MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

JOE SERNA, JR. BUILDING

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

BYRON SHER AUDITORIUM, SECOND FLOOR

1001 I STREET

SACRAMENTO, CALIFORNIA

THURSDAY, FEBRUARY 26, 2009

9:04 A.M.

JAMES F. PETERS, CSR, RPR
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Mrs. Barbara Riordan

Mr. Ron Roberts

Dr. Daniel Sperling

Dr. John Telles

Mr. Ken Yeager

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Mr. Bart Croes, Chief, Research Division

Dr. Susan Fischer, Research Division

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

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Mr. Leo Kay, Director, Office of Communications

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Mr. Dale Trenschel, 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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PROCEEDINGS

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

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

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

BOARD CLERK VEJAR: Dr. Balmes?

BOARD MEMBER BALMES: Here.

BOARD CLERK VEJAR: Ms. Berg?

Ms. D'Adamo?

BOARD MEMBER D'ADAMO: Here.

BOARD CLERK VEJAR: Ms. Kennard?

Mayor Loveridge?

Ms. Riordan?

BOARD MEMBER RIORDAN: Here.

BOARD CLERK VEJAR: Supervisor Roberts?

Professor Sperling?

BOARD MEMBER SPERLING: Here.

BOARD CLERK VEJAR: Dr. Telles?

Supervisor Yeager?

BOARD MEMBER YEAGER: Here.

BOARD CLERK VEJAR: Chairman Nichols?

CHAIRPERSON NICHOLS: Here.

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

CHAIRPERSON NICHOLS: Thank you.

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

I have a couple announcements to make.

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

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

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

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

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

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

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

Mr. Goldstene, would you please introduce this item.

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

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

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

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

Patrick.

(Thereupon an overhead presentation was Presented as follows.)

DR. WONG: Thank you, Mr. Goldstene.

Good morning, Chairman Nichols and Members of the Board.

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

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

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

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

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

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

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

PM exposure has been associated with increased

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Thank you very much for that presentation.

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

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

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

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

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

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

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

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

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

(Laughter.)

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

BOARD MEMBER BALMES: I'm actually pleased that

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

CHAIRPERSON NICHOLS: Okay. Thank you.

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

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

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

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

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

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

RESEARCH DIVISION CHIEF CROES: This is Bart Croes.

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

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

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

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

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

CHAIRPERSON NICHOLS: Thank you.

Any other questions or comments?

If not, thank you very much.

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

All right. The next item that we will be

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

Mr. Goldstene.

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

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

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

Susan.

DR. FISCHER: Thank you, Mr. Goldstene.

(Thereupon an overhead presentation was Presented as follows.)

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

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

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

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

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

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

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

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

projects.

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

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

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

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

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

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

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

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

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

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

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

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DR. FISCHER: To support control of ozone, we

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

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

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

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

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

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

In a collaborative effort with other State

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

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

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

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

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

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

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

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

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

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

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

climate and criteria air pollutant control.

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

We recommend that you approve these research proposals.

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DR. FISCHER: Thank you for your attention.

We'd be happy to answer any questions.

CHAIRPERSON NICHOLS: Questions?

Mr. Yeager.

BOARD MEMBER YEAGER: Thank you.

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

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

I sit on the ABAG certainly dealing with land

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

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

You can answer that any way you want.

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

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

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

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

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

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

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

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

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

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

Thank you.

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

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

BOARD MEMBER YEAGER: Thank you.

BOARD MEMBER TELLES: Follow-up question.

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

BOARD MEMBER TELLES: Just an informational question.

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

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

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

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

CHAIRPERSON NICHOLS: Dr. Balmes.

BOARD MEMBER BALMES: Well, just a follow-up

comment to Lynn's.

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

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

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

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

CHAIRPERSON NICHOLS: Thank you, Lynn.

Any other comments or questions from the Board?

If not, could I ask --

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

(Laughter.)

CHAIRPERSON NICHOLS: Good.

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

CHAIRPERSON NICHOLS: Thank you very much.

BOARD MEMBER BALMES: I'll second that.

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

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

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

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

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

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

All right. All those in favor please say aye?

