 emissions by March 1st,
22 2011. Annual emission reports would be required every
23 year thereafter.

24 Information reported would include the volumes of
25 each gas used in the CVD chamber cleaning and etching

1 process, wafer size and sizes, and processing volumes for
2 the year, and carbon dioxide equivalent emission values.

3 Reporting for very small operations is less
4 detailed and designed to verify only that their emissions
5 do not exceed the emissions threshold.

6 --o0o--

7 MR. TRENSCHEL: This slide summarizes the
8 economic impacts of the proposal. The overall cost
9 effectiveness ranges from \$17 to \$23 per metric ton of
10 carbon dioxide equivalent reduced.

11 The overall cost effectiveness is \$21 per metric
12 ton. We believe this is a conservative cost estimate,
13 because we used industry cost data and assumed a 10-year
14 equipment life.

15 The annual cost, which includes the initial
16 capital costs for abatement equipment and annual
17 reporting, operating, and recordkeeping costs, is \$3.7
18 million.

19 While not shown on this slide, another measure of
20 economic impact of the proposed regulation is that decline
21 in profitability.

22 The staff analysis shows that the decline is less
23 than one percent, well below a ten percent decline, which
24 is considered to be a significant impact on profitability.

25 --o0o--

1 MR. TRENSCHEL: We have only received comments
2 from one semiconductor manufacturer, and that is NEC
3 Electronics. They request that credit be given for
4 voluntary reductions already achieved.

5 Staff considered the voluntary reductions already
6 achieved when developing the proposed standards. When our
7 survey revealed the emissions were lower than predicted,
8 we decreased the reduction goal. Consequently, many
9 operations already comply with the proposed standards.

10 NEC commented that the emissions standards should
11 account for higher emissions due to product complexity.
12 The increasing emissions due to product complexity was a
13 primary consideration in developing the proposed
14 standards. Our survey data indicated that companies
15 manufacturing the full range of products already comply
16 with the proposal, including the number of wafered layers
17 in the proposed regulation would add complexity, making
18 enforcement more difficult. As shown earlier, nearly half
19 of the operations in each category already meet the
20 standards.

21 Another comment is to extend the compliance
22 schedule. To accommodate operations upgrading their
23 process tools, staff added two years to the compliance
24 date for operators that are upgrading their process tools
25 to newer technology.

1 Another comment is that the standards are not
2 cost effective. Staff relied on industry data to perform
3 the cost analysis. The methodology for the cost analysis
4 is consistent with that used for other rule makings
5 approved by the Board since 1990.

6 --o0o--

7 MR. TRENSCHEL: Two working groups were formed to
8 develop a proposed regulation.

9 The industry group has semiconductor operators,
10 process tool manufacturers, and gas providers.

11 The district working group included staff from
12 three air districts where most of the operations are
13 located.

14 The groups met several times through
15 teleconferencing. Staff conducted a survey of more than
16 300 potential sources to collect information on the use of
17 greenhouse gases and emission control technologies. Over
18 90 percent responded to the survey.

19 Staff also held several workshops where industry,
20 government representatives and other interested parties
21 participated.

22 --o0o--

23 MR. TRENSCHEL: In summary, staff believes that
24 the proposed regulation cost effectively reduces
25 greenhouse gas emissions by 0.18 million metric tons of

1 carbon dioxide equivalent per year.

2 It's technically feasible with several options to
3 meet the standards; meets the legal requirements of AB 32;
4 and sets a benchmark for national and international
5 standards.

6 Staff recommends that the Board adopt the
7 proposed regulation.

8 Thank you. And that concludes the presentation.
9 We'd be happy to answer any questions.

10 CHAIRPERSON NICHOLS: Are there any initial
11 questions before we -- yes, Supervisor Yeager.

12 BOARD MEMBER YEAGER: Yes. Thank you. For that
13 presentation.

14 If you could go to slide 12 for me. This is the
15 emission reduction strategies.

16 Is it correct to say that these are all fairly
17 doable? And if -- that it wouldn't create an additional
18 burden on many of these companies? I mean, like just
19 reducing the amount of gas used in the cleaning I think
20 would be fairly easy to do. I guess I'm looking for
21 confirmation that, in fact, these are not overly
22 burdensome, or that left on their own, many of these
23 companies might want to do this anyway.

24 The fact that there is a substitute gas that's
25 available seems like, again, that is a change that people

1 could make. And so I'm just looking for confirmation
2 about that.

3 MEASURES ASSESSMENT BRANCH CHIEF FRY: I'm
4 Barbara Fry.

5 Yes, all of these strategies are currently being
6 used by the industry.

7 BOARD MEMBER YEAGER: And certainly all of us,
8 you know, get set in our ways and we need a little push
9 now and then, as individuals and companies. But again, it
10 seems like that if a company wanted to switch over to
11 these things, they could do that, I guess I want to say,
12 relatively easily.

13 MEASURES ASSESSMENT BRANCH CHIEF FRY: I think
14 that's the case. And I think that's why half the
15 companies already comply with the proposed standards.

16 BOARD MEMBER YEAGER: Just do you think for the
17 other companies, again, they just really hadn't focused on
18 it or it was easier just to keep the status quo?

19 MEASURES ASSESSMENT BRANCH CHIEF FRY: That's
20 correct. They hadn't been regulated for greenhouse gas
21 emissions.

22 BOARD MEMBER YEAGER: I did just want to comment
23 I think your outreach to companies was very thorough, and
24 certainly a lot of companies that we have in the Silicon
25 Valley were included in there. And I think it makes for a

1 very good recommendation and something that a lot of these
2 companies can actually do.

3 So thank you for your hard work.

4 MEASURES ASSESSMENT BRANCH CHIEF FRY: Thank you.

5 CHAIRPERSON NICHOLS: Other questions?

6 Yes.

7 BOARD MEMBER SPERLING: Are we going to have
8 testimony, because I have a major issue --

9 CHAIRPERSON NICHOLS: A major issue, okay. Do we
10 have witnesses?

11 EXECUTIVE OFFICER GOLDSTENE: Two witnesses.

12 CHAIRPERSON NICHOLS: I have an issue -- I don't
13 know if it's major or not -- about the structure of the
14 rule.

15 BOARD MEMBER SPERLING: Shall we do that first?

16 CHAIRPERSON NICHOLS: Yes. We might as well.

17 We have two witnesses. We have the South Coast
18 Air Quality Management District followed by NEC.

19 MS. WHYNOT: Good morning. I'm Jill Whynot,
20 Director of Strategic Initiatives at South Coast Air
21 Quality Management District. I really appreciate the
22 opportunity to make some comments this morning.

23 I have just a couple slides that we'll pull up.
24 This morning what I need to do is raise a policy question
25 for your consideration.

1 (Thereupon an overhead presentation was
2 Presented as follows.)

3 MS. WHYNOT: Go to the next slide, please.

4 And it has to do with one of the options that
5 folks can use to comply with this rule. If they want to
6 use alternative chemistries --

7 --o0o--

8 MS. WHYNOT: -- one of the compounds they can use
9 is nitrogen triflouride, or NF3. Currently, it's about
10 five percent of the greenhouse gas weighted emissions in
11 the semiconductors, but there have been folks that are
12 switching to this gas. It's not a good option from an
13 environmental tradeoff standpoint, and I believe it's not
14 a good precedent to set for other areas that may not have
15 toxic new source review or AB 2588 processes to take care
16 of one of the byproducts.

17 Next slide.

18 --o0o--

19 MS. WHYNOT: Researchers from UC San Diego have
20 recently published a paper showing that there have been
21 quite an exponential rise in the concentration of this
22 manmade gas in the atmosphere over the last 30 years or
23 so. And the production is expected to increase as more
24 industries, such as solar panels and flat screens, use
25 this chemical in their operations.

1 --o0o--

2 MS. WHYNOT: Also, this is the second highest
3 global warming potential. As you can see, it also has a
4 very long atmospheric life. It's not as bad as SF-6, but
5 it's kind of a number two on that radar screen.

6 And another researcher from UC Irvine has
7 published an article last year that they basically project
8 that impacts of NF-3 could be higher than those of SF-6 in
9 terms of its impact on climate change.

10 Next slide, please.

11 --o0o--

12 MS. WHYNOT: In the past, as regulators, our
13 agency and others, have often moved people from one
14 compound to another. And we often learn later there's
15 better information or new information where that wasn't
16 such a great idea.

17 An example is you've recently moved dry-cleaners
18 out of perchloroethylene, which is an air toxic. And we
19 moved them into that chemical, because we wanted them to
20 get out of using Stoddard solvent, which is a high VOC.

21 So in this case, we have information about NF-3,
22 and I'm just suggesting that it might be more prudent to
23 make a pollution prevention approach, at this point,
24 rather than have to go back and maybe address it next time
25 you look at the Scoping Plan or in future regulations.

1 --o0o--

2 MS. WHYNOT: The environmental tradeoff I spoke
3 to is that when you use NF-3, it's introduced into these
4 cleaning chambers, either at high temperature or high
5 temperature is produced and it produces hydrogen fluoride,
6 which is a very acutely hazardous compound.

7 And so the question when I read the staff report
8 to me was, why would you switch from something that's
9 really bad to something else that's still very bad and
10 then you've got these trade offs.

11 The other option -- next slide, please.

12 --o0o--

13 MS. WHYNOT: The staff report listed three other
14 chemicals that could be used. The staff tells me that I
15 shouldn't worry about this too much, because some of the
16 other chemicals are drop-in replacements. They're less
17 expensive. There won't be as much capital cost outlay,
18 because they won't have to replace their equipment or
19 upgrade this.

20 But I just want to, for your consideration today,
21 recommend that maybe it would be better to specify in this
22 regulation that you don't want new users to go to this
23 chemical or to allow people to move into this chemical.

24 And then also to consider the existing users over
25 some period of time, maybe they should transition to

1 something that would be better for the environment.

2 And I apologize for bringing this issue up very
3 late in the development process, but I felt it was
4 important to at least raise this question and see what
5 your direction would be to staff.

6 Thank you.

7 CHAIRPERSON NICHOLS: Thank you.

8 It is kind of a last minute change of the rule.
9 I guess I have a question about NF-3 and what its
10 regulatory status is for our purposes. I mean, how do we
11 deal with NF-3?

12 MEASURES ASSESSMENT BRANCH CHIEF FRY: We are
13 including it as one of the regulated pollutants under our
14 regulation, so they will have to consider the emissions
15 use of that in complying with our regulation.

16 And we did consider potential toxicity. So we
17 talked to all the facilities that use NF-3 and even ones
18 that don't use NF-3. They all have control equipment to
19 abate HF emissions. And NF-3 provides 95 percent
20 reduction in greenhouse gas emissions.

21 The highest user of NF-3 that emits the greatest
22 amount of HF has emissions that are 80 percent below the
23 trigger level that the districts have for toxicity for
24 hydrogen fluoride.

25 CHAIRPERSON NICHOLS: But they're expressing

1 concern that because of this rule, there might be
2 incentive for people to use more, as I understand it.

3 MEASURES ASSESSMENT BRANCH CHIEF FRY: Even if
4 folks used more, all of the facilities that don't use NF-3
5 now currently have control technology for HF, because the
6 other gases have the potential to emit HF as well. And
7 OSHA has a very stringent standard of three ppm. And so
8 virtually every facility in the state has control
9 equipment to control HF emissions.

10 CHAIRPERSON NICHOLS: But with respect to a
11 facility which is now using it or now emitting it, there
12 is a potential that there could be an increase in those
13 emissions?

14 MEASURES ASSESSMENT BRANCH CHIEF FRY: Not -- no,
15 because they already have control equipment for it.

16 STATIONARY SOURCE DIVISION CHIEF FLETCHER: I
17 think the -- this is Bob Fletcher.

18 I think that for those facilities that are
19 already using NF-3, they're in compliance. They wouldn't
20 need to do anything else.

21 I think the issue is for those that are looking
22 to reduce their emissions from another gas, where they're
23 using a very high volume and very high mass of that gas at
24 a -- you know, at half the GWP of NF-3, NF-3 is so
25 effective that they can replace the amount of gas they're

1 using and comply.

2 NF-3 is a very expensive gas relative to the
3 other gases. But they can -- you know, it's really, I
4 think, a replacement for other gases where they can
5 improve the efficiency. The operations use less gas, but
6 it's a much more effective gas than --

7 CHAIRPERSON NICHOLS: So have you done some sort
8 of a screening assessment to satisfy yourself that this is
9 not a problem?

10 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Yes,
11 in cooperation with the -- looking at what the Bay Area
12 District has done in their toxics new source review and
13 the controls that have been put on that are better than 99
14 percent effective at reducing HF emissions.

15 CHAIRPERSON NICHOLS: Okay. I take it you're the
16 next witness.

17 MR. BALLIS: Yes.

18 CHAIRPERSON NICHOLS: Okay. This is our second
19 and last witness from NEC.

20 MR. BALLIS: Good morning, Chairman Nichols and
21 members of the Board.

22 My name is Gus Ballis. I'm the manager of the
23 safety and environmental group at NEC Electronics,
24 Roseville.

25 We have, you know, already submitted a comment

1 letter.

2 I should have brought some water up here.

3 We still have some very serious concerns about
4 the proposed regulations, despite the fact we've been very
5 active in trying to work with the staff in modeling this
6 regulation.

7 I do want to point out at the beginning, even
8 though I would like to thank the staff for all the effort
9 they put into it, I think it's misleading to say that
10 industry is participating in the rule making, to the
11 extent that we made many comments which we feel have not
12 affected how this regulation has been written. I'd like
13 to go through some of those this morning for you.

14 Our more important concern is that to target .18
15 million metric tons of CO2 equivalent reduction in the
16 deadlines for meeting this target are far too aggressive
17 for this industry.

18 The financial impact on the semiconductor
19 industry is going to be severe, and it's going to affect
20 our ability to be competitive in the global market. This
21 is because international groups, such as the World
22 Semiconductor Council, have targeted only a ten percent
23 emissions reduction over a ten-year period versus the 56
24 percent reduction over a two-year period being sought by
25 this regulation.

1 This high cost of abatement, I can't emphasize it
2 enough, is very high, is going to adversely affect
3 California's semiconductors -- thank you -- in order to be
4 competitive.

5 NEC feels it's reasonable to target 25 percent
6 reduction from the 2006 levels by January 1st, 2012, and
7 then to take another 25 percent and complete that
8 incrementally over three-year periods by the deadline --
9 AB 32's deadline of 2020.

10 This would require ARB to modify the
11 semiconductor industry's emission reduction target from
12 .18 to .45. And I won't go into a lot of detail on that.
13 In my written comments I'm submitting to you, I provided a
14 matrix for you for that.

15 In considering the current economic recession,
16 it's going to take several years to obtain necessary
17 capital for this expensive abatement equipment. I would
18 like to point out today that NEC currently is losing --
19 the Roseville site alone, because of the current
20 conditions right now, we're losing millions of dollars per
21 month.

22 Please note that the technology for so-called
23 end-of-pipe abatement systems actually exists, and the
24 report discusses that. It can only be completed by
25 manifolding together several smaller thermal abatement

1 units and try to patchwork it together. And then to
2 actually create -- doing that actually creates other
3 global warming gases.

4 The most promising technology stack actually
5 condensed these gases that we're using to get that out of
6 that and recovered without creating other global warming
7 gases.

8 That next thing I'd like to discuss is that using
9 the 2006 as a base year completely ignores our emission
10 reductions --

11 CHAIRPERSON NICHOLS: Your three minutes are up.
12 We do have your written testimony. If you'd like to just
13 wrap up, please, I'd appreciate it.

14 MR. BALLIS: Okay. I notice you gave other
15 people more time though.

16 CHAIRPERSON NICHOLS: Well, actually we committed
17 an error, because the clerk didn't turn the timer on. So
18 if you're feeling victimized, go ahead, but please wrap
19 up.

20 MR. BALLIS: Okay. I'll at least skip to the
21 last page then and go to my summary.

22 Considering our serious concerns, it is our hope
23 that ARB will reassess the economic impact that this
24 proposed regulation will have in the California
25 semiconductor industry.

1 AB 32 has two key requirements for achieving the
2 maximum technology -- reductions to maximum technologies
3 feasible through cost effective reductions. We feel that
4 this is not being addressed through this proposed
5 regulation.

6 AB 32 provides ARB the ability to utilize
7 flexible compliance schedules. And, again, we feel that
8 the regulation is not providing that to us.

9 I want to tell you that as a company, NEC
10 Electronics does not dispute the science that global
11 warming is occurring. Our past efforts and our future
12 efforts are reducing the emissions of global warming gases
13 clearly demonstrate our commitment to the environment.

14 If production occurs as we would expect, this
15 regulation will mitigate and, in fact, will exacerbate a
16 problem that has a global effect.

17 Another facility in another part of this planet
18 will give a lot of business that will inevitably be forced
19 out of California by this proposed regulation. And it
20 will likely be a company in a third-world country that is
21 making a minimal effort to reduce these emissions.