(Ayes.)

CHAIRPERSON NICHOLS: No?

Very good. Thank you very much.

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

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

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

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

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

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

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

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

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

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

analysis and allowance allocation issues.

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

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

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

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

Steve.

(Thereupon an overhead presentation was Presented as follows.)

MR. CLIFF: Thank you, Mr. Goldstene.

Good morning, Chairman Nichols, members of the Board.

This morning, we are providing an update on the implementation of the Climate Change Scoping Plan and an update on the early action measures.

We will also propose the appointment of new and replacement members to the Economic and Technology Advancement Advisory Committee, as you mentioned.

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MR. CLIFF: As you know, AB 32 was signed in September 2006, and it's been a very busy two-and-a-half years for ARB since then.

In December, you voted to adopt the Scoping Plan for implementing AB 32. The Scoping Plan represents a pioneering effort to address climate change. The plan is a framework for reducing greenhouse gas emission using a comprehensive combination of market-based and source-specific regulations. But that's simply the first phase. AB 32 provides just two years until January 2011 for the State to complete rule makings to implement the recommendations contained in the plan.

Implementing the plan will require ARB to continue our broad coordination with other agencies, stakeholders, and the public.

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MR. CLIFF: With the new administration in Washington, the opportunity for California's leadership is

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

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

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

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

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

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

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

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

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

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

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

I also want to point out that the Governor's

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

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

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

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

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

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

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

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

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

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

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

regional targets for reducing greenhouse gas emissions from passenger vehicles.

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

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

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

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

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

Both of these regulations are discrete early

action measures, which must be enforceable by 2010.

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

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

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

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

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

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

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

The Board has adopted 13 early actions so far --

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

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

MR. CLIFF: My apologies.

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

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

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

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

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

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

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

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

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

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

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

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

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

Next slide.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Other analyses are specifically called for in AB

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

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

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

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

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

thinking is refined and new information comes to light.

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

The first of these meetings is planned for early April.

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

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

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

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

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

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

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

Thank you.

CHAIRPERSON NICHOLS: Thank you for the presentation.

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

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

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

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

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

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

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

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

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

(Laughter.)

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

events that are going on.

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

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

MR. RYAN: There we are.

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

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

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

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

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

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

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

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

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

Thank you.

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

All right. Any comments, questions here?

Dr. Sperling, then Mayor Loveridge.

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

I do think everything we do here should support

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

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

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

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

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

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

CHAIRPERSON NICHOLS: We'll get copies made.

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

important part of the success of this agency.

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

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

BOARD MEMBER BALMES: I would also endorse that position.

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

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

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

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

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

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

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

EXECUTIVE OFFICER GOLDSTENE: Sure, Chairman Nichols.

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

CHAIRPERSON NICHOLS: Thank you.

Any other questions?

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

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

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

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

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

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

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

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

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

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

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

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

Any other comments?

Ms. D'Adamo.

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

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

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

And then I always have a challenge with cap and

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

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

CHAIRPERSON NICHOLS: Go ahead.

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

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

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

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

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

(Laughter.)

CHAIRPERSON NICHOLS: Sorry.

(Laughter.)

CHAIRPERSON NICHOLS: Other comments?

Yes, Dr. Telles.

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

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

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

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

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

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

(Laughter.)

CHAIRPERSON NICHOLS: We're doing this together.

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

BOARD MEMBER TELLES: Just one final question on ETAAC.

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

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

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

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

Yes, Dr. Balmes.

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

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

BOARD MEMBER BALMES: Yes.

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

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

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

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

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

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

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

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

Yes, Dr. Telles.

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

(Laughter.)

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

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

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

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

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

participation.

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

CHAIRPERSON NICHOLS: There are more Dan Sperlings out there?

(Laughter.)

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

CHAIRPERSON NICHOLS: Good.

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

CHAIRPERSON NICHOLS: Thank you.

Mrs. Riordan.

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

CHAIRPERSON NICHOLS: Do we have a second?

BOARD MEMBER BALMES: Second.

CHAIRPERSON NICHOLS: All in favor say aye?

(Ayes)

CHAIRPERSON NICHOLS: Any opposition?

Great. Thank you.

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

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

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

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

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

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

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

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

(Thereupon an overhead presentation was Presented as follows.)

MR. TRENSCHEL: Thank you, Mr. Goldstene. Now I'm on.

Thank you, Mr. Goldstene.

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

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

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

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

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

systems.

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

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

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

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

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

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

Now I will discuss the proposed regulations for semiconductor operations.

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

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

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

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

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

Some operations have continuous monitoring equipment to indicate where chamber cleaning is needed. Others perform cleaning after a certain number of wafers are processed.

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

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MR. TRENSCHEL: This slide shows that the global warming potentials of gases used by semiconductor operations are thousands of times greater than carbon dioxide. All of these gases contain flourine, which is an essential element in semiconductor processing.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRPERSON NICHOLS: I see. Okay. Thanks.

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

Okay. Sorry.

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

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

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

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

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

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

relies on existing strategies to reduce emissions.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

carbon dioxide equivalent per year.

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

Staff recommends that the Board adopt the proposed regulation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

So thank you for your hard work.

MEASURES ASSESSMENT BRANCH CHIEF FRY: Thank you.

CHAIRPERSON NICHOLS: Other questions?

Yes.

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

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

EXECUTIVE OFFICER GOLDSTENE: Two witnesses.

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

BOARD MEMBER SPERLING: Shall we do that first?

CHAIRPERSON NICHOLS: Yes. We might as well.

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

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

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

(Thereupon an overhead presentation was Presented as follows.)

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

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

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

Next slide.

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

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

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

Next slide, please.

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

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

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

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

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

The other option -- next slide, please.

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

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

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

something that would be better for the environment.

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

Thank you.

CHAIRPERSON NICHOLS: Thank you.

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

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

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

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

CHAIRPERSON NICHOLS: But they're expressing

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

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

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

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

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

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

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

using and comply.

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

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

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

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

MR. BALLIS: Yes.

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

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

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

We have, you know, already submitted a comment

letter.

I should have brought some water up here.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

I'd also like to point out that this reduction

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

CHAIRPERSON NICHOLS: I'm going to --

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

Thank you.

CHAIRPERSON NICHOLS: Thank you.

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

So we'll start with Mayor Loveridge.

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

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

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

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

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

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

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

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

company do to comply?

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

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

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

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

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

CHAIRPERSON NICHOLS: Okay. Thank you.

Do you want to now raise your serious concerns?

That completes the testimony.

Thank you.

MR. BALLIS: Thank you.

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

CHAIRPERSON NICHOLS: Okay.

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

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

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

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

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

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Except maybe the authors of

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

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

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

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

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

CHAIRPERSON NICHOLS: In addition?

EXECUTIVE OFFICER GOLDSTENE: In addition to this one.

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

CHAIRPERSON NICHOLS: Because we think we need both.

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

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

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

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

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

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

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

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

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

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

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

Questions? Comments?

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

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

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

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

CHAIRPERSON NICHOLS: It's proportionate to their contribution.

STATIONARY SOURCE DIVISION CHIEF FLETCHER: All the way down.

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

Well, here we are.

Yes?

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

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

I was Googling this morning trying to refresh my

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

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

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

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

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

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

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

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

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

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

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

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

MEASURES ASSESSMENT BRANCH CHIEF FRY: Of the total production?

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Thank you.

MR. BALLIS: Can I respond?

CHAIRPERSON NICHOLS: You can.

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

One thing to point out is that -- very important

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

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

CHAIRPERSON NICHOLS: Okay. Thank you.

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

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

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

set before us in AB 32.

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

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

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

So Mr. Loveridge.

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

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

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

CHAIRPERSON NICHOLS: Okay. Mrs. Riordan.

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

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

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

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

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

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

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

So I'll still be around.

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

CHAIRPERSON NICHOLS: All right. Thank you very much.

OMBUDSMAN QUETIN: Thanks.

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

Does anybody have any ex partes they want to disclose?

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

CHAIRPERSON NICHOLS: Okay. Anybody else?