22 ARB has a goal and opportunity to be a world
23 leader in writing a regulation to reduce emission of gases
24 that cause global warming for this industry.

25 I'd also like to point out that this reduction

1 that you're targeting is less than one-half of one percent
2 of the total goal.

3 CHAIRPERSON NICHOLS: I'm going to --

4 MR. BALLIS: We respectfully urge the Board to
5 reject this proposed regulation and direct the ARB staff
6 to form a joint committee with industry representatives to
7 rewrite this regulation so that it meets the requirements
8 of AB 32 and addresses the concerns that we have
9 expressed.

10 Thank you.

11 CHAIRPERSON NICHOLS: Thank you.

12 I think the Board has a couple of questions which
13 is going to extend your time a little bit.

14 So we'll start with Mayor Loveridge.

15 BOARD MEMBER LOVERIDGE: Could you help me. I
16 understand the brief you offered, but your colleagues are
17 not here.

18 I guess I would ask why is your company different
19 than other semiconductor companies? So if you could
20 frame --

21 MR. BALLIS: We are the largest affected
22 stakeholder by this regulation. This regulation is going
23 to -- you're probably going to get 25 to 30 percent of
24 reduction out of NEC electronics alone. We've tried to
25 detail why that has occurred.

1 I don't believe that we're a bad actor. We've
2 achieved a 30 percent reduction through the MOU agreement
3 with the EPA. We've been one of those three active
4 companies with it. We plan to do more reductions. But
5 the complexity of our product and the fact that we're a
6 very large fab means that we're going to put out and use
7 more PFC gases.

8 But as we pointed out to the staff, we are not
9 one of those who plans to be status quo. As we move
10 forward, we have planned reductions, but not as fast as
11 what they're asking us to do. And as I pointed out with
12 the current economic situation hitting industry so hard,
13 the best thing we can do is to lower the target and spread
14 it out over two-year periods. Don't ask for so much in so
15 short a time.

16 BOARD MEMBER LOVERIDGE: I understand your
17 argument. Just the lack of testimony from others is quite
18 striking.

19 MR. BALLIS: Well, they've been relying on a
20 group called the Semiconductor Industry Association. We
21 are not a member of that group. And so they are actually
22 representing the bulk of the companies being affected by
23 this, and they have provided comments.

24 CHAIRPERSON NICHOLS: So your assessment would be
25 if we go ahead with the rule as planned, what would your

1 company do to comply?

2 MR. BALLIS: We would do whatever is necessary to
3 comply. But right now, we're potentially on the chopping
4 block as to whether or not they're going to keep us or
5 pull our production back to Japan.

6 CHAIRPERSON NICHOLS: Do you have other
7 facilities in the United States or --

8 MR. BALLIS: No, Chairman. We're the only fab
9 outside of Japan for NEC Electronics.

10 CHAIRPERSON NICHOLS: I see. And in Japan are
11 there no requirements of a similar nature?

12 MR. BALLIS: Good question. They're a signatory
13 of the Kyoto Protocol. They have made great efforts. But
14 in Japan, the Government actually provides grants to
15 assist them in meeting these goals.

16 CHAIRPERSON NICHOLS: Okay. Thank you.

17 Do you want to now raise your serious concerns?

18 That completes the testimony.

19 Thank you.

20 MR. BALLIS: Thank you.

21 BOARD MEMBER SPERLING: Well, this is a serious
22 concern also, but I have a broader serious concern.

23 CHAIRPERSON NICHOLS: Okay.

24 BOARD MEMBER SPERLING: We can come back to that
25 particular issue.

1 But ARB has a very renowned history of doing a
2 great job of developing rules to deal with specific
3 pollutants in specific activities. And as we move into
4 the greenhouse gas climate world, we're dealing with a
5 more complex world and a more complex set of activities.

6 And, well, to make a long story short, what I'm
7 going to suggest -- and I'll elaborate just a bit on it --
8 but what I'm going to suggest is that in the future, when
9 we address some of these climate greenhouse gas rules,
10 policies, that we also describe, even analyze, alternative
11 approaches to achieving the same reduction.

12 And in this particular case, it would be, you
13 know, an obvious alternative is to put a fee on the gases.
14 And that might turn out to be a much simpler way to do it.
15 Economists, in theory, would definitely be more cost
16 efficient. In practice, I don't know.

17 But I think until we understand better this
18 climate world, and maybe forever, that we do pay specific
19 attention to the different approaches and why a particular
20 approach is being chosen and another one is rejected.

21 And, you know, because I kept thinking, you know,
22 as we went through this one -- and so I'm generalizing
23 this to all of the policies that we address in this
24 climate world in the future.

25 And it would -- just as an example in this case,

1 it would -- with this idea of a carbon fee or carbon tax,
2 it would address most of the concerns of both of the
3 speakers here, because it would give them -- you know, it
4 would provide flexibility for how the targeted company can
5 respond. And we wouldn't get tied up in coming up with
6 specific rules about, you know, a company is affected this
7 way and these are concerns. And, you know, we're going --
8 all the specific actions affected by it.

9 So, you know, perhaps that was already done and
10 that was a decision that was made. And I'm not
11 questioning it in this particular case.

12 But I guess -- and I'd be interested in whether
13 other Board members feel the same way. I would like to
14 see -- you know, like when we get to the low carbon fuel
15 standard, which I've been very involved in, you know. I
16 do think the low carbon fuel standard the way it's
17 designed is the best approach. But there are others that
18 argue that, you know, there are other approaches. I would
19 at least think that we should acknowledge those, you know,
20 just like we talked about with cap and trade a moment ago.

21 I think that will provide more credibility to
22 what we do. It will ground us more in the science of what
23 we're doing and make a lot of people feel more comfortable
24 with where we're going.

25 CHAIRPERSON NICHOLS: Except maybe the authors of

1 AB 32 who wrote it in a different way, because they
2 clearly wanted us to put out a group of regulations that
3 was -- I mean, that's pretty obvious that -- I'm not
4 saying that's the only consideration. I think the
5 legislative intent is very clear there.

6 BOARD MEMBER SPERLING: I can see the point, but
7 we are doing cap and trade. We did have a Market Advisory
8 Committee. And you know, I'm not saying that in every
9 single case, you know, how it should be done. I think we
10 should look at some of these cases and see if there's a
11 better way of doing it.

12 CHAIRPERSON NICHOLS: Well, I wouldn't object to
13 having the idea of a fee being an alternative -- you know,
14 part of the alternative analysis to see if that would be a
15 different way of doing things. I think that makes sense.
16 I don't know if staff disagrees with that.

17 EXECUTIVE OFFICER GOLDSTENE: Well, we have to
18 look at alternatives for every rule that we put forward.
19 And the staff could explain which alternatives were looked
20 at for this rule if you'd like.

21 But in addition, we are looking at a regulation
22 that would put a fee on high global warming potential
23 gases, which we hope to bring to the Board later this
24 year.

25 CHAIRPERSON NICHOLS: In addition?

1 EXECUTIVE OFFICER GOLDSTONE: In addition to this
2 one.

3 I don't know if Bob or Barbara you want to add
4 anything.

5 CHAIRPERSON NICHOLS: Because we think we need
6 both.

7 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Yeah.
8 When we looked at this measure, we've been tracking this
9 one for quite a while. And it is sort of looking at an
10 industry sort of sector and what would make sense and is
11 it consistent with their normal business practices to
12 incorporate these sorts of modifications.

13 I think when you get into broader categories and
14 wider distribution of the gases where we're not dealing
15 with a confined industry, but gases that are used in a lot
16 of different types, it perhaps isn't quite as -- you know,
17 a tax or fee is a better option. And I think probably 25
18 percent of reductions from this category are currently
19 targeted for fees. But we certainly can look at that
20 option as we go through.

21 These are the discrete early actions. I think if
22 we looked at the list that was put up there, most of those
23 are in place. There's, I think, probably four or five
24 other rules that are coming down, and we can look at
25 carbon taxes as an option -- or fees. Sorry.

1 CHAIRPERSON NICHOLS: Well, the point that I
2 think is being raised here is tied to the testimony by
3 NEC, because it's very clear that the cost of compliance
4 with these rules for some is going to be nothing, because
5 they're already in compliance. And the cost of compliance
6 for others is going to be very high.

7 And that's kind of a classic situation in which
8 you would like to have a market-based approach as long as
9 you were able to get the overall compliance.

10 I had sort of a different concern, which may turn
11 out to be irrelevant because of what's happening with the
12 industry.

13 But when I looked at this and saw the
14 segmentation, it seemed to me what we were setting up was
15 a clear situation where smaller companies would be able to
16 expand essentially for free, while larger companies pay a
17 heavier burden. And that's a social policy that often
18 gets built into regulations.

19 You know, we have a mandate to look at "small
20 business" and to be sensitive to the fact that small
21 business is an important part of our economy and where
22 most of the start-ups and innovations -- not innovation,
23 but certainly most of the new business creation is in the
24 small business sector. And it's -- but nevertheless, I
25 think it's something that needs to be really questioned in

1 every sector, whether what you're trying to do is to
2 punish people just for being big. That doesn't seem to me
3 to be the way to get the kind of results that we want
4 necessarily.

5 So however, as it turns out, the way this rule is
6 structured, it probably doesn't have those perverse
7 effects. And we just end up in a situation where one
8 California company does appear to suffer a
9 disproportionate share of the burden. There's some
10 justification for that I think.

11 I don't think we really heard an explanation for
12 why they hadn't been able to do what the others in their
13 category had been able to do on a voluntary basis. So I
14 don't want to get carried away by sympathy here, but you
15 know, it's a difficult dilemma, I think, to figure out how
16 to balance all those things.

17 Questions? Comments?

18 STATIONARY SOURCE DIVISION CHIEF FLETCHER: I was
19 going to make a comment on -- Chairman Nichols.

20 CHAIRPERSON NICHOLS: There you are. Sorry.
21 You're not a Board member, but that's okay.

22 STATIONARY SOURCE DIVISION CHIEF FLETCHER: When
23 you look at the three tiers and if you look at the cost
24 breakdown for the three tiers, the first tier clearly has
25 the most emissions and clearly the most cost. But if you

1 look at just the breakdown, it's about 60, 65 percent of
2 cost and 65 percent of the emission reductions --

3 CHAIRPERSON NICHOLS: It's proportionate to their
4 contribution.

5 STATIONARY SOURCE DIVISION CHIEF FLETCHER: All
6 the way down.

7 CHAIRPERSON NICHOLS: I agree. There's a
8 rationale basis for that, for that distinction having been
9 made.

10 Well, here we are.

11 Yes?

12 BOARD MEMBER TELLES: When I was going through
13 the prepared document, there's something hidden in there
14 that kind of struck my eye. And that when you asked the
15 industry whether this was going to affect them
16 economically or whether they would comply with this rule,
17 there was a statement in there that said -- and also
18 asking them would that drive industry out of California,
19 there was a statement in there that said, no, because the
20 ones who are going to leave have already left.

21 Now, what my concern is silicon leaving Silicon
22 Valley. If you look at the numbers, California represents
23 something about five percent of the worldwide silicon
24 industry or semiconductor industry.

25 I was Googling this morning trying to refresh my

1 memory what semiconductor chips actually do from a
2 physical point of view. And what came up first was the
3 semiconductor industry, 20 percent of their revenue is
4 down. A \$248 billion industry, which is now down to about
5 a \$180 billion industry.

6 Obviously, this is going to affect the industry
7 in general. The rule was created in 2005, 2007 when the
8 industry was booming and the economics still apply now.
9 That's one of my questions.

10 The other question is where did the industry go
11 in the United States? What states are it in? And do
12 those states have a similar regulatory pattern that we are
13 creating here?

14 And then my third question is when rules like
15 this are developed, do you send off to EPA a request that
16 a similar rule be created throughout the United States?

17 And the reason why I ask that is because there's
18 a voluntary program that EPA has. Only two California
19 companies are involved in that voluntary program. I
20 wonder how many other companies in the United States are
21 involved in that voluntary program to reduce emissions
22 from these sources.

23 So it's a whole complex little bit of thinking
24 here that I share the same concern that Mr. Ballis has,
25 that we may be driving out a major industry for this

1 state, or if not driving it, not making the state a place
2 where that industry would want to reinvest.

3 And I would like comments from the Board or even
4 Mr. Ballis if he is able to comment on what I'm asking, if
5 he's still here.

6 MEASURES ASSESSMENT BRANCH CHIEF FRY: We
7 discussed with the industry whether or not they thought
8 they would be leaving as a result of this regulation. And
9 the indication was no, they didn't think that it was going
10 to cause them to leave.

11 Many of the facilities in the Silicon area, they
12 are already in compliance. They have been in compliance
13 since 2006. So none of them have expressed negative
14 comments about our proposal.

15 There are about 20 operations throughout the
16 country that are participating in the voluntary program.
17 Three of those are in California.

18 BOARD MEMBER TELLES: Do you know what percentage
19 of the industry that is though?

20 MEASURES ASSESSMENT BRANCH CHIEF FRY: Of the
21 total production?

22 BOARD MEMBER TELLES: Or percentage of emissions
23 would be more important.

24 STATIONARY SOURCE DIVISION CHIEF FLETCHER: Well,
25 just for context, there's three of the facilities that are

1 participating in California out of the 85 that have to do
2 reporting and of the 28 that are affected by the rule. So
3 it's a fairly small percentage in California.

4 If we assume that there's about ten percent of
5 the emissions in California, then the U.S. is about three
6 tons -- three million metric tons. So it's a fairly small
7 percentage. And the reductions they're getting from the
8 national program, I think, are on the order of maybe ten
9 percent.

10 Now some of the companies obviously have done
11 much better than that. But I don't think that the
12 national program has resulted in real significant emission
13 reductions on either a California or nationwide basis.

14 MEASURES ASSESSMENT BRANCH CHIEF FRY: Two out of
15 the three companies that are in the voluntary program
16 already comply with our proposal.

17 CHAIRPERSON NICHOLS: Thank you.

18 MR. BALLIS: Can I respond?

19 CHAIRPERSON NICHOLS: You can.

20 MR. BALLIS: Okay. As I recall, what SIA has
21 told me before is that the companies that have been
22 participating in the program represent about 50 percent of
23 the production in the United States and maybe concurrently
24 50 percent of the potential emissions.

25 One thing to point out is that -- very important

1 to point out is that even though it's targeted at ten
2 percent emissions reduction from 1995 to 2010, is our
3 period, production has tripled anywhere from three to five
4 times amongst those companies.

5 Us, for instance, between 1995 and our peak more
6 than quadrupled. So it's sort of misleading to say it's
7 only a ten percent reduction. When you do the total math,
8 and you do it correctly, it's more on the order of 50 to
9 60 percent.

10 CHAIRPERSON NICHOLS: Okay. Thank you.

11 I'm going to shut this off at this point, if I
12 may, I mean, for a simple reason here. We are operating
13 in a legal structure, which we are really not free to
14 ignore, that requires us to reduce emissions over
15 projections and these are what these rules are designed to
16 do.

17 There's a lot of changes that are going to happen
18 in the economy. Businesses are going to go up and down.
19 Usages of chemicals are going to go up and down in ways
20 that we cannot entirely predict. We can certainly do what
21 we can to avoid making matters worse. And I think we have
22 an obligation to do that.

23 But we also have an obligation to act, which is
24 to, you know, adopt regulations that will put in place the
25 reductions that are needed. That is the task that's been

1 set before us in AB 32.

2 So I'm open to suggestions as to how to change
3 this rule, if people want to amend it at this point, or
4 send direction to the staff about how to move forward in
5 terms of implementing this or other rules.

6 I think we have a consensus on the Board in favor
7 of Dr. Sperling's suggestion that in each of these
8 upcoming rules we should be looking at an alternative path
9 of an emissions fee and what type of fee it would require
10 to accomplish the result and whether it could, in fact, be
11 implemented.

12 But that's not something that I think we can do
13 at this moment anyhow.

14 So Mr. Loveridge.

15 BOARD MEMBER LOVERIDGE: Don't want the staff to
16 become advocates for NEC, but as you listen to what they
17 regard as their predicament, what comment would you make?
18 I'm sure you sat at the table listening to them.

19 MEASURES ASSESSMENT BRANCH CHIEF FRY: We did
20 discuss, as a matter of fact, the two-year extension for
21 compliance was at NEC's request for operations that are
22 retooling and expanding. So that was the amount of time
23 that they indicated that they would need to complete the
24 retooling process, and they requested that two-year
25 extension.

1 And so that's what's in the proposal for
2 facilities such as them. And we use their cost data to --
3 when we estimated the \$21 per ton, we used the cost data
4 for their facility that they had provided to us.

5 CHAIRPERSON NICHOLS: Okay. Mrs. Riordan.

6 BOARD MEMBER RIORDAN: I'm ready to make some
7 sort of a motion, but I think we have to do ex partes.

8 CHAIRPERSON NICHOLS: Yes, we do. And we also
9 need to hear from the Ombudsman.

10 Our Ombudsman who we're calling on here today,
11 we're calling on for the last time. Kathleen Quentin is
12 leaving the Board to pursue other interests in her life.

13 But I want to say before she actually does her
14 thing here that I know we all have been appreciative of
15 your presence and your efforts over the years and really
16 want to thank you for having been an important part of
17 this process. And we wish you the best.

18 OMBUDSMAN QUETIN: Thank you very much. It has
19 been an absolute honor and pleasure to have been the
20 Ombudsman for almost ten years. And I've learned a lot.
21 I've made wonderful friends both within the Agency and I
22 love all of the Board members. And so I'm going to miss
23 you.

24 But I'll be around. And one of ten things that
25 excites me the most -- well, one of the things -- is that

1 I'm going to be able to be more involved in my son's
2 speech and debate team as a coach and judge. And a lot of
3 the events are in the daytime, so I can run my own
4 schedule. But I still plan to do consulting and helping
5 people get through the regulations, get their businesses
6 in compliance.

7 So I'll still be around.

8 And as far as the Ombudsman's statement for this
9 particular Board item, it was covered in the staff
10 presentation entirely. So I don't think I need to repeat
11 it all for you.

12 CHAIRPERSON NICHOLS: All right. Thank you very
13 much.

14 OMBUDSMAN QUETIN: Thanks.

15 CHAIRPERSON NICHOLS: Now we can do the ex partes
16 starting down at the end here.

17 Does anybody have any ex partes they want to
18 disclose?

19 BOARD MEMBER YEAGER: I had an e-mail exchange
20 with staff members from the Silicon Valley Leadership
21 Group on this issue.

22 CHAIRPERSON NICHOLS: Okay. Anybody else?

23 And can you tell us the substance of it? You
24 have to tell us if you learned anything new or --

25 BOARD MEMBER YEAGER: No. They just had two

1 questions about the reporting period and how we would
2 affect R&D. And was able to get answers to those two
3 questions.

4 CHAIRPERSON NICHOLS: Okay. Thank you.

5 BOARD MEMBER D'ADAMO: I have a question.

6 CHAIRPERSON NICHOLS: Hang on just a second.

7 We're still continuing down the end here I thought.

8 BOARD MEMBER TELLES: I don't have any ex partes.

9 I just wanted to ask one other question before you totally
10 close things.

11 CHAIRPERSON NICHOLS: You have follow behind Ms.
12 D'Adamo.

13 I don't have any ex partes either.

14 All right.

15 BOARD MEMBER D'ADAMO: In light of the testimony
16 and some of the questions, did the group raise any
17 concerns in their conversation with you?

18 BOARD MEMBER YEAGER: No. And I was a little
19 surprised. Again, they really -- they were aware of it.
20 There were companies that belonged to them that were part
21 of the technical group that you were looking at. And the
22 fact that they really only had the concerns about R&D.
23 And when they had to report, they were under the
24 impression it was going to be monthly, which they saw as
25 burdensome. But it really is yearly. And so I was again

1 a little surprised they were uncomfortable with it.

2 CHAIRPERSON NICHOLS: Okay.

3 BOARD MEMBER TELLES: This is somewhat addressing
4 your comment. I understand that AB 32 requires us to meet
5 certain emission goals, and that's plenty understandable
6 by the statute.

7 But as the testimony today indicates, you know,
8 this particular rule represents less than one percent or
9 one percent of the total emissions from this industry
10 worldwide.

11 I really think we need to leverage whatever we do
12 here to affect federal policy, even if it's a letter to
13 the EPA Director in saying to California pass this
14 regulation. We would request that EPA consider this to be
15 national, because whatever we do here, if we don't
16 leverage our position, it's not going to get us to our
17 real goal, which is reducing greenhouse gases. It would
18 be foolish for us to vote on this and not communicate this
19 to EPA. And EPA hopefully communicates to whatever
20 international organization controls these emissions.

21 CHAIRPERSON NICHOLS: That's a good point.

22 Staff have any problem with doing that?

23 EXECUTIVE OFFICER GOLDSTENE: I think that's a
24 good idea.

25 Of course, EPA, under the new administration, is

1 taking a whole new look about what their role should or
2 could be in the realm of climate change in general. But
3 on this specifically, we can send a letter.

4 CHAIRPERSON NICHOLS: I think rather than taking
5 it for granted that they know what we're doing, it's a
6 good idea to specifically draw it to their attention and
7 seek their support. And you're right, we have a much
8 better chance of getting a favorable response than we
9 might have before. So that's all good.

10 All right. Do I have a motion to approve the
11 rule?

12 BOARD MEMBER RIORDAN: Yes. Madam Chair, I would
13 move the approval of the regulation. And noting that
14 staff has indicated that the additional two years has been
15 granted to the industry that came before us. So I think
16 we've tried to reach out, and we want them to comply as
17 others are complying today.

18 BOARD MEMBER D'ADAMO: Second.

19 CHAIRPERSON NICHOLS: All right. All those in
20 favor signify by saying aye?

21 (Ayes.)

22 CHAIRPERSON NICHOLS: And opposed?

23 All right. Thank you very much, everybody.

24 Thanks, staff. These things are tough as we've seen.

25 BOARD MEMBER SPERLING: Chairman Nichols, having

1 done that, I have another big idea here.

2 CHAIRPERSON NICHOLS: Oh, great.

3 (Laughter.)

4 CHAIRPERSON NICHOLS: Could you please stop
5 having ideas? We may have to look for less intelligent
6 Board members.

7 (Laughter.)

8 CHAIRPERSON NICHOLS: I took back everything I
9 said before about --

10 BOARD MEMBER SPERLING: We're at the early
11 process of doing so many actions that I think it's
12 important to think through what we're actually doing.

13 So here's another idea. And that is that
14 inspired by the vote and the discussion is that maybe in a
15 lot of these actions, that we should be thinking about a
16 two tier target and compliance schedule. In the sense of
17 always, you know, being still within the bounds of AB 32,
18 but in the sense that the EU, for instance, they say that
19 we will adopt a certain target. And then if everyone
20 else -- or some percentage of other countries also adopt
21 it, then we're going to adopt an even more aggressive one.

22 And maybe we should be thinking about that,
23 because you know, we're talking about global pollutants.
24 We're not talking about California pollutants. And you
25 know, this might be a case where we can say, okay, this is

1 the target for, you know, the requirement for 2012, and
2 this much reduction. But if EPA also -- but if EPA also
3 adopts something at least as strong, then, you know, we'll
4 take it a little further or a little faster or somehow,
5 you know, make it contingent on other states or Feds or
6 international agreements to tie it in with what we're
7 doing more explicitly.

8 So I'm not sure if there's any specific proposal
9 except to think about that for future rule making.

10 CHAIRPERSON NICHOLS: Okay. Think about it.

11 I'm directing the Executive Officer who's nodding
12 his head.

13 EXECUTIVE OFFICER GOLDSTENE: I hear you. I
14 think that's a good point. Internationally, of course,
15 Copenhagen is coming up at the end of this year to look at
16 everything all at once. Again, we're working with the
17 administration.

18 But as we move forward on the different rules, we
19 should keep this in mind. Certainly on Pavley, we're
20 looking now to an international standard that would be as
21 good as, if not better. But we want to make sure we
22 reserve the right to go stronger if we -- in the future.

23 Is that what you're thinking? Or are you looking
24 for an automatic trigger? That's what -- I'm not sure.

25 BOARD MEMBER SPERLING: I'm thinking more of an

1 automatic trigger. And Pavley is a good illustration
2 because in that case, you know, 40 percent of this market
3 of the states out there -- 40 percent of the state for
4 markets are embracing -- are adopting Pavley also, which
5 gives it more credibility for being aggressive.

6 CHAIRPERSON NICHOLS: All right. I think, you
7 know, we're going to keep being tested every month with
8 these things, because California is really moving into
9 uncharted territory here. And we're trying to do things
10 with our sort of typical regulatory precision and approach
11 that no one has also done before. And I think we have to
12 constantly be testing it against what might be possible,
13 given the global scale of the problem that we're actually
14 trying to address.

15 But I think there's value to showing that there
16 are mechanisms that can be used, even if it turns out that
17 there are faster, cheaper, smarter ways to do it all. If
18 we could just get our nation and the world engaged in all
19 of these activities as well.

20 Okay. Next item is another rule that deals with
21 sulfur hexafluoride emissions. This one complements the
22 one that we just adopted. It's designed to reduce
23 greenhouse gas emissions used in non-electricity and
24 non-semiconductor manufacturing and includes some
25 recordkeeping and reporting requirements.

1 And Mr. Goldstein will introduce this item.

2 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
3 Nichols.

4 This regulation was identified by the Board as a
5 Discrete Early Measure also in October 2007.

6 The proposed regulation reduces greenhouse gas
7 emissions associated with non-electricity and
8 non-semiconductor manufacturing, through a phase out of
9 sulfur hexafluoride in recovered application.

10 Emissions of these gases are projected to
11 increase significantly in the near future and therefore
12 it's important to start seeking reductions through the
13 regulation process now.

14 Ms. Elizabeth Scheehle from the Research Division
15 will provide the Board with details of the staff's
16 proposal.

17 Elizabeth.

18 (Thereupon an overhead presentation was
19 Presented as follows.)

20 MS. SCHEEHLE: Thank you, Mr. Goldstene.

21 Good morning, Madam Chair and members of the
22 Board.

23 We are pleased to bring you our proposed
24 regulation to reduce emissions of sulfur hexafluoride from
25 non-electricity and non-semiconductor manufacturing.

1 --o0o--

2 MS. SCHEEHLE: This measure was identified by the
3 Board as an AB 32 Discrete early action in 2007.

4 But before we describe a regulatory proposal, we
5 would like to share a brief overview of sulfur
6 hexafluoride to put in context the role that it plays in
7 the climate protection effort.

8 This introduction will be followed by background
9 information describing the need for the proposed
10 regulation, the regulatory requirements, the anticipated
11 environmental benefit and economic impacts, and our plan
12 for implementation. I will conclude with staff's
13 recommendation for approval.

14 --o0o--

15 MS. SCHEEHLE: Addressing the emissions of sulfur
16 hexafluoride, or SF-6, is particularly important. SF-6
17 has a lifetime of 3,200 years and the highest global
18 warming potential of any gas evaluated by the
19 intergovernmental panel on climate change.

20 Although atmospheric concentrations of this gas
21 are still low, concentrations have been steadily
22 increasing at a rate of approximately five percent per
23 year since the late 1990s. Additionally, given the long
24 lifetime, emissions today will still be contributing to
25 climate change in the year 5209 AD.

1 The uses covered in this regulation are generally
2 admissible and could not be captured and recycled. Meaning
3 that each year's emissions are practically permanent and
4 cumulative.

5 Finally, the global warming potential of SF-6 is
6 23,900. Meaning that emitting one pound of SF-6 is
7 equivalent to emitting ten tons of CO2, or driving around
8 the world once.

9 An ounce of SF-6 is equivalent to 1.5 barrels of
10 oil consumed. Although small, the emissions are growing
11 and we ought to act now to stop this irreversible addition
12 to the atmosphere.

13 --o0o--

14 MS. SCHEEHLE: There are three early action
15 measures that address SF-6 emissions. The semiconductor
16 manufacturing regulation, which you just heard, includes
17 SF-6 as well as other high GWP gases.

18 A regulation on SF-6 from the electric utility
19 sector will be brought before the Board later this year.
20 Even with these two regulations, there are additional
21 uncontrolled SF-6 emissions. Given the high GWP, ARB
22 investigated those uses and proposed an additional early
23 action based on staff's findings.

24 The proposed action covers uses of SF-6 that are
25 significantly different from those covered by the other

1 two regulations and the available mitigation options are
2 different.

3 This regulation covers the rest of the sources
4 and is a catch-all regulation to ensure that all uses,
5 including new future uses, of this potent greenhouse gas
6 are considered.

7 --o0o--

8 MS. SCHEEHLE: Staff identified four main sources
9 subject to the current regulation. SF-6 is used as a
10 tracer gas, which is a substance that is released in order
11 to detect, measure, monitor, or evaluate flow, leakage,
12 dispersion or dilution characteristics. Tracers are used
13 in a variety of applications.

14 A second use is in magnesium casting. In this
15 application, SF-6 prevents oxidation of the molten metal.

16 Additional uses include military and research
17 applications, potential use in products, and use in
18 medical applications. Some military and research uses are
19 covered by tracer uses.

20 --o0o--

21 MS. SCHEEHLE: The uses covered by this
22 regulation are generally admissible with no opportunity for
23 recover of the gas. In total, emissions are 0.15 million
24 metrics tons of carbon dioxide equivalent.

25 --o0o--

1 MS. SCHEEHLE: I will now describe the proposed
2 regulation to reduce emissions of sulfur hexafluoride from
3 non-semiconductor manufacturing and non-electricity
4 applications.

5 The Board approved this measure as a Discrete
6 early action in October of 2007. Staff then evaluated a
7 spectrum of options, including a performance standard, a
8 fee, and a phase out. Although a performance standard was
9 considered in-depth, the number of diverse types of uses
10 meant that development and enforcement of a performance
11 standard would have been burdensome to both ARB as well as
12 industry and would have significantly lower reductions
13 with modest cost savings.

14 A high GWP fee across all gases has been approved
15 in the Scoping Plan, but staff determined that relying on
16 a potential future fee was not appropriate for the sources
17 being considered since the gas is so potent and long-lived
18 and generally the alternatives available are all under
19 development and the costs are low.

20 Since these uses are generally admissible and
21 alternatives are either already available or under
22 development and cost effective, staff determined that a
23 phase out was appropriate.

24 We expect a cost-effective reduction of 0.1
25 million metrics tons of CO2 equivalent.

1 The regulation will also provide a barrier to
2 future uses of SF-6. SF-6 has been used in tennis shoes,
3 windows, tires, and other products and we want to
4 discourage introduction of new products or operations.

5 This regulation is relevant to other states and
6 could serve as a model. The impact could be larger on a
7 national or global level with U.S. emissions estimated at
8 approximately four million metrics tons of carbon dioxide
9 equivalent and global emissions about 11.57 million
10 metrics tons of carbon dioxide equivalence.

11 --o0o--

12 MS. SCHEEHLE: This slide outlines the components
13 of the regulation. A few uses of SF-6 are exempt from the
14 phase-out directly, including those covered by other
15 regulations or required by other State agencies'
16 regulations. For those uses that are phased out, users
17 can apply for an exemption to the regulation if the use
18 meets pre-specified criteria that will be discussed later
19 in this presentation.

20 All allowed uses that are not covered by another
21 regulation are subject to reporting and recordkeeping
22 components for users, and registration reporting and
23 recordkeeping for distributors of the gas. This component
24 improves the enforceability of the regulation and provides
25 information on how much gas is being used within the

1 state.

2 --o0o--

3 MS. SCHEEHLE: The regulation has a two-step
4 phase-in with tracer gas testing, magnesium sand and
5 investment casting, and military applications scheduled
6 for January 1st, 2013, effective date.

7 A phase out in all other uses will be effective
8 January 1st, 2011.

9 Originally, we had proposed earlier phase out
10 dates, but working with stakeholders revealed the need for
11 additional time to determine needs for purchase of
12 different equipment, if necessary, and additional
13 considerations.

14 I will now describe each sector covered by this
15 regulation.

16 Tracer gas testing is a varied sector with uses
17 ranging from atmospheric transport, characterization of
18 ventilation systems, air and filtration studies, leak
19 testing, characterizing flow patterns, and other uses,
20 including research and military applications.

21 Alternatives are generally available and vary by
22 use. Some alternatives also have a high global warming
23 potential, but still less than half the GWP of SF-6.

24 --o0o--

25 MS. SCHEEHLE: We looked into testing a few hoods

1 in detail, because the current national guidelines from
2 the American Society for Heating, Refrigeration, and
3 Air-Conditioning Engineers, or ASHRAE, requires use of 1.5
4 pounds of SF-6 per test. This is equivalent to driving
5 approximately 40,000 miles.

6 In addition, the California Division of
7 Occupational Safety and Health requires that ASHRAE
8 guidelines be followed to run a fume hood at a lower flow
9 rate, which saves energy.

10 Fume hoods are energy intensive, and in less than
11 six years, more CO2 emissions from energy use will be
12 reduced than used by the SF-6 test.

13 For this reason, ARB has accepted fume hoods that
14 are being tested for energy efficiency. Other fume hood
15 testing with SF-6 is not allowed. We are currently
16 working with ASHRAE and have encouraged them to approve an
17 alternative to SF-6 in their fume hood testing guidelines.

18 Considering the national and international
19 adherence to ASHRAE guidelines, such an approval could
20 have an impact of several million metric tons of carbon
21 dioxide equivalent reductions worldwide.

22 --oOo--

23 MS. SCHEEHLE: SF-6 is used in magnesium casting
24 to prevent oxidation during the casting process. Before
25 SF-6 became widely used, SO-2 was commonly used. New

1 strategies use more diluted concentrations of SO-2 and
2 lessen some of the concerns, such as worker safety.