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

BOARD MEMBER YEAGER: No. They just had two

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

CHAIRPERSON NICHOLS: Okay. Thank you.

BOARD MEMBER D'ADAMO: I have a question.

CHAIRPERSON NICHOLS: Hang on just a second. We're still continuing down the end here I thought.

BOARD MEMBER TELLES: I don't have any ex partes. I just wanted to ask one other question before you totally close things.

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

I don't have any ex partes either.

All right.

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

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

a little surprised they were uncomfortable with it.

CHAIRPERSON NICHOLS: Okay.

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

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

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

CHAIRPERSON NICHOLS: That's a good point.

Staff have any problem with doing that?

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

Of course, EPA, under the new administration, is

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

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

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

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

BOARD MEMBER D'ADAMO: Second.

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

(Ayes.)

CHAIRPERSON NICHOLS: And opposed?

All right. Thank you very much, everybody. Thanks, staff. These things are tough as we've seen.

BOARD MEMBER SPERLING: Chairman Nichols, having

done that, I have another big idea here.

CHAIRPERSON NICHOLS: Oh, great.

(Laughter.)

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

(Laughter.)

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Okay. Think about it.

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

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

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

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

BOARD MEMBER SPERLING: I'm thinking more of an

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

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

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

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

And Mr. Goldstein will introduce this item.

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

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

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

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

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

Elizabeth.

(Thereupon an overhead presentation was Presented as follows.)

MS. SCHEEHLE: Thank you, Mr. Goldstene.

Good morning, Madam Chair and members of the Board.

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

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

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

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

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

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

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

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

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

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

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

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

two regulations and the available mitigation options are different.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

state.

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

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

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

I will now describe each sector covered by this regulation.

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

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

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MS. SCHEEHLE: We looked into testing a few hoods

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The second criteria is that there are no

alternatives.

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

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

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

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

potential and there are exempt uses.

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

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

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

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

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

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

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

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

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

Staff therefore recommends that the Board approve the proposed regulation.

That concludes my presentation. Thank you for your attention.

CHAIRPERSON NICHOLS: Thank you.

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Thank you.

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

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

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

that?

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

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

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

CHAIRPERSON NICHOLS: Mr. Loveridge.

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

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

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

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

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Yes.

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

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

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

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

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

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

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

MS. SCHEEHLE: Yes.

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

MS. SCHEEHLE: No.

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

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

MR. FRIEDMAN: I have a different hat today.

CHAIRPERSON NICHOLS: Department of Defense.

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

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

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

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

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

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

if possible.

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

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

So I'm available for any questions.

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

Do you have questions?

BOARD MEMBER TELLES: I have a question.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAIRPERSON NICHOLS: Well, and we know that the

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

Thanks for the clarification. Appreciate it.

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

Mr. Simonelli followed by David Armstrong and Kurt Werner.

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

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

The sector of our industry impacted by this regulation are three facilities. They're all sand or investment casting facilities all with magnesium. California does not have any magnesium ingot processors. California does not have any magnesium die casters. The last dye caster is outsourcing to Minnesota.

Our current competition, even though it is worldwide, is currently Mexico. Nogales, Mexico last year took about $3 million of our work, and so we're concerned about that as a threat.

CMC, our organization, submitted comments on February 5th. So I'm not going to repeat those comments. But I do want to provide an update and have the ability to

answer questions from the Board.

I'm going to hit on two points. The first point is the alternatives that have been laid out by staff. The first alternative, which is fluorinated ketone, has never been tested in our industry. And so when we're looking at alternatives based on the staff report, fluorinated ketone is something that for us as sand casters and investment casters we have no data. We have no information. And for us, it's going to be difficult to say that if a rule was passed today that we can use that.

We currently have no information, and I don't believe the staff has information on price of fluorinated ketone. We have no information of availability of fluorinated ketone.

It took us about three months to try to get -- there's only a single producer of fluorinated ketone to allow us to even schedule a testing. And so the first test is going to be done next week. And so the rule that is in front of you or the proposal in front of you, even though it does list fluorinated ketone, for us it has never been tested.

The other option of SO-2, which has been referenced, for our process, we are not diluting it. There's been a reference that it's been diluted. That has been done in the die casting industry, which is different

from us as sand casters and investment casters. And SO-2 is something that we got away from about 25 years ago.

SO-2 is harmful to our equipment. It's harmful to the buildings, which is a safety issue. We have to put our workers on respirators because it is an inhalation issue. And it's also probably an issue for the air district, because I met with one of the workers and asked them, you know, what does this do, that SO-2? And he goes, take a barrel of rotten eggs and try to melt it at about a thousand degrees, and that's the odor.

We have one facility that LA Unified put a school near, and we obviously concerned about the smell of SO-2. We're are all in environmental justice zones. And so for looking at SO-2 as an alternative is something for us that we would use if it meant closing our doors or using that, but quite honestly is not something that we see as an option.

CHAIRPERSON NICHOLS: Mr. Simonelli, you've used your three minutes. If you could just sum up, please.

MR. SIMONELLI: Yes.

Our last point -- and I will sum up -- is that once we test fluorinated ketone, even if we accept that as an industry and you pass it as a Board, it does not mean that our customers will accept this.

We have to go to the Department of Defense, the

FAA. As you saw, it took three months to get a letter for us to get them to take a flight-critical application and to say yes, use something that you tested last week, it's not going to fly.

CHAIRPERSON NICHOLS: So your industry's concern is you just don't think you should be regulated at all?

MR. SIMONELLI: No. No. I was going to get to that in the end. At the end, similar to the gentleman before us, the phase out in 2020 is something that we can work towards. I've already met with staff and said we're willing to start to share the data with the fluorinated ketone.

If that works, our next step is to take all the thousands of products that we make and go to our customers and see if they are willing to accept this as a change out. And we'll share that information.

But I think we just want to see that there's an openness on both sides to pursue this.

CHAIRPERSON NICHOLS: Thank you. Appreciate that.

Okay. David Armstrong and then Kurt Werner. That's the end of my list.

MR. ARMSTRONG: Good morning, Madam Chair, members of the Board. David Armstrong, Lawrence Livermore National Laboratory.

As you know, research is international. On any given day, there could be a break-through experiment somewhere in the world, China, Russia. It could be a cancer cure. It could be alternative fuel. It could be anything from under the sun.

As soon as that kind of break through happens, researchers want to replicate the experiment that they saw published. But if that experiment involved even a microgram of sulfur hexafluoride, there is no university or laboratory in the State of California that would be able to replicate that experiment without waiting six months for approval -- roughly six months for approval of that replication.

Therefore, I'm requesting that there be some sort of de minimis allowance for research in this regulation. And my comments are based on a strict reading of the regulation. I heard earlier that there might be some five-year allowance or something for research. It's not in the regulation. So I have to comment on what's actually in writing in the regulation.

Thanks for the opportunity to comment and thanks for the great work that you're doing.

CHAIRPERSON NICHOLS: Thank you.

Kurt Werner.

MR. WERNER: Good morning, Chairman Nichols,

members of the Board. I'm Kurt Werner from 3M. I want to support the measure and thank the staff for their work.

3M manufactures the fluorinated ketone that is now being used in ingot casting and die casting that's used in the largest dye caster in North America. We have every reason to believe that it can be used in investment casting and sand casting.

And I just want to reiterate the comments from Mr. Simonelli that the trials will start at a local sand caster -- California sand caster next week. And we will work with the staff to report those results and optimize use of material as necessary, but we have every expectation that it can be made to work in those operations as well.

CHAIRPERSON NICHOLS: Thank you very much. Glad to hear about this work that's going on.

That concludes my list of witnesses, unless there's anybody else who signed up?

Okay. So we can move to a discussion at this point.

Yes, Dr. Balmes.

BOARD MEMBER BALMES: I have a specific question for the staff.

So SF-6 is used in occupational health in terms of leak testing for respirators. Actually, you know, I'm

an occupational physician as well as pulmonary physician. I know about this. And I know there are alternatives. But do you have any sense of how much -- how frequently SF-6 is used as a leak test tracer gas as opposed to the alternatives that wouldn't necessarily have global warming impacts?