3 Other alternatives are well proven for die
4 casting, and there have been indications that these
5 alternatives are technologically feasible at sand casting
6 locations.

7 Testing is expected to begin within a few months
8 with cooperation and information sharing between the three
9 sand casters in the state. The timeframe was adjusted to
10 allow for testing to be completed.

11 Additionally, the manufacturers may need to go
12 through a process with parts purchasers to re-qualify the
13 parts. This process could cost additional time and money,
14 and the 2013 timeframe in this regulation should provide
15 this time.

16 --o0o--

17 MS. SCHEEHLE: Other phased-out uses include use
18 in consumer products for military purposes and for
19 research. A phase out in these uses deters future use of
20 SF-6.

21 Some research and military uses may be covered by
22 other sectors, such as tracer testing.

23 Information on military and research applications
24 beyond tracer testing have not been provided. We are
25 working with the military. And the phase-out date of 2013

1 is in line with their assessment of SF use in mitigation
2 plans. At that point, enough information will be
3 available to determine if the exemption is warranted and
4 can be applied for.

5 There are several uses that are exempt from the
6 phase out. First, medical uses are very small and
7 alternatives are inferior and expensive. Staff determined
8 that medical uses should be exempt.

9 A few research needs have been exempted. These
10 include measurement of SF-6 concentrations and associated
11 equipment calibration, research on health impacts of SF-6,
12 and use of SF-6 in testing for alternatives, if necessary,
13 for comparison.

14 Other research applications may be considered on
15 a case-by-case basis. We will describe the exemption
16 process next and believe it is flexible enough for the
17 research community to work with ARB to determine research
18 needs and if alternatives are not viable.

19 --o0o--

20 MS. SCHEEHLE: An exemption process is available
21 for use, subject to the phase out. The applicant must
22 demonstrate that one of two criteria are met.

23 The first is that the use results in reduced
24 greenhouse gas emissions.

25 The second criteria is that there are no

1 alternatives.

2 The process is flexible to allow for a variety of
3 applications. For example, the application can be for a
4 set period of time, for a predetermined amount, for a
5 subset of applicant's usage or for several users. All
6 exemption applications must include a mitigation plan that
7 limits the amount of SF-6 emissions.

8 --o0o--

9 MS. SCHEEHLE: The final component of the
10 regulation is registration, recordkeeping, and reporting.
11 Distributors are required to register with ARB, keep
12 records of sales for three years, and provide an annual
13 report of each sale. The annual report is limited to date
14 and quantity of each sale to each purchaser.

15 In addition, each purchaser must keep records of
16 the annual quantity of SF-6 that they purchase and use.
17 This data is necessary for enforcement purposes and will
18 provide information on the effectiveness of the regulation
19 and the current level of SF-6 emissions.

20 --o0o--

21 MS. SCHEEHLE: The greenhouse gas reduction
22 achieved by the proposed regulation is estimated to be 0.1
23 million metric tons of CO2 equivalent annually. The
24 reductions are lower than current emissions for two
25 reasons. The alternative may have a global warming

1 potential and there are exempt uses.

2 The reduction has a cost effectiveness of \$2 per
3 metric ton of CO2 equivalent.

4 Due to the variety of uses, some businesses or
5 sectors will see higher costs than others. Costs include
6 new equipment and annual costs related to any additional
7 cost of an alternative. Should other states choose to
8 adopt the regulation, as some have expressed, components
9 of the regulation or the regulation in whole are
10 exportable to them as well as the nation.

11 A high GWP mitigation fee in the future would
12 complement our proposal as exempted uses would be
13 subjected to the fee and have an incentive to do further
14 research into alternatives.

15 --o0o--

16 MS. SCHEEHLE: The public process was valuable
17 during the development of this regulation. During the
18 course of regulatory development, staff held three public
19 workshops, two workgroup meetings, and two sub-workgroup
20 meetings targeted at specific sectors.

21 We also benefited from our broad network of
22 national and international stakeholders as we tried to
23 stay abreast of developments.

24 The input from stakeholders allowed staff to
25 develop a sound regulation. Throughout the process, we

1 received public comment on our proposed regulatory
2 language that we believe have been addressed.

3 --o0o--

4 MS. SCHEEHLE: Staff concludes that the proposed
5 regulation will reduce greenhouse gas emissions associated
6 with sulfur hexafluoride from non-utility and
7 non-semiconductor manufacturing.

8 The proposed regulation is both technologically
9 and commercially feasible. It is also cost effective.

10 Staff therefore recommends that the Board approve
11 the proposed regulation.

12 That concludes my presentation. Thank you for
13 your attention.

14 CHAIRPERSON NICHOLS: Thank you.

15 We do have five witnesses who signed up. And
16 just to be clear, we will be putting on the timer and
17 giving people three minutes each.

18 And we'll start with Larry Wong from the UC
19 Office of the President. Welcome.

20 DR. WONG: Good morning, Chairman, members of the
21 Board. My name is Larry Wong. I'm from the University of
22 California Office of the President. I'm the University of
23 California system-wide Environmental Health Safety
24 Manager.

25 The UC system, it's a treasure. It positively

1 impacts every person in the state of California. Through
2 its classrooms and research facilities, UC is able to
3 attract the leading scholars and researchers to educate
4 the leaders of tomorrow. Through our laboratories and
5 innovative research, we dramatically improve the lives and
6 drive the economy for the State of California.

7 The UC system's considered one of the leading
8 public universities in the United States. We're world
9 leaders in terms of research. In one year, the UC system
10 brings over \$4.3 billion of research funds into the state
11 of California. That is approximately ten percent of total
12 academic research dollars in the entire United States.

13 It's through our size, university, and academic
14 excellence which drives the university and we're able to
15 recruit some of the leading researchers in the United
16 States.

17 As currently proposed in the regulations, UC
18 researchers would not be allowed to use small quantities
19 of SF-6 for research purposes. The regulation, as
20 currently proposed, only allows SF-6 use in testing to
21 find alternative uses for SF-6.

22 In order to continue its role as a leader in
23 academic research, UC must be able to have access to all
24 types of chemicals. In conducting research, UC scientists
25 sometimes may be required to reproduce certain chemical

1 reactions, experiments, or procedures in order to
2 reproduce or validate a certain process or chemical
3 reaction. Banning the storage and use of SF-6 in research
4 applications will negatively impact the UC's leadership
5 role in attracting research projects.

6 We are not allowed to use SF-6 in research
7 operations. Research grants could be given to other
8 universities in other states, and this could eventually
9 result in the loss of many of our outstanding researchers
10 who may not elect to become part of the UC family. Or if
11 they're an existing researcher, they may elect to move
12 their research to other out-of-state universities.

13 Therefore, University of California requests the
14 Air Resources Board to include an exemption for the
15 storage or use of small or de minimis quantities of SF-6
16 for research purposes.

17 CHAIRPERSON NICHOLS: Thank you.

18 Are you willing to track and keep records on what
19 you're doing? You just don't want to be banned from using
20 it?

21 DR. WONG: They're using small de minimis
22 quantities. So what we'd like to be able to do is
23 continue to use small quantities, which we would track.

24 CHAIRPERSON NICHOLS: I think that's an important
25 aspect of this whole rule. Is the staff agreeable to

1 that?

2 MS. SCHEEHLE: We have looked into de minimis
3 issues. And with the small quantities that are being used
4 in all of the different sources, it actually would have a
5 significant impact on our reduction, because all of these
6 add up to a significant level. And as presented, even a
7 kilogram emission is 24 metric tons of CO2 equivalent.

8 We have worked with the research community to
9 provide some exemptions already. And we feel that the
10 exemption process that we have outlined is flexible enough
11 that they can come in under that.

12 And it asks for an exemption for a certain amount
13 over a given period of time to work with us to determine,
14 and then, in that way, they will also have to provide a
15 mitigation plan.

16 CHAIRPERSON NICHOLS: Mr. Loveridge.

17 BOARD MEMBER LOVERIDGE: For each experiment or
18 each study, there would be a separate mitigation plan that
19 faculty would now have to submit?

20 MS. SCHEEHLE: No. We have designed it to be
21 flexible, so that the universities could come in as a
22 whole or one university could come in and request, say,
23 something like a five-year exemption for X amount of use
24 and provide basically what they think they're going to use
25 it for and how they would plan to mitigate those uses.

1 BOARD MEMBER LOVERIDGE: Let me just repeat the
2 statement made earlier. I mean, this is the first time I
3 can recall somebody officially here representing the
4 University of California. So I think this is an
5 extraordinary direction. It's a good sign.

6 And he laid out -- which I think was just reading
7 the article in Newsweek sort of which takes apart
8 California, but doesn't really talk about the universities
9 at all.

10 But I think we need to be respectful of this
11 perspective and this premise of what this represents to
12 research in California and its future. And so I -- I
13 mean, I understand we've got some -- you can work your way
14 through, but I don't really like that answer.

15 CHAIRPERSON NICHOLS: Well, I'd like to hear how
16 this process is actually going to work, because it
17 certainly didn't emerge clearly from the staff report. So
18 describe for us what you think UC Riverside or UC whatever
19 or Stanford or whoever that wants to be able to use some
20 amount of this material would do, in order to be able to
21 continue to do research that might involve this chemical.

22 MS. SCHEEHLE: They would come to ARB and
23 basically apply under one of the criteria that are set up,
24 which is reduced greenhouse gas emissions or if their use
25 is with no alternatives. We've not, to this date, been

1 able to find a use that is -- that we have not addressed,
2 either through a direct exemption or through one of the
3 other sectors, such as tracer gas testing. So none of the
4 research facilities that have come to us have had use in
5 the last several years that would not fall under one of
6 the uses that we've examined.

7 But through the exemption process, it would come
8 to us under one of those two criteria, and then we would
9 review it and work with them. It's a very flexible
10 process in terms of how long the exemption would be for
11 and what uses exactly would be covered.

12 BOARD MEMBER BALMES: Madam Chair, could I just
13 ask a question of Mr. Wong?

14 CHAIRPERSON NICHOLS: Yes.

15 BOARD MEMBER BALMES: As an employee of the
16 University of California, I would -- I'm sometimes
17 skeptical of that bureaucracy. So I would ask, have you
18 actually surveyed how much of this compound is actually
19 being used in research now? You mentioned de minimis
20 quantities. But is this a reflex of concern of
21 bureaucratic hassle, or is it really an identified problem
22 that this compound is being used in research now across
23 the university system?

24 DR. WONG: Some of the campuses that I've
25 surveyed, they say they might store a couple cylinders of

1 it. Of the six cylinders, one of them has a huge
2 cylinder. One of the professors who I talked to who does
3 water research has a big one-hundred pound cylinder. He
4 uses that.

5 The other campuses, they stated it's there for
6 possible use for research in the future. And again one of
7 the concerns is if you have to go through an exemption
8 process, many times you're recruiting new faculty. If you
9 don't have your ducks in a row to be able to use it right
10 away, they might end up saying I'm going to go to Harvard
11 instead of the UC system.

12 BOARD MEMBER BALMES: I think that's a good sound
13 bite, but I doubt if that would be much of an obstacle
14 recruiting faculty to UC. There are a lot bigger
15 obstacles than the use of SF-6.

16 CHAIRPERSON NICHOLS: All right. We understand
17 the issue. Thank you, sir, for bringing it to our
18 attention.

19 BOARD MEMBER ROBERTS: Is this exemption open to
20 private research also?

21 MS. SCHEEHLE: Yes.

22 BOARD MEMBER ROBERTS: So it doesn't discriminate
23 between -- with respect to a university isn't the only
24 place this is done?

25 MS. SCHEEHLE: No.

1 CHAIRPERSON NICHOLS: It's by category of use
2 rather than who the applicant is, which I think makes
3 sense.

4 All right. Randal Friedman, who always has the
5 Navy's perspective.

6 MR. FRIEDMAN: I have a different hat today.

7 CHAIRPERSON NICHOLS: Department of Defense.

8 MR. FRIEDMAN: Madam Chair, members, Randal
9 Friedman on behalf of Rear Admiral Hering, Regional
10 Commander, Navy Region Southwest DOD Regional
11 Environmental Coordinator.

12 Michael F. McGee, Acting Deputy Secretary of the
13 Air Force submitted a letter and supporting paper seeking
14 an extension of time until 2020 for military tracer gas
15 use. The Air Force supporting paper documents the need
16 for this tracer gas use as a result of early above-ground
17 nuclear weapons testing, the ability to detect and analyze
18 the long ranging effects of atmospheric transport into
19 fusion of airborne particles became an area of interest of
20 the federal government in the 1940s. In order to meet
21 these needs, the Air Force performs global nuclear treaty
22 monitoring and nuclear event detection and conducts field
23 test programs to obtain empirical data needed to validate,
24 transport, and disperse computer and modeling simulation
25 efforts.

1 While the Air Force is actively looking at
2 alternatives and has committed to cease use of SF-6 by
3 2020, and sooner, if possible, maintaining current
4 emissions capabilities will require a number of years of
5 field testing, revalidation of atmospheric models, and
6 extensive retooling of the existing SF-6 base system.

7 Such field testing, revalidation of models, and
8 retooling will take a number of years and the results are
9 uncertain and unpredictable at this time. A premature and
10 unqualified prohibition of SF-6 use in military tracer gas
11 applications would be imprudent for its serious national
12 security implications.

13 Staff suggests that we use the existing exemption
14 process post-2013, but we think this would be very
15 difficult, given the surrounding security classification
16 requirements. Per the proposed process, we must include
17 documentation that supports the exemption claim, including
18 the data and test methods to generate the data. All of
19 this documentation would be highly classified. DOD
20 classification requirements are much more stringent than
21 your confidential process and would make this exemption
22 process very difficult at best.

23 Finally, AB 32's milestone year's 2020. We would
24 be obligated to cease use of SF-6 by then and have
25 committed to try to replace our SF-6 basis system sooner

1 if possible.

2 We have supplied our 2001 to 2007 use data as
3 well. We believe that our proposal is mindful of the
4 State's need, but respectful of our nation's security
5 needs. We ask that you provide the requested extension of
6 time to comply through 2020.

7 Finally, I would like to apologize for getting
8 this document so late. But in all honesty, it took
9 several months just to get a declassified three-page paper
10 describing this program that we could turn in. This is a
11 very highly classified program, and I've been working very
12 hard to get you that information.

13 So I'm available for any questions.

14 CHAIRPERSON NICHOLS: Well, thank you.
15 Appreciate your coming today.

16 Do you have questions?

17 BOARD MEMBER TELLES: I have a question.

18 Has the military talked to the federal EPA as for
19 any other suggestions on this? Any other way to move on
20 this? Is there interagency communication going on in
21 federal government?

22 MR. FRIEDMAN: I don't know. So much of this
23 program is classified that -- I know they're -- as
24 discussed on the paper, they're working with the PFCs.
25 They're looking at alternatives. They have an active

1 process in place with the goal -- well, with a requirement
2 to replace this by 2020.

3 So obviously, they're doing the work now, but
4 there's a long lead time. And the big thing is the
5 validation and revalidation of what is now 70 years of
6 data that needs to be consistent with the next, you know,
7 70 years of modeling that is done through this program.

8 CHAIRPERSON NICHOLS: When I had my briefing with
9 the staff on this item, I recall that the question came up
10 as to what the military uses this substance for. At the
11 time, I don't think we even knew that it was for the
12 purpose that you've described here, which was the -- as I
13 understand it, the tracing of nuclear tasks. That's in
14 broad terms to find out where there has been above-ground
15 nuclear testing.

16 But the staff had indicated, at the time, that
17 the request was for more time so that the Department of
18 Defense could actually ascertain where they were using
19 that and why. And there's a little bit of a disconnect
20 here I think. I don't know if you want to comment on
21 that, staff.

22 GREENHOUSE GAS TECHNOLOGY & FIELD TESTING SECTION
23 MANAGER HERNER: This is Jorn Herner.

24 Since then, last Monday, we received this letter
25 from the military that clarified exactly what was going

1 on. That was information we had during the Board
2 briefing.

3 CHAIRPERSON NICHOLS: All right. So we're not in
4 a situation where there's stuff we just have lost
5 somewhere and don't know where it is. The military at
6 least knows where it is, and they're protecting it, but
7 they have a reason why they don't want to talk about where
8 it is and how much they're using.

9 GREENHOUSE GAS TECHNOLOGY & FIELD TESTING SECTION
10 MANAGER HERNER: This is the only thing they told us
11 directly that they're using now. And they told us this
12 last Monday.

13 MR. FRIEDMAN: And this is -- I would point out,
14 this is the only SF-6 use that is not -- this is the only
15 problem we have with the proposed regulation is this
16 specific use. And it literally has taken several months
17 to get this declassified to the point we are at today.
18 And again I apologize for that. I've wanted to get that
19 to staff sooner. I know, you know, process here, but
20 that's kind --

21 CHAIRPERSON NICHOLS: No. I appreciate your
22 efforts. I realize this is not the only thing that the
23 Air Force has to worry about. So thank you.