MS. SCHEEHLE: I couldn't give you an exact percentage. But I know that both sulfur hexafluoride and the perfluorocarbons are often used for those sorts of tracer purposes. So both are commonly used.

BOARD MEMBER BALMES: Has there been any discussion with occupational health and safety folks about the fact that this is coming down the pike?

MS. SCHEEHLE: CalOSHA has been involved in our discussions, although mainly on the fume hood testing side, but we have involved them in the process.

BOARD MEMBER BALMES: So do they have any comments about leak testing? Because this would prohibit use of SF-6 for leak testing in terms of respirators.

MS. SCHEEHLE: We have not had any comments on that to date. And if it is something where only SF-6 could be used, that again is something that could go through the exemption process.

BOARD MEMBER BALMES: I think there are alternatives. I'm more concerned about the word getting

out and people having to gear up to deal with the alternative, because we are actually talking about protection of workers in this regard.

MS. SCHEEHLE: One of the -- because this is such a diverse sector, we have part of the regulation with distributors to spread word and send a letter to each of the people who buy SF-6 on the regulation. And also we can work with CalOSHA or other organizations to make sure that specific stakeholders are notified.

BOARD MEMBER BALMES: That's really what I'm asking for, working with CalOSHA and other stakeholders.

BOARD MEMBER TELLES: I have a comment.

CHAIRPERSON NICHOLS: Yes, please.

BOARD MEMBER TELLES: I would be totally in favor of the military exemption if the military talks with the federal government.

The reason -- I mean, the federal government has positioned itself to regulate greenhouse gases. And I think if the military is using a greenhouse gas, they ought to get the clearance from the federal government. And if there's no other alternative, I'd be totally in favor of the military exemptions. But I think first the two parts of the federal government need to communicate there.

CHAIRPERSON NICHOLS: Any other questions or

comments?

Yes, Mayor Loveridge.

BOARD MEMBER LOVERIDGE: Well, let me just repeat what I said before and maybe ask the staff to comment.

It seems to me that it is in the best public interest for us to be the leading research place in the country. I don't know how significant -- I take the appearance of somebody from -- it's not simply bureaucracy. I think he's representing the disparate faculty views that exist on the campuses. Lawrence Lab made the same point.

I'm troubled by creating regulations, which in some ways perhaps can slow down or anchor or frustrate the ability of this state to be among the leaders in research. And so I don't know whether this is significant or not.

CHAIRPERSON NICHOLS: We have a group of folks on this Board who have different experiences, I suspect, in this area. Maybe we should talk about what the solution should be.

Because I think we all agree with you. It's not that anybody wants to see us in a position where we're putting road blocks in the path of science or of scientists.

On the other hand, we all know -- at least I can speak for myself having worked at UCLA, there's cylinders

of chemicals lying around in a lot of places without necessarily the same kind of controls on them that are required in other places. And you have to have some sort of procedures for knowing what's there and all the campuses do that I'm aware of. I mean, they do their best to try to keep a handle on what they're using and what's going on.

There needs to be a simple preferably up-front process I would view -- I would say where research institutions are presumed to be allowed to use a small amount, but where they have to come in and demonstrate that they know what it is and where it is and that they're, you know, using it in places that are really for research and not just for keeping it around in case they might happen to feel like using it some day.

And you know, I mean, there's a way to do this that surely is not unduly burdensome, but that sends a positive signal that we want our research institutions to be able to have small amounts that they need for research purposes without having to go through a six-month permit process to get that permission.

It's just a shifting of the burden, but I think it needs to be in the regulation. At least, that would be my view.

GREENHOUSE GAS TECHNOLOGY & FIELD TESTING SECTION

MANAGER HERNER: We certainly appreciate that comment. And we think that we have done that already.

The reason why it wasn't put in up front was that we didn't get much information from the researchers. We're simply told that they would like an exemption.

And as you mentioned, through the exemption process that we put in place, we'll be able to ask them to tell us, you know, about how much they used, have it in the reporting, and all these kinds of things. That's really what we're looking for.