24 BOARD MEMBER ROBERTS: I have a question. It's
25 not clear to me what specifically you're asking. Are you

1 asking for a wholesale exemption? Are you asking -- I'm
2 not sure what -- I mean, I'm hearing that there's
3 something sensitive here. It's highly classified. But
4 I'm not sure what you're asking of us.

5 MR. FRIEDMAN: We are asking for an item relating
6 to military tracer gas use, to have a phase out at 2020.
7 We're not looking for a permanent exemption.

8 BOARD MEMBER ROBERTS: So a phase out at 2020
9 with virtually nothing between then and now?

10 MR. FRIEDMAN: Right. Well, with the commitment
11 from the Air Force to try to do it sooner. And you know,
12 that's what the letter from the Deputy Secretary
13 indicated.

14 BOARD MEMBER ROBERTS: Yeah. It just wasn't
15 clear to me what you were specifically asking us to do.

16 MR. FRIEDMAN: Right. The commitment is that by
17 2020, when the AB 32 benchmark is, the military will not
18 be using SF-6 in California.

19 I would also point out that we have asked the
20 question there is no other alternative for geographic
21 location. They have looked at doing this off ships and in
22 other areas. Because of geography involved in this and
23 consistency with past work, it has to be done in
24 California.

25 CHAIRPERSON NICHOLS: Well, and we know that the

1 atmosphere doesn't care, but thank you for asking.

2 Thanks for the clarification. Appreciate it.

3 Okay. We'll take this up when we talk about the
4 rule as a whole.

5 Mr. Simonelli followed by David Armstrong and
6 Kurt Werner.

7 MR. SIMONELLI: I guess I can still say good
8 morning. We've got a couple more minutes, Chair Nichols,
9 the ARB Board and the staff.

10 My name is James Simonelli. I'm the Executive
11 Director of the California Metals Coalition. We're a
12 statewide organization representing metal manufacturing.

13 The sector of our industry impacted by this
14 regulation are three facilities. They're all sand or
15 investment casting facilities all with magnesium.
16 California does not have any magnesium ingot processors.
17 California does not have any magnesium die casters. The
18 last dye caster is outsourcing to Minnesota.

19 Our current competition, even though it is
20 worldwide, is currently Mexico. Nogales, Mexico last year
21 took about \$3 million of our work, and so we're concerned
22 about that as a threat.

23 CMC, our organization, submitted comments on
24 February 5th. So I'm not going to repeat those comments.
25 But I do want to provide an update and have the ability to

1 answer questions from the Board.

2 I'm going to hit on two points. The first point
3 is the alternatives that have been laid out by staff. The
4 first alternative, which is fluorinated ketone, has never
5 been tested in our industry. And so when we're looking at
6 alternatives based on the staff report, fluorinated ketone
7 is something that for us as sand casters and investment
8 casters we have no data. We have no information. And for
9 us, it's going to be difficult to say that if a rule was
10 passed today that we can use that.

11 We currently have no information, and I don't
12 believe the staff has information on price of fluorinated
13 ketone. We have no information of availability of
14 fluorinated ketone.

15 It took us about three months to try to get --
16 there's only a single producer of fluorinated ketone to
17 allow us to even schedule a testing. And so the first
18 test is going to be done next week. And so the rule that
19 is in front of you or the proposal in front of you, even
20 though it does list fluorinated ketone, for us it has
21 never been tested.

22 The other option of SO-2, which has been
23 referenced, for our process, we are not diluting it.
24 There's been a reference that it's been diluted. That has
25 been done in the die casting industry, which is different

1 from us as sand casters and investment casters. And SO-2
2 is something that we got away from about 25 years ago.

3 SO-2 is harmful to our equipment. It's harmful
4 to the buildings, which is a safety issue. We have to put
5 our workers on respirators because it is an inhalation
6 issue. And it's also probably an issue for the air
7 district, because I met with one of the workers and asked
8 them, you know, what does this do, that SO-2? And he
9 goes, take a barrel of rotten eggs and try to melt it at
10 about a thousand degrees, and that's the odor.

11 We have one facility that LA Unified put a school
12 near, and we obviously concerned about the smell of SO-2.
13 We're are all in environmental justice zones. And so for
14 looking at SO-2 as an alternative is something for us that
15 we would use if it meant closing our doors or using that,
16 but quite honestly is not something that we see as an
17 option.

18 CHAIRPERSON NICHOLS: Mr. Simonelli, you've used
19 your three minutes. If you could just sum up, please.

20 MR. SIMONELLI: Yes.

21 Our last point -- and I will sum up -- is that
22 once we test fluorinated ketone, even if we accept that as
23 an industry and you pass it as a Board, it does not mean
24 that our customers will accept this.

25 We have to go to the Department of Defense, the

1 FAA. As you saw, it took three months to get a letter for
2 us to get them to take a flight-critical application and
3 to say yes, use something that you tested last week, it's
4 not going to fly.

5 CHAIRPERSON NICHOLS: So your industry's concern
6 is you just don't think you should be regulated at all?

7 MR. SIMONELLI: No. No. I was going to get to
8 that in the end. At the end, similar to the gentleman
9 before us, the phase out in 2020 is something that we can
10 work towards. I've already met with staff and said we're
11 willing to start to share the data with the fluorinated
12 ketone.

13 If that works, our next step is to take all the
14 thousands of products that we make and go to our customers
15 and see if they are willing to accept this as a change
16 out. And we'll share that information.

17 But I think we just want to see that there's an
18 openness on both sides to pursue this.

19 CHAIRPERSON NICHOLS: Thank you. Appreciate
20 that.

21 Okay. David Armstrong and then Kurt Werner.
22 That's the end of my list.

23 MR. ARMSTRONG: Good morning, Madam Chair,
24 members of the Board. David Armstrong, Lawrence Livermore
25 National Laboratory.

1 As you know, research is international. On any
2 given day, there could be a break-through experiment
3 somewhere in the world, China, Russia. It could be a
4 cancer cure. It could be alternative fuel. It could be
5 anything from under the sun.

6 As soon as that kind of break through happens,
7 researchers want to replicate the experiment that they saw
8 published. But if that experiment involved even a
9 microgram of sulfur hexafluoride, there is no university
10 or laboratory in the State of California that would be
11 able to replicate that experiment without waiting six
12 months for approval -- roughly six months for approval of
13 that replication.

14 Therefore, I'm requesting that there be some sort
15 of de minimis allowance for research in this regulation.
16 And my comments are based on a strict reading of the
17 regulation. I heard earlier that there might be some
18 five-year allowance or something for research. It's not
19 in the regulation. So I have to comment on what's
20 actually in writing in the regulation.

21 Thanks for the opportunity to comment and thanks
22 for the great work that you're doing.

23 CHAIRPERSON NICHOLS: Thank you.

24 Kurt Werner.

25 MR. WERNER: Good morning, Chairman Nichols,

1 members of the Board. I'm Kurt Werner from 3M. I want to
2 support the measure and thank the staff for their work.

3 3M manufactures the fluorinated ketone that is
4 now being used in ingot casting and die casting that's
5 used in the largest dye caster in North America. We have
6 every reason to believe that it can be used in investment
7 casting and sand casting.

8 And I just want to reiterate the comments from
9 Mr. Simonelli that the trials will start at a local sand
10 caster -- California sand caster next week. And we will
11 work with the staff to report those results and optimize
12 use of material as necessary, but we have every
13 expectation that it can be made to work in those
14 operations as well.

15 CHAIRPERSON NICHOLS: Thank you very much. Glad
16 to hear about this work that's going on.

17 That concludes my list of witnesses, unless
18 there's anybody else who signed up?

19 Okay. So we can move to a discussion at this
20 point.

21 Yes, Dr. Balmes.

22 BOARD MEMBER BALMES: I have a specific question
23 for the staff.

24 So SF-6 is used in occupational health in terms
25 of leak testing for respirators. Actually, you know, I'm

1 an occupational physician as well as pulmonary physician.
2 I know about this. And I know there are alternatives.
3 But do you have any sense of how much -- how frequently
4 SF-6 is used as a leak test tracer gas as opposed to the
5 alternatives that wouldn't necessarily have global warming
6 impacts?

7 MS. SCHEEHLE: I couldn't give you an exact
8 percentage. But I know that both sulfur hexafluoride and
9 the perfluorocarbons are often used for those sorts of
10 tracer purposes. So both are commonly used.

11 BOARD MEMBER BALMES: Has there been any
12 discussion with occupational health and safety folks about
13 the fact that this is coming down the pike?

14 MS. SCHEEHLE: CalOSHA has been involved in our
15 discussions, although mainly on the fume hood testing
16 side, but we have involved them in the process.

17 BOARD MEMBER BALMES: So do they have any
18 comments about leak testing? Because this would prohibit
19 use of SF-6 for leak testing in terms of respirators.

20 MS. SCHEEHLE: We have not had any comments on
21 that to date. And if it is something where only SF-6
22 could be used, that again is something that could go
23 through the exemption process.

24 BOARD MEMBER BALMES: I think there are
25 alternatives. I'm more concerned about the word getting

1 out and people having to gear up to deal with the
2 alternative, because we are actually talking about
3 protection of workers in this regard.

4 MS. SCHEEHLE: One of the -- because this is such
5 a diverse sector, we have part of the regulation with
6 distributors to spread word and send a letter to each of
7 the people who buy SF-6 on the regulation. And also we
8 can work with CalOSHA or other organizations to make sure
9 that specific stakeholders are notified.

10 BOARD MEMBER BALMES: That's really what I'm
11 asking for, working with CalOSHA and other stakeholders.

12 BOARD MEMBER TELLES: I have a comment.

13 CHAIRPERSON NICHOLS: Yes, please.

14 BOARD MEMBER TELLES: I would be totally in favor
15 of the military exemption if the military talks with the
16 federal government.

17 The reason -- I mean, the federal government has
18 positioned itself to regulate greenhouse gases. And I
19 think if the military is using a greenhouse gas, they
20 ought to get the clearance from the federal government.
21 And if there's no other alternative, I'd be totally in
22 favor of the military exemptions. But I think first the
23 two parts of the federal government need to communicate
24 there.

25 CHAIRPERSON NICHOLS: Any other questions or

1 comments?

2 Yes, Mayor Loveridge.

3 BOARD MEMBER LOVERIDGE: Well, let me just repeat
4 what I said before and maybe ask the staff to comment.

5 It seems to me that it is in the best public
6 interest for us to be the leading research place in the
7 country. I don't know how significant -- I take the
8 appearance of somebody from -- it's not simply
9 bureaucracy. I think he's representing the disparate
10 faculty views that exist on the campuses. Lawrence Lab
11 made the same point.

12 I'm troubled by creating regulations, which in
13 some ways perhaps can slow down or anchor or frustrate the
14 ability of this state to be among the leaders in research.
15 And so I don't know whether this is significant or not.

16 CHAIRPERSON NICHOLS: We have a group of folks on
17 this Board who have different experiences, I suspect, in
18 this area. Maybe we should talk about what the solution
19 should be.

20 Because I think we all agree with you. It's not
21 that anybody wants to see us in a position where we're
22 putting road blocks in the path of science or of
23 scientists.

24 On the other hand, we all know -- at least I can
25 speak for myself having worked at UCLA, there's cylinders

1 of chemicals lying around in a lot of places without
2 necessarily the same kind of controls on them that are
3 required in other places. And you have to have some sort
4 of procedures for knowing what's there and all the
5 campuses do that I'm aware of. I mean, they do their best
6 to try to keep a handle on what they're using and what's
7 going on.

8 There needs to be a simple preferably up-front
9 process I would view -- I would say where research
10 institutions are presumed to be allowed to use a small
11 amount, but where they have to come in and demonstrate
12 that they know what it is and where it is and that
13 they're, you know, using it in places that are really for
14 research and not just for keeping it around in case they
15 might happen to feel like using it some day.

16 And you know, I mean, there's a way to do this
17 that surely is not unduly burdensome, but that sends a
18 positive signal that we want our research institutions to
19 be able to have small amounts that they need for research
20 purposes without having to go through a six-month permit
21 process to get that permission.

22 It's just a shifting of the burden, but I think
23 it needs to be in the regulation. At least, that would be
24 my view.

25 GREENHOUSE GAS TECHNOLOGY & FIELD TESTING SECTION

1 MANAGER HERNER: We certainly appreciate that comment.

2 And we think that we have done that already.

3 The reason why it wasn't put in up front was that
4 we didn't get much information from the researchers.
5 We're simply told that they would like an exemption.

6 And as you mentioned, through the exemption
7 process that we put in place, we'll be able to ask them to
8 tell us, you know, about how much they used, have it in
9 the reporting, and all these kinds of things. That's
10 really what we're looking for.

11 CHAIRPERSON NICHOLS: Well, let's look at the
12 language. I'd like to actually read that portion of the
13 regulation. I think we all would. And we'll see if it
14 needs to be addressed before we actually vote on it.

15 I'd like to see if there are other items that
16 Board members want to see addressed. And what I think I'm
17 going to actually do is to take a lunch break and come
18 back for the vote on this item after half an hour. But
19 we'd like to give you some instructions about what to work
20 on during that period.

21 BOARD MEMBER RIORDAN: Madam Chair.

22 CHAIRPERSON NICHOLS: Yes.

23 BOARD MEMBER RIORDAN: I feel very strongly about
24 the Department of Defense request. I think it should be
25 granted with their commitment to find a solution by the

1 2020, and if not before. And they may be able to do that.
2 I just think without a lot of knowledge, but I can sort of
3 think about how this might be used. I think it's all in
4 our best interests.

5 CHAIRPERSON NICHOLS: Is there general consensus
6 on that point?

7 Supervisor Roberts, hang on just a second.

8 BOARD MEMBER ROBERTS: I'm having trouble getting
9 acknowledged down here.

10 MR. FRIEDMAN: Madam Chair, if I might.

11 I did talk to the Deputy Air Force Secretary just
12 now, and he will commit to working with the U.S. EPA
13 through their establishment processes on this in the
14 future. So I just wanted to pass that on.

15 CHAIRPERSON NICHOLS: Thank you.

16 BOARD MEMBER ROBERTS: Well, first of all, we
17 have some newer members here. And I want to share Mr.
18 Friedman has been coming before us for a long time
19 representing the military. And I don't ever remember an
20 item where they asked for a wholesale exemption -- nor had
21 used -- I don't mean it in any derogatory sense -- an
22 excuse of national security. They've tried to work with
23 us whatever our rules may have been and to work
24 cooperatively.

25 So this is unusual to see this kind of request.

1 And, you know, I don't see a need to refer this back to
2 anybody else. I would feel comfortable going ahead and
3 doing exactly what they're asking of us to defer --
4 hopefully an earlier date than 2020. But if not, by 2020
5 that we would accomplish that.

6 CHAIRPERSON NICHOLS: Well, that's going a
7 proposed amendment then to the rule. But I sense that
8 there's considerable support for that on the Board.

9 BOARD MEMBER ROBERTS: Can I finish?

10 CHAIRPERSON NICHOLS: Please.

11 BOARD MEMBER ROBERTS: Secondly, with respect to
12 the UC or any researchers, I get concerned when I see sort
13 of an appeal in such a discretionary way to, you know,
14 some type of bureaucracy out there that's going to make a
15 decision in terms of research or other things, because
16 there's a lot of values that are perhaps -- I'd like to
17 see some specific well-laid-out program that we can
18 approve and not leave that to some faceless entity to
19 decide at some later date as to whether one researcher
20 deserves it and another does.

21 This thing is way too loose right now, and I
22 wouldn't support it in the form in which it's before us.

23 CHAIRPERSON NICHOLS: Thank you.

24 Any other comments before we take a brief lunch
25 break?

1 EXECUTIVE OFFICER GOLDSTENE: I'd like to point
2 out on the blanket exemption, I know that the Board is
3 leaning towards supporting the DOD request. But we do
4 believe -- and we'll show you the language during lunch --
5 that the exemption process has structured -- or during
6 the --

7 BOARD MEMBER ROBERTS: Not during lunch.

8 EXECUTIVE OFFICER GOLDSTENE: Not during lunch.
9 Sorry. When you review the language, you will see that
10 the exemption process also requests seeking an exemption
11 to show why no alternative would work and to come up with
12 possible mitigations. And so we do think that's
13 important, and it is challenging, particularly when the
14 issue of national security is being relayed to us. But I
15 just want to point that out.

16 CHAIRPERSON NICHOLS: Well, appreciate the
17 effort. But if they're saying that it's classified
18 material they can't share with us, there's nothing we can
19 do about that, at least not in a timeframe that's going to
20 result in a decision.

21 So we're kind of stuck.

22 BOARD MEMBER RIORDAN: I think we have to take
23 them at their word.

24 I would agree with Supervisor Roberts. They have
25 been before us many, many times, and they have been very

1 good partners, really truly.

2 CHAIRPERSON NICHOLS: Okay. Let us recess until
3 a quarter of 1:00, please.

4 (Thereupon a lunch break was taken.)

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1 AFTERNOON SESSION

2 CHAIRPERSON NICHOLS: So I think we're going to
3 resume, if I could get the staff to take their places.

4 Okay. We're back on the agenda item that we were
5 dealing with before we broke for lunch, the sulfur
6 hexafluoride from non-semiconductor and non-utility
7 applications rule.

8 And before we broke, I did not close the record.
9 So I want to do that now. But I also want to indicate
10 that the record will be reopened when the 15-day notice of
11 public availability is issued. Written or oral comments
12 received after this hearing date, but before the 15-day
13 notice is issued, will not be accepted as part of the
14 official record on this item.

15 When the record is reopened for the 15-day
16 period, then the public may submit written comments on the
17 proposed changes, which will be considered and responded
18 to in the Final Statement of Reasons for the regulation.

19 I want to make that clear at this time, because
20 I'm expecting coming out of this there will be a 15-day
21 notice and there will be changes in the proposed
22 regulation. And there are two of them that I think I've
23 heard. One of them I think is relatively easy to state,
24 which is that the Board will direct the staff to grant the
25 request of the Department of Defense along the exact lines

1 that they proposed.

2 The second, which is a little more complicated,
3 deals with research. And I want to propose the following,
4 because I think it's the simplest. But I don't think we
5 can do it right now.

6 I want to propose that in the 15-day notice that
7 the staff will amend the regulation to create a new
8 exemption for research, and that research will be defined.
9 And that there will be an exemption for research, but
10 subject to certain conditions. And the conditions would
11 include the monitoring and the reporting and a statement
12 at the time that that is done of what the research was
13 that this was being used for, so we don't have stockpiling
14 or inappropriate uses going on and we know how much is out
15 there. And we know that it really is being used for
16 research.

17 So the university or researchers institute, or
18 whatever it is, is still going to have an obligation here
19 to be paying attention to this material, which I know
20 they're capable of doing because they do it for other
21 things. But the presumption is that there is an ability
22 for researchers to get their hands on small amounts.
23 Nobody is really using large amounts of this stuff anyway
24 for any legitimate research purpose, And we're not going
25 to judge the quality of the research, the value of the

1 research, or whether the person went to the right
2 university or anything like that.

3 I think that's about the fairest way to do this.
4 And if the Board members -- I see some head nodding -- are
5 willing to go along, I think we should move along here.

6 Okay. So with that, do we need to do anything
7 else before we vote? We need to do the ex partes again I
8 guess. Are there any ex partes on this one?

9 None to report. Is the staff -- do you
10 understand?

11 EXECUTIVE OFFICER GOLDSTENE: I want to just make
12 sure the staff didn't have any questions and we
13 understand.

14 CHAIRPERSON NICHOLS: You understand, okay.
15 Great. In that case then, can we move this item?

16 BOARD MEMBER LOVERIDGE: So moved.

17 BOARD MEMBER BALMES: Second.

18 CHAIRPERSON NICHOLS: All those in favor say aye?

19 (Ayes.)

20 CHAIRPERSON NICHOLS: Opposed?

21 Terrific.

22 EXECUTIVE OFFICER GOLDSTENE: Madam Chairman, I'd
23 just like to thank the staff for their work on this and
24 point out that Elizabeth, who presented today, was a
25 member of the IPCC Panel that won the Nobel Prize for

1 climate research. I thought the Board members would like
2 to know that.

3 CHAIRPERSON NICHOLS: We have our own Nobel Prize
4 winner here at the Air Resources Board. Thank you very
5 much. So this is really tough, and you did a tremendous
6 job of managing a very complicated project. So thank you.
7 Thank you.

8 Okay. The next item then is a report -- we're
9 back to regular world air pollution -- on the designation
10 recommended for the revised 8-hour ozone standard.

11 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
12 Nichols. As you're aware, the U.S. EPA recently revised
13 the 8-hour ozone standard. As a first step in
14 implementing this standard, states are required to submit
15 recommendations for area designations. These
16 recommendations are due by March 12th of this year.

17 Because the standard is now more stringent, we
18 see more areas violating the standard and designated as
19 nonattainment. The new nonattainment areas are rural in
20 nature and are dominated by transport from upwind urban
21 areas. As a result, their improvement will depend on
22 upwind emission reductions and statewide strategies.

23 With these programs, we should continue to see
24 overall improvements in air quality throughout the state.

25 I'd like to introduce Marcie Nystrom who will

1 summarize the staff recommendations. Marcie.

2 (Thereupon an overhead presentation was
3 Presented as follows.)

4 AIR POLLUTION SPECIALIST NYSTROM: Good
5 afternoon, Chairman Nichols, members of the Board.

6 Today, I'll be summarizing our nonattainment area
7 recommendations for the 2008 federal 8-hour ozone
8 standard.

9 --o0o--

10 AIR POLLUTION SPECIALIST NYSTROM: U.S. EPA
11 revised the federal 8-hour ozone standard in March of last
12 year. This revision lowered the standard from 0.08 parts
13 per million to 0.075 parts per million.

14 This revision triggers a new round of area
15 designations. The first step in this process is
16 determining which areas attain the revised standard and
17 which areas do not.

18 States must submit recommendations to U.S. EPA
19 for area designations by March 12th of this year. EPA
20 will then review the recommendations and make final
21 designations by March 2010.

22 --o0o--

23 AIR POLLUTION SPECIALIST NYSTROM: Because the
24 revised standard was set at a lower level, all areas that
25 were nonattainment for the old standard will continue to

1 be nonattainment for the new more health protective
2 standard.

3 As you can see on the map, these continuing
4 nonattainment areas cover the major urbanized portions of
5 California, as well as adjacent downwind areas that are
6 impacted by transport.

7 In 2007 and 2008, California submitted new ozone
8 SIPs for many of these areas, with a few more to follow
9 this year.

10 --o0o--

11 AIR POLLUTION SPECIALIST NYSTROM: To determine
12 whether additional areas violate the new standard, we
13 reviewed air quality data collected during 2006 through
14 2008.

15 As part of this process, we must also propose
16 boundaries for the new nonattainment areas. U.S. EPA
17 guidance includes nine factors to consider. These include
18 evaluation of air quality in the surrounding region,
19 emission sources, population and growth patterns, and
20 weather-related and geographic influences.

21 The default designation area is a county.
22 However, U.S. EPA does allow for smaller areas if
23 appropriate. Because our counties here in California are
24 so large and diverse in terms of air quality, boundaries
25 other than county lines make sense in some cases.

1 Based on our analysis, we are recommending six
2 new nonattainment areas. The increased stringency of the
3 standard brings in new areas that are increasingly rural
4 and remote. The ozone concentrations in all of the new
5 areas are dominated by transport from an upwind area, and
6 their attainment will be dependent on ARB's statewide
7 strategies, as well as upwind district controls.

8 However, because their ozone problems are
9 typically less severe, we generally expect they will reach
10 attainment before their upwind neighbors.

11 I will next provide a brief overview of each of
12 these six areas.

13 --o0o--

14 AIR POLLUTION SPECIALIST NYSTROM: The first area
15 is eastern Kern County. Most of eastern Kern, as shown in
16 the yellow, is already nonattainment. We recommend
17 expanding the existing nonattainment area to include the
18 small orange area in the northeast part of the county, as
19 monitoring data showed this portion also violates the new
20 standard.

21 Air quality throughout eastern Kern is impacted
22 by transport from both the South Coast and the San Joaquin
23 Valley.

24 --o0o--

25 AIR POLLUTION SPECIALIST NYSTROM: The next two

1 areas are isolated high elevation areas. They are Tuscan
2 Buttes in Tehama County and Pinnacle's National Monument
3 in San Benito County.

4 These areas are showing violations due to
5 transport and have no emission sources other than a few
6 roads. Because of the nature of these areas, we recommend
7 boundaries that include only the area where violations
8 occur.

9 --o0o--

10 AIR POLLUTION SPECIALIST NYSTROM: The Tuscan
11 Buttes' monitor is located at the top of the buttes in an
12 undeveloped area above 1,800 feet elevation. This monitor
13 was sited to study transport impacts, and areas
14 surrounding the site do not violate the standard.
15 Therefore, we recommend the Tuscan Buttes nonattainment
16 area be limited to the top of the buttes where violations
17 occur.

18 This is similar to the approach U.S. EPA used in
19 designating the Sutter Buttes under the previous 8-hour
20 standard.

21 --o0o--

22 AIR POLLUTION SPECIALIST NYSTROM: Further south,
23 we have Pinnacles National Monument. The monument is in
24 an area of rugged terrain in the coast range east of
25 Monterey Bay.

1 This is another elevated transport impacted site.
2 The surrounding monitors at lower elevations all meet the
3 standard.

4 Previous transport studies show that the ozone
5 violations at Pinnacles are overwhelmed by transport from
6 the San Francisco Bay Area.

7 We're recommending the nonattainment area
8 therefore be limited to that portion of the national
9 monument located in San Benito County.

10 --o0o--

11 AIR POLLUTION SPECIALIST NYSTROM: The remaining
12 three new nonattainment areas shown here in orange are all
13 rural transport areas. They include eastern San Luis
14 Obispo County, Southern Inyo County, and expanded portions
15 of San Bernardino County.

16 --o0o--

17 AIR POLLUTION SPECIALIST NYSTROM: Although San
18 Luis Obispo County has a population of more than 250,000,
19 virtually all of it is concentrated along the coast. The
20 remainder of the county is very rural with few emission
21 sources.

22 In order to study transport from the San Joaquin
23 Valley, the district established several monitoring sites
24 in the rural eastern portion of the county. These
25 monitors show violations of the new standard.

1 Our original staff recommendation included the
2 entire county as nonattainment. However, the district has
3 provided additional data that support boundaries similar
4 to those proposed for other transport impacted areas.

5 As a result, we're recommending that only the
6 eastern portion of the county be nonattainment, consistent
7 with the monitoring data and transport evaluation.

8 --o0o--

9 AIR POLLUTION SPECIALIST NYSTROM: The next area
10 is southern Inyo County. The second largest county in
11 California, Inyo County includes both the highest and
12 lowest elevations in the state, Mount Whitney and Death
13 Valley.

14 The monitor that violates the standard is located
15 in Death Valley National Park. This is a rural area with
16 no significant emission sources that is impacted by
17 transport from both the South Coast and the southern San
18 Joaquin Valley.

19 We recommend that only the southern portion of
20 the county be designated as nonattainment, reflecting the
21 area where transport from these upwind regions is
22 sufficient to cause violations.

23 --o0o--

24 AIR POLLUTION SPECIALIST NYSTROM: The last new
25 nonattainment area the northeast San Bernardino County.

1 San Bernardino County is the largest county in the United
2 States and encompasses a very diverse landscape portion of
3 the county, shown as the orange hatched areas, are already
4 designated as nonattainment with boundaries based on the
5 previous 1-hour and 8-hour standards.

6 The southwest portion is located in the South
7 Coast air basin. Ozone concentrations in this area are 60
8 percent above the level of the standard. The central
9 portion of the county, which includes Victorville, has
10 ozone concentrations that are 40 percent above the
11 standard. The revised standard now brings in the
12 remainder of the county.

13 This northeast portion shown as solid orange is a
14 sparsely populated desert area with few emission sources.
15 Ozone concentrations in this part of the county are less
16 than ten percent above the standard and are dominated by
17 transport from upwind areas.

18 Given the difference in the severity of the ozone
19 problem in this new area, we recommend that northeast San
20 Bernardino County be designated as a separate
21 nonattainment area. This will better reflect their
22 overall air quality problem and recognize that the area
23 should attain the standard in a shorter timeframe.

24 --o0o--

25 AIR POLLUTION SPECIALIST NYSTROM: Finally, as I

1 mentioned earlier, we will submit our area designation
2 recommendations to the U.S. EPA by the March 12th
3 deadline. U.S. EPA will review these recommendations and
4 issue final designations next year.

5 This concludes my presentation. And now we'd be
6 happy to answer any questions you have.

7 CHAIRPERSON NICHOLS: Are there any questions?

8 BOARD MEMBER TELLES: Not a question, but just
9 for more information. Maybe not to deliver today, but I'd
10 be interested in not just the fact that they're out of
11 attainment, but how many days of the year that the
12 different areas are out of attainment, maybe if you can
13 just send me that, I'd appreciate it.

14 DEPUTY EXECUTIVE OFFICER TERRY: Just a reminder
15 that Board Member D'Adamo did ask us to do a little
16 informative board item on the SIP process. And we will be
17 doing that this spring. So that might be an opportune
18 time to do that kind of report as well.

19 CHAIRPERSON NICHOLS: Okay. Thank you for the
20 report. We appreciate it.

21 No one was signed to testify on this item that
22 I'm aware of.

23 BOARD MEMBER RIORDAN: Madam Chair, I'd like to
24 move the staff recommendation.

25 DEPUTY EXECUTIVE OFFICER TERRY: Well, this is

1 actually an informational report to the Board. And then
2 what will happen is we simply send a letter to U.S. EPA
3 saying these are our recommendations and doesn't --

4 CHAIRPERSON NICHOLS: It doesn't really come
5 before the Board.

6 BOARD MEMBER RIORDAN: All right.

7 CHAIRPERSON NICHOLS: We thought people ought to
8 be aware of this. There are more nonattainment areas than
9 you thought. Things are worse than you might have
10 thought. Ozone is spreading even to our high elevation
11 areas and our national parks and monuments. And it is a
12 concern.

13 Okay. Let's move on then to the ICAT. Is that
14 the next item?

15 EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman
16 Nichols.

17 The ICAT grant program funds projects that move
18 promising technologies from the research and development
19 phase into practical demonstrations.

20 For the latest solicitation, we requested
21 applicants to focus on technologies that would control
22 emissions of greenhouse gases. In addition, staff has
23 responded to the Board's request to investigate whether
24 ICAT could be modified to recover some of its cost from
25 successful participants through a royalty arrangement.

1 Staff has looked into this issue and found
2 payback requirements would discourage applicants and that
3 administrative costs would likely exceed the income. Thus
4 staff recommends no ICAT payback requirement.

5 This year, we received 86 pre-proposals that were
6 pared down to the three full proposals we are presenting
7 here for your consideration. Staff believes these three
8 technologies in commercial use would best support ARB's
9 goals and programs.

10 I'll now turn the presentation over to Steve
11 Church of the Research Division.

12 (Thereupon an overhead presentation was
13 Presented as follows.)

14 ICAT PROGRAM COORDINATOR CHURCH: Thank you, Mr.
15 Goldstene.

16 Good afternoon, Chair Nichols and members of the
17 Board.

18 Today, I will discuss the Innovative Clean Air
19 Technologies Program, known as ICAT, and the new projects
20 which we recommend for funding.

21 However, we will start today's presentation with
22 a look at some of the technologies that have been brought
23 to market with ICAT support and with a summary of staff's
24 analysis of the payback clause the Board directed us to
25 investigate in June of last year.

1 --o0o--

2 ICAT PROGRAM COORDINATOR CHURCH: As you know,
3 ICAT is the ARB's program for supporting development and
4 demonstration of new promising air pollution control
5 technologies on a co-funding basis.

6 At the last review, ten completed projects had
7 proceeded to commercial sales. These technologies are now
8 being sold in the marketplace where they are achieving
9 emission reductions beneficial to many of our main
10 programs.

11 Examples include, demonstration of electric
12 airport ground support equipment at Sacramento
13 International Airport, which reduces the use of diesel
14 engines and supports ARB's off-road programs and local SIP
15 efforts;

16 A diesel particulate filter that is regenerated
17 overnight using grid electricity, which expands the types
18 of applications that could be retrofitted with DPFs and
19 supports ARB's Diesel Risk Reduction Plan, fleet, and
20 school bus activities;

21 Demonstration of staged combustion technology for
22 boiler NOx control, supporting ARB's stationary source NOx
23 control programs.

24 Now, there are also currently 16 projects
25 underway. Examples of these include a project to

1 demonstrate selective catalytic reduction of NOx from a
2 ferry boat in San Francisco Bay, addressing the need to
3 control emissions from marine vessels; development and
4 demonstration of three-way catalytic converters for
5 outboard motors to control NOx, hydrocarbons, and carbon
6 monoxide from outboard pleasure craft; demonstration of
7 solar water heaters that can reduce residential fossil
8 fuel combustion and therefore NOx and greenhouse gas
9 emissions.

10 These are just a few examples of the technologies
11 brought to market with ICAT support and what is to come.
12 Staff estimates that commercial use of these technologies
13 has resulted in a reduction of 1,200 tons of ozone
14 precursors and avoided about 60 premature deaths.

15 The benefits of the program continued to accrue
16 as new technologies from the program are brought to market
17 and existing ones are sold in greater numbers.

18 --o0o--

19 ICAT PROGRAM COORDINATOR CHURCH: We'd also like
20 to take a moment to respond to a previous request from the
21 Board to look into the possibility of modifying the ICAT
22 program to require some sort of payback from the
23 successful participants. The idea was to use the revenues
24 to support and expand the program.

25 One possibility for payback would be a royalty on

1 sales of successfully commercialized technologies.