CHAIRPERSON NICHOLS: Well, let's look at the language. I'd like to actually read that portion of the regulation. I think we all would. And we'll see if it needs to be addressed before we actually vote on it.

I'd like to see if there are other items that Board members want to see addressed. And what I think I'm going to actually do is to take a lunch break and come back for the vote on this item after half an hour. But we'd like to give you some instructions about what to work on during that period.

BOARD MEMBER RIORDAN: Madam Chair.

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER RIORDAN: I feel very strongly about the Department of Defense request. I think it should be granted with their commitment to find a solution by the

2020, and if not before. And they may be able to do that. I just think without a lot of knowledge, but I can sort of think about how this might be used. I think it's all in our best interests.

CHAIRPERSON NICHOLS: Is there general consensus on that point?

Supervisor Roberts, hang on just a second.

BOARD MEMBER ROBERTS: I'm having trouble getting acknowledged down here.

MR. FRIEDMAN: Madam Chair, if I might.

I did talk to the Deputy Air Force Secretary just now, and he will commit to working with the U.S. EPA through their establishment processes on this in the future. So I just wanted to pass that on.

CHAIRPERSON NICHOLS: Thank you.

BOARD MEMBER ROBERTS: Well, first of all, we have some newer members here. And I want to share Mr. Friedman has been coming before us for a long time representing the military. And I don't ever remember an item where they asked for a wholesale exemption -- nor had used -- I don't mean it in any derogatory sense -- an excuse of national security. They've tried to work with us whatever our rules may have been and to work cooperatively.

So this is unusual to see this kind of request.

And, you know, I don't see a need to refer this back to anybody else. I would feel comfortable going ahead and doing exactly what they're asking of us to defer -- hopefully an earlier date than 2020. But if not, by 2020 that we would accomplish that.

CHAIRPERSON NICHOLS: Well, that's going a proposed amendment then to the rule. But I sense that there's considerable support for that on the Board.

BOARD MEMBER ROBERTS: Can I finish?

CHAIRPERSON NICHOLS: Please.

BOARD MEMBER ROBERTS: Secondly, with respect to the UC or any researchers, I get concerned when I see sort of an appeal in such a discretionary way to, you know, some type of bureaucracy out there that's going to make a decision in terms of research or other things, because there's a lot of values that are perhaps -- I'd like to see some specific well-laid-out program that we can approve and not leave that to some faceless entity to decide at some later date as to whether one researcher deserves it and another does.

This thing is way too loose right now, and I wouldn't support it in the form in which it's before us.

CHAIRPERSON NICHOLS: Thank you.

Any other comments before we take a brief lunch break?

EXECUTIVE OFFICER GOLDSTENE: I'd like to point out on the blanket exemption, I know that the Board is leaning towards supporting the DOD request. But we do believe -- and we'll show you the language during lunch -- that the exemption process has structured -- or during the --

BOARD MEMBER ROBERTS: Not during lunch.

EXECUTIVE OFFICER GOLDSTENE: Not during lunch. Sorry. When you review the language, you will see that the exemption process also requests seeking an exemption to show why no alternative would work and to come up with possible mitigations. And so we do think that's important, and it is challenging, particularly when the issue of national security is being relayed to us. But I just want to point that out.

CHAIRPERSON NICHOLS: Well, appreciate the effort. But if they're saying that it's classified material they can't share with us, there's nothing we can do about that, at least not in a timeframe that's going to result in a decision.

So we're kind of stuck.

BOARD MEMBER RIORDAN: I think we have to take them at their word.

I would agree with Supervisor Roberts. They have been before us many, many times, and they have been very

good partners, really truly.

CHAIRPERSON NICHOLS: Okay. Let us recess until a quarter of 1:00, please.

(Thereupon a lunch break was taken.)

AFTERNOON SESSION

CHAIRPERSON NICHOLS: So I think we're going to resume, if I could get the staff to take their places.

Okay. We're back on the agenda item that we were dealing with before we broke for lunch, the sulfur hexafluoride from non-semiconductor and non-utility applications rule.