2 Staff has identified three main issues.

3 First, we talked to eight of our past successful
4 participants to get their views on royalty requirements.

5 Half indicated that they would not accept a payback
6 requirement and half said they were uncertain.

7 In deed, several noted that the ICAT grants are
8 not large enough to warrant the extra administrative and
9 recordkeeping effort they would have to undertake.
10 Accordingly, staff believes that a payback requirement is
11 potentially chilling and could have significant impact on
12 the number and quality of applications ICAT receives.

13 In addition, ARB currently does not have
14 authority to collect payments from private businesses for
15 reuse by the program. Staff estimates it would take at
16 least 18 months to get legislative authority and finalize
17 program details and obtain Board authorization for the
18 changes.

19 Finally, staff has consulted with the
20 administrative staff of other grant programs that have a
21 payback requirement, including the California Energy
22 Commission's public interest energy research program.
23 Based on their input and staff's estimates, the additional
24 costs to administer a payback requirement would likely
25 exceed revenue that could be generated.

1 Therefore, based on our investigation, staff
2 recommends that no ICAT payback requirement be
3 implemented.

4 --oOo--

5 ICAT PROGRAM COORDINATOR CHURCH: Now, I'll
6 return to our grant recommendations for the current ICAT
7 cycle.

8 In April of last year, we issued a solicitation
9 to the public for grant applications emphasizing the
10 preference for technologies to reduce greenhouse gas
11 emissions.

12 We received 86 pre-proposal abstracts, which ICAT
13 staff reviewed to determine which had potential for ICAT
14 participation. We invited 13 of these applicants to
15 submit full proposals and received proposal packages from
16 all of them.

17 The full proposals were reviewed by staff in
18 Research, Stationary Source, Planning and Technical
19 Support and Mobile Source Control divisions of ARB, by
20 staff at the South Coast Air Quality Management District,
21 and by faculty at the University of California.

22 Three proposals were selected for recommendation
23 to the Board by considering the quality and novelty of the
24 technology, the quality of the proposed demonstration
25 project, the potential for emission reductions, and the

1 potential for successful commercialization.

2 --o0o--

3 ICAT PROGRAM COORDINATOR CHURCH: The three new
4 grants we are recommending have total ICAT funding
5 requests of approximately \$710,000.

6 The ICAT funds would support projects whose total
7 budgets add up to more than 1.6 million.

8 The three grants would fund the demonstration of
9 new control technologies for engines running on dairy
10 digester biogas, active flow control for reducing drag of
11 on-road tractor-trailers, and demonstration of a series
12 hydraulic hybrid package delivery vehicle.

13 --o0o--

14 ICAT PROGRAM COORDINATOR CHURCH: So the first
15 project would support AB 32 greenhouse gas control
16 measures for digester emissions and the 2013 standards for
17 distributed generation emissions, while meeting applicable
18 emission requirements.

19 It is from the Sacramento Municipal Utility
20 District, and demonstrates two technologies for cleaning
21 both fuel and exhaust from dairy digester biogas engines.

22 The system uses a peroxide solution to remove the
23 sulfur from the incoming biogas fuel, which is then
24 collected and dried. Sulfur removal has significant
25 benefits in terms of reduced engine wear, extended oil

1 change and spark plug change intervals, and also allows
2 the use of sulfur sensitive aftertreatment for NOx,
3 hydrocarbon, and carbon monoxide control.

4 To remove NOx from the exhaust, the system uses
5 activated carbon as an absorbent. Once saturated,
6 microwave energy is used to desorb the NOx and react it
7 with consumable carbon to produce carbon dioxide and
8 nitrogen gas.

9 The requested ICAT funding request is just over
10 \$246,000. The project will demonstrate these technologies
11 on a power generation engine at the Tollenaar Dairy in Elk
12 Grove, for a period of approximately six months. The
13 biogas will produced by a digester on the premises.

14 Staffs of the San Joaquin Valley Air Pollution
15 Control District, Sacramento Municipal Air Quality
16 Management District, several dairy industry stakeholders,
17 and the California Department of Food and Agriculture have
18 all expressed strong interests in and significant support
19 for this project.

20 --oOo--

21 ICAT PROGRAM COORDINATOR CHURCH: The next
22 project is from advanced transit dynamics and would
23 support ARB's AB 32 goals for the heavy-duty vehicle
24 greenhouse gas emission reduction measure, as well as
25 reduce NOx and PM from trucking operations.

1 It is designed to demonstrate a technology for
2 reducing the aerodynamic drag and improve fuel consumption
3 for typical on-road tractor-trailer trucks.

4 The technology consists of actuators that inject
5 air into the boundary layer flow near the rear of the
6 trailer. This injected air modifies the flow separation
7 resulting in a smaller region of low pressure behind the
8 trailer. This reduces the drag and improves the fuel
9 economy of the vehicle by six to ten percent.

10 Of course, with this reduction in fuel
11 consumption, there's a corresponding decrease in
12 greenhouse gas emissions. The requested ICAT funding is
13 just over \$249,000. The applicant will partner with three
14 trucking fleets that will provide vehicles for track
15 testing and on-road demonstration testing.

16 In addition to demonstrating the technology, data
17 will be gathered to assist in U.S. EPA Smartways
18 certification, which would help support ARB's current
19 truck rules.

20 --o0o--

21 ICAT PROGRAM COORDINATOR CHURCH: The third
22 recommended project is from Eaton Corporation. It would
23 support the hybridization of medium and heavy-duty vehicle
24 early action strategy, the Diesel Risk Reduction Plan, the
25 2007 ozone SIP, and general goals for heavy-duty vehicle

1 emission reductions.

2 The project is the demonstration of Eaton's
3 hydraulic hybrid technology on a package delivery vehicle.
4 Instead of using electric components like the electric
5 hybrid cars we are familiar with, this technology uses
6 hydraulic components to allow the engine to operate with a
7 combination of load and speed that maximizes engine
8 efficiency.

9 This results in reduced fuel consumption and the
10 consequential greenhouse gas emissions. Regenerative
11 breaking is also a feature of the hydraulic hybrid system.

12 --o0o--

13 ICAT PROGRAM COORDINATOR CHURCH: This unit is
14 predicted to improve fuel economy of package delivery
15 vehicles by up to 50 percent. The requested grant amount
16 is about \$214,000. This vehicle will be operated for a
17 six month period in revenue-generating services in
18 California, which should raise the technology's visibility
19 and lead to more immediate penetration into the market.

20 --o0o--

21 ICAT PROGRAM COORDINATOR CHURCH: To summarize,
22 the ICAT program has been in place since the mid '90s and
23 has assisted in the development of several successful
24 technologies that are realizing the important emission
25 reductions in California.

1 Today, we are proposing funding three additional
2 grants for a total of approximately \$710,000 combined with
3 another \$900,000 being contributed by the applicants and
4 their partners. The ARB funds would support the
5 technologies through the project cycle and on to
6 commercialization, where they can fulfill their air
7 quality improvement potential for the state.

8 Thank you for your consideration, and we'd be
9 happy to address your questions at this time.

10 CHAIRPERSON NICHOLS: Well, I think it's -- these
11 are worthwhile proposals. I also appreciate the context
12 that you've put this in. This is obviously not a huge pot
13 of money, but it is a valuable pot of money that the
14 Research Division has been given the opportunity to manage
15 here. And it may well turn out to be that this is some
16 kind of a precursor of what could happen if we were able
17 to establish a carbon trust of some kind in California in
18 terms of the kinds of things that we could show could be
19 done with, you know, relatively modest -- I mean,
20 obviously these are big sums of money, but they're
21 relatively modest in comparison with the overall cost of
22 doing this kind of work.

23 So I think it's -- I think these are the kinds of
24 projects that we certainly said we would like to see
25 coming forward here.

1 And I don't know if other Board members have any
2 additional comments or questions about any of the
3 projects?

4 Good report.

5 Okay. Seeing none, I think we need to actually
6 have a resolution. It's not a regulatory item, so we
7 don't have to close the record. I didn't see anybody
8 coming here to speak on this item.

9 So, I think we can actually simply move it.

10 BOARD MEMBER D'ADAMO: So moved.

11 BOARD MEMBER BALMES: Second.

12 CHAIRPERSON NICHOLS: All those in favor say aye?

13 (Ayes.)

14 CHAIRPERSON NICHOLS: Thank you.

15 All right. We have one more last item, and from
16 our Director of Communications, who's a shy and modest
17 fellow, Leo Kay.

18 I'm teasing him, because the only criticism I
19 ever really get from him is that he doesn't think I'm out
20 there selling ARB enough.

21 (Laughter.)

22 OFFICE OF COMMUNICATIONS DIRECTOR KAY: You
23 remembered that.

24 CHAIRPERSON NICHOLS: So right. You know, I take
25 criticism, sort of.

1 (Laughter.)

2 CHAIRPERSON NICHOLS: But in all seriousness, Leo
3 has been just doing a terrific job of broadening the ARB's
4 communications program.

5 For those of you who were here before I got here,
6 I'm sure this will resonate even more than it does for me.
7 But historically, for many, many years, ARB had a very
8 reactive communications program, essentially just
9 responding to press inquiries, oftentimes reluctantly at
10 that.

11 And as we have moved into an era where obviously
12 our responsibilities and our ability to do things that
13 people will either be happy about or unhappy about has
14 expanded, it becomes really important that we be able to
15 communicate what we're doing effectively.

16 So that is the job of Leo and his staff. I'm
17 hoping he'll give us a brief overview of what he's up to.

18 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Okay.
19 Thank you, Madam Chair, members.

20 There we go. That's better.

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

23 OFFICE OF COMMUNICATIONS DIRECTOR KAY: All
24 right. So rather than just reading what's on the
25 PowerPoint, I'll augment that. And I think it's no news

1 to say that we're not just leading the country here in our
2 efforts to fight global warming, we're also going at
3 diesel regulations, clean vehicle technologies, a whole
4 slough of programs. So we have stories to tell. And, you
5 know, we also have a responsibility to the taxpayers to
6 let them know what their money is being spent on. So
7 that's kind of the backdrop for which we operate under
8 every day.

9 --o0o--

10 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Some of
11 the tools that we use to get our word out, the old bread
12 and butter of press releases, op-eds, news conferences, et
13 cetera.

14 I'm going to focus on press releases for just a
15 minute and talk about that is a unit of measurement in
16 terms of how much more aggressive we've gotten over the
17 past couple of years.

18 We issued 42 press releases in 2006. We got up
19 to 66 in 2007. And last year, we issued 115 press
20 releases.

21 Now, that's not significant in itself. But if
22 you also take a look at the pickup rate that we have on
23 these press releases, they're not just going on our
24 website. They're generating news coverage. I think we
25 have somewhere between a 90 and 95 percent pickup rate.

1 So we're pretty -- although, we're pumping out more and
2 more press releases, we're still discerning as to the news
3 value of each one and making sure that there's a life
4 beyond our webpage for these press releases.

5 And one of the ways we get them out, in addition
6 to sending them directly to the news media, is we have a
7 list-serve of people and organizations who receive every
8 press release we put out. I think that's 3,000 and
9 growing right now people on that list-serve.

10 --o0o--

11 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Okay. We
12 also, as Mary mentioned, respond to media queries. We
13 might be low-balling this figure, but we're saying maybe
14 about 75 media calls per month, 900 a year. But as you
15 guys all know, with the December Board hearing, the back
16 to back votes on both the Scoping Plan and diesel truck
17 regulations, that was off the charts. We had dozens and
18 dozens of calls and interviews on those two dates alone.

19 --o0o--

20 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Some of
21 the other services we offer, we put out news clips every
22 day. We're going to be starting a media training program
23 soon. We do work on our intranet site, somewhat of an
24 internal newsletter for staff who are interested in what's
25 going on with ARB programs.

1 We provide graphics help, fact sheets. We run
2 the main ARB hotline. We do web design, videos,
3 photography. And we also have a speech writer on board
4 now, too.

5 --o0o--

6 OFFICE OF COMMUNICATIONS DIRECTOR KAY: One of
7 the areas that we're focusing on, which I'll talk a little
8 bit more about in a minute, is creating an ARB brand. For
9 years, we kind of had a decentralized approach to how we
10 did our outreach and how we presented ourself to the
11 public.

12 And we're trying to bring a little more
13 uniformity and consistency to things such as logos,
14 because, you know, sometimes it's the logos that you have
15 that end up imprinting on people's brains even as much as
16 some of the news media you cover -- you get covered on.

17 And I think a good example of that is the Energy
18 Star program that U.S. EPA and Department of Energy has
19 run for years. It's a very recognizable easy-to-spot logo
20 that a lot of people immediately associate with the
21 federal government.

22 --o0o--

23 OFFICE OF COMMUNICATIONS DIRECTOR KAY: So the
24 main tool that we use to keep track of what's going on for
25 days, weeks, months out and to plan and launch our

1 communications campaigns is called the communications
2 timeline. And we, as a team, take a look at this at least
3 once a week and try and forecast what's coming up and
4 what's going to require comprehensive campaigns.

5 --o0o--

6 OFFICE OF COMMUNICATIONS DIRECTOR KAY: All
7 right. Here's a quick look at our organizational
8 structure. And I'm happy to say I think we have a good
9 portion of our team right here in the back. If you guys
10 want to stand.

11 (Laughter.)

12 (Applause.)

13 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Sarah
14 Dalton is one of the newest members of our team, speech
15 writer. We also have Mary Salas-Fricke, who just joined
16 us recently. And is Padma there?

17 So we're excited and we're moving ahead. We've
18 got a really good group to continue moving onward and
19 upward.

20 --o0o--

21 OFFICE OF COMMUNICATIONS DIRECTOR KAY: A few
22 goals that we have for 2009, as mentioned before, we want
23 to bring a little more consistency and uniformity to our
24 outreach efforts. And we are all over the place -- I
25 don't mean that in a bad way -- in our outreach. You

1 know, a lot of regulations that the Board ends up voting
2 on has been subject to workshops up and down the state,
3 leading up to the Board adoption of the rules.

4 So what we want to do is we want to make sure
5 when we go to Fresno to talk about a tire inflation
6 regulation that we also have the information and the
7 resources there to talk about anything else people may
8 want to know about ARB. Because, you know, although we
9 may have a narrow focus for the purpose of that workshop,
10 it's the one opportunity that the public has to come and
11 talk to ARB about anything under the sun. So we're trying
12 to work on that a little more.

13 --o0o--

14 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Another
15 one of our goals is to work with the web development team
16 to kind of streamline our web page, re-group the
17 functionaries, sync-up with media and outreach strategies.

18 An example of this is we have a number of
19 regulations that are affecting the trucking industry, not
20 just the on-road truck rule, but TRUs, the periodic smoke
21 inspection program, a whole slough of regulations and
22 programs that affect people who drive trucks in
23 California.

24 So what we'd like to do is create some type of a
25 portal on the front page that's simply called the Truck

1 Stop. And you click on that, and you go to all the
2 regulations that are affecting truckers.

3 So that's one of the types of ideas that we'd
4 like to get underway and get away from this kind of
5 decentralized approach that we've relied on in the past.

6 --o0o--

7 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Okay.

8 And then, you know, we have a lot of allies out there who
9 can help us carry our messages. And in particular, the
10 air districts -- the 35 air districts throughout the state
11 of California are often the ones called on to implement
12 our regulations at the ground level. So we're working
13 very closely with all -- well, mostly the major air
14 districts, such as South Coast, San Joaquin, Sacramento,
15 Bay Area, to make sure that they have the communications
16 materials that are needed to help educate consumers on
17 some of the things that are coming up. One example of
18 that is the upcoming deadline for the enhanced vapor
19 recovery program.

20 --o0o--

21 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Then in

22 terms of issues, of course, our issues are your issues.

23 So, you know, what's big in 2009. We have truck and

24 off-road regulations. We've got agricultural and engines.

25 We've got the low-carbon fuel standard, the Pavley

1 regulation, specific AB 32 regulations. And also our
2 revised relationship with U.S. EPA is generating a lot of
3 interest in the public and within the news media. So
4 we're going to continue to shore that up as well.

5 --o0o--

6 OFFICE OF COMMUNICATIONS DIRECTOR KAY: And
7 finally, looking ahead, some of the changes taking place
8 in the world of the news media are things that we're also
9 trying to stay abreast of.

10 So, you know, news rooms are shrinking. The
11 ethnic media is growing more and more important,
12 especially in a place like California. And we need to be
13 able to keep up with that.

14 So, for example, on the truck regulation, we
15 learned that there was -- at least for many of us there
16 was a surprise. We were surprised to learn that the huge
17 number of Punjabi truck drivers there are in the state of
18 California. So we reached out to the Indian American
19 newspapers and press and radio stations to help get the
20 word out.

21 And we're trying to bolster our foreign language
22 capabilities within the ARB staff, so that we have people
23 who can serve as spokesmen in a number of different
24 languages. And I think we -- obviously, Spanish is a big
25 one. We have a specific Spanish language press officer.

1 But Punjabi, Korean, Vietnamese, you know, we have a
2 pretty diverse population in California.

3 And, you know, a good example of the rise -- or
4 the continued importance of the ethnic media is I saw last
5 year a story in the Chronicle that said -- and I think
6 this had happened in LA. They had surpassed this a year
7 or two before, but Spanish language TV stations led the
8 Nielsen ratings for local news stations in the Bay Area
9 last year. That's a big, big deal.

10 So we need to keep up with that. We need to have
11 appropriate Spanish speaking staff at our disposal to help
12 translate a lot of very complex information, even in the
13 English language into Spanish.

14 --o0o--

15 OFFICE OF COMMUNICATIONS DIRECTOR KAY: You know,
16 we wanted to continue working on the web.

17 And then also this term that's been bantered
18 about a lot, the "New Media", to better tell ARB's story.
19 And that can include everything from Facebook to Twitter,
20 MySpace, to all these new tools that are out there that
21 people much younger than me are more adept at manipulating
22 and using.

23 And then, finally, we want to continue to kind of
24 burrow deep in the divisions, because there really is a
25 story in just about every cubicle at ARB. And so we want

1 to continue to kind of burrow deep into the divisions,
2 search out those stories, explain the significance of each
3 one of them and how they relate to kind of the big picture
4 goals and what ARB is up to.

5 I think that about wraps it up, unless --

6 CHAIRPERSON NICHOLS: Thank you, Leo.

7 I think Board members may have some questions or
8 comments about this.

9 But I just want to say, Leo and I arrived at the
10 ARB at just about the same time. So I feel a special
11 bond, if it also weren't for the fact that I'm the one who
12 gets to talk to the press a lot of the times when they do
13 call or when we're trying to get a story out. And I just
14 want the Board to know that this is an area where we are
15 being increasingly active and where we're really trying
16 hard to not only just be out there more, but be thinking
17 in a more broad way about what we're trying to
18 communicate, not just, you know, they adopted this or they
19 did that. But to really try to educate the public about
20 what's going on in the area of air pollution and global
21 warming.

22 So if you all have suggestions, connections,
23 opportunities, or whatever, we want to ask you to be
24 thinking about those as well.

25 Did you have some questions?

1 BOARD MEMBER RIORDAN: I do have a suggestion.

2 When you talked about building the relationships
3 with the PIOs of larger districts, because they're the
4 only ones that really can request, afford PIOs, it
5 occurred to me that we really need to do some outreach
6 with the very small districts and mid-size districts. And
7 while they don't have PIOs, you could be a resource to
8 whatever staff they do have. And it might provide a very
9 important link for the smaller districts to understand
10 what the Air Resources Board does.

11 And then in our own way, we can learn they're
12 unique environment because they have -- let's just talk
13 about the truck drivers alone and those who own vehicles
14 in some of these more rural districts. There's going to
15 need to be a lot of education, outreach to those
16 individuals. You could be very valuable to those
17 districts. I encourage you to reach out to the small
18 districts.

19 OFFICE OF COMMUNICATIONS DIRECTOR KAY: That's a
20 very good point. And, you know, we do have the resources
21 that they don't. And I think there's a general feeling
22 among the members of CAPCOA, the air districts who do have
23 bigger staffs as well to kind of help some of the smaller
24 folks, who don't have the staff or the resources. So
25 that's a very good point. We'll continue to do that.

1 BOARD MEMBER RIORDAN: Thank you.

2 CHAIRPERSON NICHOLS: Yes.

3 BOARD MEMBER LOVERIDGE: Just three things.

4 One is impressive and thoughtful overview. And
5 thank you.

6 I guess two kind of questions.

7 One is the question we've got obviously a lot of
8 stories to tell. I guess the question is, how you
9 organize your attention and what do we establish as
10 priorities? And I assume you figured how to do that and
11 do that well.

12 But the last question is really that of outcomes.
13 Rather than talk about all the activities, if I said
14 you're doing an "A" job or you're doing an "F" job, what
15 are the measures? What are the -- and look at the general
16 public. We could look at stakeholders. You look at
17 follow-up -- I mean, what -- at the end of a year, how
18 should we judge whether or not all your goodwill and
19 sophistication has resulted in a successful outreach?

20 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Yeah.

21 And, you know, that's a good question, because we're
22 working in kind of a soft-science field that doesn't
23 necessarily generate the hard numbers that a lot of the
24 data represents among other ARB programs. That's for
25 sure.

1 But, you know, in a very general sense, we look
2 at the number of eyeballs reached. I mean, okay. So we
3 put out an announcement on the ICAT grants that we just
4 approved. If that ran in the Riverside Press Enterprise,
5 if that appeared on Fox News in the Bay Area, we can
6 measure the Nielsen ratings. We can measure the
7 readership, the circulation of that newspaper. And we can
8 also take a look at the web hits. So, you know, that's
9 one way of looking at it.

10 But then also we get a tremendous amount of
11 calls. I've been in the unfortunate position of being the
12 only person in our office when our administrative staff
13 has to take a bathroom break or go to lunch or something.

14 And the amount of calls that we get on a regular
15 basis from people who have read about our stuff, who've
16 read about an enforcement case or who need clarification,
17 on one hand, it takes up a lot of time to track down some
18 of these requests that come in. But it also shows that we
19 are getting the word out.

20 And, again, that's kind of a soft way of looking
21 at it. So maybe the better way is to go back and look at
22 the eyeballs reached concept and look at the number of
23 Nielsen ratings of a TV spot that ran one of our stories
24 or the circulation of a weekly or a daily newspaper that
25 ran with one of our pieces.

1 Does that get to what you were asking, Mayor?

2 BOARD MEMBER LOVERIDGE: It's soft. I mean, it's
3 hard to -- but I think the question often is that there's
4 a lot of extraordinary activity. To what end and how do
5 you begin to measure that?

6 I think AB 32 is the most important thing the
7 State has adopted, at least in my memory. That story
8 needs to be told. But I guess the question, having said
9 that, what's the measurements of the story being told?

10 CHAIRPERSON NICHOLS: You might just mention,
11 Leo, that although State agencies are under very severe
12 constraints when it comes to doing things like polling,
13 which would be an obvious way that a private entity would
14 judge how they were doing with their media expenditures,
15 that we do have access to information that nonprofit
16 organizations that are interested in our work generate.
17 So we do get some feedback from groups to come and tell us
18 how the public is responding to what it is we're doing
19 here.

20 And we pay attention to that information, too. I
21 think there's been -- especially since AB 32 passed,
22 organizations like the Energy Foundation, for example,
23 have funded polling by the Public Policy Institute of
24 California and others that give us at least an indirect
25 window on whether the public is with us or not on

1 different things that we're doing.

2 Dan.

3 BOARD MEMBER SPERLING: I think that was an
4 excellent question. And maybe a part of before you even
5 develop those metrics, you know, one question is who is
6 the target audience here? Because, you know, it said that
7 general philosophy says to inform California citizens and
8 beyond.

9 So, I mean, one question is, is the target
10 audience just the general public? Or is the target
11 audience the specific entities that are the -- you know,
12 being regulated? And that's two different strategies.

13 OFFICE OF COMMUNICATIONS DIRECTOR KAY: It's a
14 little bit of both. And I'll give an example of enhanced
15 vapor recovery.

16 So this regulation, the deadline kicks in April
17 1st. And it requires tens of thousands of gas stations
18 throughout the state to install this additional equipment
19 that's going to capture more VOCs -- smog-forming VOCs.

20 So we want the general public to know about it.
21 We want to know this is how your taxpayer dollars -- we're
22 kind of covering, uncovering every stone to capture every
23 smog-forming emission we can in the state of California.

24 So there's a reason for this. There's a reason
25 why you're going to go and you're going to see an

1 additional retrofit on a gas station.

2 But also that's where the trade publications
3 really come in handy, because that's where we reach out to
4 the specific gas station owners. And I am constantly
5 amazed by the amount of trade publications that not only
6 exist in California, but across the country and across the
7 world.

8 So you literally have convenience store owners
9 weekly that you reach out to, so that they know that there
10 are no surprises. They know this regulation is coming
11 down the pike. Come April 1st, they can't claim I didn't
12 know about this.

13 BOARD MEMBER SPERLING: I think we need to
14 articulate that more clearly, because, you know, that will
15 very much affect what kind of communications programs you
16 put together. And then, you know, you'll want to develop
17 what are the new metrics, even in vague ways, of what
18 those are.

19 You know, one little idea. You know, I'm doing a
20 presentation for ARB tomorrow, and I couldn't find any
21 slides to use kind of to open it up. You know, I thought
22 you have that one page called "Branding ARB." But there
23 is, you know -- I think Stanley sent me something. But
24 you know, we didn't have a logo. As you said, we don't
25 even have a logo. And, I mean, if you're trying to brand

1 it, if you're trying to create an image, simple things
2 like that --

3 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Just to
4 add to that, I was kind of dismayed not long after
5 starting here right around the time that Mary did to, you
6 know -- when I was going around talking to friends and
7 family and even strangers on the street to learn of how
8 many people who didn't know what the ARB was. They hadn't
9 even heard of us.

10 So, you know, I think in the past we've done a
11 really good job of reaching out to the one in ten
12 Californians or maybe two in ten, three in ten who are
13 affected by our regulations.

14 But to those eight or nine out of ten who've
15 never heard of us, that's where the real work lies ahead.

16 BOARD MEMBER SPERLING: I would suggest we think
17 about that a little more. I mean, is that really the goal
18 is to, you know, have 90 percent of Californians know who
19 we are. Maybe it is, but maybe not. And the kind of
20 communication programs you put together are going to be
21 very different.

22 CHAIRPERSON NICHOLS: Right. We do have one
23 witness who's actually asked to speak on this item, Sean
24 Edgar.

25 MR. EDGAR: Chair Nichols and Board members, Sean

1 Edgar on behalf of the Clean Fleets Coalition.

2 And I welcome the opportunity to twitter with
3 you, Leo, and the staff.

4 (Laughter.)

5 MR. EDGAR: Sounds exciting.

6 Just to punctuate Leo's fine presentation as
7 always and just to punctuate a few items from industry's
8 perspective, you typically see me come up before you on
9 behalf of vocational truck associations. And my business
10 over the last nine years that I have been appearing in
11 front of this Board, that mode has gone from one of
12 advocacy to representing truck owners.

13 And in addition to that, in places outside of
14 Sacramento, in exotic places like Bakersfield, Barstow,
15 Eureka, when I came in to talk to them in an engineering
16 capacity and explain ARB rules, oftentimes the public sees
17 me as you, because I must be from ARB if I'm from
18 Sacramento to talk about diesel.

19 My point being that in carrying forward the
20 message of this Board, Leo pointed out correctly, you may
21 reach one, two, three individuals who are affected
22 directly by regulations. And if I see a growth
23 opportunity during this next year, it's the seven, eight
24 or nine or actually ten out of ten who in following with
25 the intent your Board has expressed that in the case of

1 the over-the-road truck rule, in the case of the off-road
2 rule, if ultimately the tremendous costs of the regulation
3 are going to be flow down to the consumer level, then
4 obviously we all have an abiding invested interest to do
5 the best job we can to reach out to the entire public.

6 So just to share a few points. When I came over
7 here nine years ago, it was kind of a Gilligan's Island
8 experiment. You all were talking about doing a trash
9 truck rule. I was working for the Trash Haulers
10 Association on recycling issues. I got to come over and
11 begin to work on the trash truck rule. And nine years
12 later, since we implemented that rule in 2005, I spent
13 over 1,500 hours of my time every year, year after year,
14 on your programs. In some cases, that's a policy advocacy
15 role. In most cases, that's an outreach, education, and
16 talking to people about your rule. Because as Leo is
17 mentioning, you deal with some of the associations and
18 some people that belong to associations, but I meet people
19 every day who call my phone off the hook who ask about
20 your rules that don't happen to belong to an association
21 or they heard about it from someone else.

22 So the constant outreach will be there, because
23 in my own experience, it's been a game of inches over the
24 last five years just on one segment on the trash truck
25 rule. And not to belabor that, but one reason why I think

1 it's critical for we all who work on this on a daily basis
2 to actually help the electronic media get to the right
3 point is because in places like Fresno, as an example,
4 whether we carried forward a package to get recycling and
5 cleaner trucks done, the lead story heading up to the
6 Board of Supervisor's hearing was not that clean trucks
7 and more recycling would happen in Fresno. The story was
8 some 70-year-old dude over in Fig Garden Village hugging
9 his old trash cans because for a few dollars more change
10 was actually going to be bad.

11 And so our education rule needs to be, okay, you
12 know, we do a good job talking through the associations,
13 but the public outreach aspect and in getting to people
14 throughout the community to tell them, well, beyond just
15 the factoids of, well, maybe the over-the-road truck rule
16 or private fleet rule is a penny on a package, okay, maybe
17 that's a good factoid, but that doesn't really explain to
18 the public that every good that comes off a truck
19 beginning in 2010 and ending in 2022, if you're going to
20 get full compliance with your rule, will result in society
21 having to absorb substantial or increased cost.

22 And we tend to do our outreach and we say, well,
23 gee, you know, the trucking companies will figure it out
24 or the regulated entities, they'll talk to their
25 associations. They'll figure it out. Actually, it's more

1 on our obligation and as expressed by the intent of this
2 Board time after time to propel forward to make sure that
3 the public understands that it's also their obligation to
4 make these things happen.

5 Just in conclusion, there are three specific
6 asks, because I will abbreviate my comments here, still
7 three specific asks.

8 One is would be to update your letter -- your
9 Board was gracious to write a letter regularly specific to
10 solid waste recycling issues. And the last time you wrote
11 that letter was in 2006. And that letter refreshes what
12 you intended to happen in solid waste and recycling. As
13 an example, you're going to look at commercial waste
14 recycling. Cal EPA will in terms of the Integrated Waste
15 Management Board. And you're going to continue to have
16 clean truck programs.

17 But part of reminding city and county officials
18 and other people that recycling companies work for that
19 this is a critical program. I'll ask you to refresh the
20 letter that you do, which expresses that it was the intent
21 and expectation of the Board that the system cost --
22 because everything that will be used to deliver solid
23 waste services, the system will have to absorb several
24 hundreds of millions of dollars of new costs just in that
25 arena. So I'll ask you to do that. If you would consider

1 that, that would be appreciated.

2 With regard to the public fleet rule direction on
3 the economical review, it would be great -- and I know
4 you'll do a good job of publicizing workshops that will go
5 into that -- but actually taking from those workshops and
6 whatever economic study, I know staff will continue to dig
7 deeper in as you ask them to do.

8 Sometime later this year, they'll come forward
9 with a more extended discussion about the economic
10 concerns associated with our December hearing. And so
11 publicizing the workshops and getting the conclusions out
12 from those workshops to the public, with the focus being
13 at the consumer level, so that consumers understand what
14 those impacts are.

15 And lastly, I'll just ask that with regard to the
16 off-road rule, you know, we know that the budget
17 deliberations resulted in some particular phasing for the
18 large fleets. And we've been in communication with Mr.
19 Goldstene and your staff on the issue of how to get
20 information out that's practical and short-term. So I
21 know Mr. Goldstene and Mr. White and Mr. Cackette will
22 work with us to publicize to the regulated community what
23 the phasing of that off-road implementation new schedule
24 for the large fleet.

25 So with that, thank you for the report. I'll

1 look forward to the twittering. And thank you, as always,
2 for getting us good information to get out. Thank you.

3 CHAIRPERSON NICHOLS: Thank you.

4 I think that concludes our business for the day.

5 OFFICE OF COMMUNICATIONS DIRECTOR KAY: Madam
6 Chair, could I just add one quick thing?

7 Having watched the Academy Awards recently, and I
8 always feel bad for the people who don't get thanked. So
9 we have the staff back there, our very great staff at the
10 communications office. I have Mary Salas-Fricke; Gennet
11 Paauwe, the Deputy Director; Sarah Dalton, speech writer;
12 Dimitri Stanich, long time PIO; and Padmavathi Lingam, our
13 new web master.

14 CHAIRPERSON NICHOLS: Thank you very much.

15 (Applause.)

16 CHAIRPERSON NICHOLS: All right. I hear a motion
17 for adjournment and a second.

18 All in favor?

19 (Ayes.)

20 CHAIRPERSON NICHOLS: Thank you.

21 (Thereupon the California Air Resources Board
22 adjourned at 1:52 p.m.)

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1 CERTIFICATE OF REPORTER

2 I, JAMES F. PETERS, a Certified Shorthand
3 Reporter of the State of California, and Registered
4 Professional Reporter, do hereby certify:

5 That I am a disinterested person herein; that the
6 foregoing California Air Resources Board meeting was
7 reported in shorthand by me, James F. Peters, a Certified
8 Shorthand Reporter of the State of California, and
9 thereafter transcribed into typewriting.

10 I further certify that I am not of counsel or
11 attorney for any of the parties to said meeting nor in any
12 way interested in the outcome of said meeting.

13 IN WITNESS WHEREOF, I have hereunto set my hand
14 this 5th day of March, 2003.

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JAMES F. PETERS, CSR, RPR

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Certified Shorthand Reporter

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