And before we broke, I did not close the record. So I want to do that now. But I also want to indicate that the record will be reopened when the 15-day notice of public availability is issued. Written or oral comments received after this hearing date, but before the 15-day notice is issued, will not be accepted as part of the official record on this item.

When the record is reopened for the 15-day period, then the public may submit written comments on the proposed changes, which will be considered and responded to in the Final Statement of Reasons for the regulation.

I want to make that clear at this time, because I'm expecting coming out of this there will be a 15-day notice and there will be changes in the proposed regulation. And there are two of them that I think I've heard. One of them I think is relatively easy to state, which is that the Board will direct the staff to grant the request of the Department of Defense along the exact lines

that they proposed.

The second, which is a little more complicated, deals with research. And I want to propose the following, because I think it's the simplest. But I don't think we can do it right now.

I want to propose that in the 15-day notice that the staff will amend the regulation to create a new exemption for research, and that research will be defined. And that there will be an exemption for research, but subject to certain conditions. And the conditions would include the monitoring and the reporting and a statement at the time that that is done of what the research was that this was being used for, so we don't have stockpiling or inappropriate uses going on and we know how much is out there. And we know that it really is being used for research.

So the university or researchers institute, or whatever it is, is still going to have an obligation here to be paying attention to this material, which I know they're capable of doing because they do it for other things. But the presumption is that there is an ability for researchers to get their hands on small amounts. Nobody is really using large amounts of this stuff anyway for any legitimate research purpose, And we're not going to judge the quality of the research, the value of the

research, or whether the person went to the right university or anything like that.

I think that's about the fairest way to do this. And if the Board members -- I see some head nodding -- are willing to go along, I think we should move along here.

Okay. So with that, do we need to do anything else before we vote? We need to do the ex partes again I guess. Are there any ex partes on this one?

None to report. Is the staff -- do you understand?

EXECUTIVE OFFICER GOLDSTENE: I want to just make sure the staff didn't have any questions and we understand.

CHAIRPERSON NICHOLS: You understand, okay. Great. In that case then, can we move this item?

BOARD MEMBER LOVERIDGE: So moved.

BOARD MEMBER BALMES: Second.

CHAIRPERSON NICHOLS: All those in favor say aye?

(Ayes.)

CHAIRPERSON NICHOLS: Opposed?

Terrific.

EXECUTIVE OFFICER GOLDSTENE: Madam Chairman, I'd just like to thank the staff for their work on this and point out that Elizabeth, who presented today, was a member of the IPCC Panel that won the Nobel Prize for

climate research. I thought the Board members would like to know that.

CHAIRPERSON NICHOLS: We have our own Nobel Prize winner here at the Air Resources Board. Thank you very much. So this is really tough, and you did a tremendous job of managing a very complicated project. So thank you. Thank you.

Okay. The next item then is a report -- we're back to regular world air pollution -- on the designation recommended for the revised 8-hour ozone standard.

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols. As you're aware, the U.S. EPA recently revised the 8-hour ozone standard. As a first step in implementing this standard, states are required to submit recommendations for area designations. These recommendations are due by March 12th of this year.

Because the standard is now more stringent, we see more areas violating the standard and designated as nonattainment. The new nonattainment areas are rural in nature and are dominated by transport from upwind urban areas. As a result, their improvement will depend on upwind emission reductions and statewide strategies.

With these programs, we should continue to see overall improvements in air quality throughout the state.

I'd like to introduce Marcie Nystrom who will

summarize the staff recommendations. Marcie.

(Thereupon an overhead presentation was Presented as follows.)

AIR POLLUTION SPECIALIST NYSTROM: Good afternoon, Chairman Nichols, members of the Board.

Today, I'll be summarizing our nonattainment area recommendations for the 2008 federal 8-hour ozone standard.

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AIR POLLUTION SPECIALIST NYSTROM: U.S. EPA revised the federal 8-hour ozone standard in March of last year. This revision lowered the standard from 0.08 parts per million to 0.075 parts per million.

This revision triggers a new round of area designations. The first step in this process is determining which areas attain the revised standard and which areas do not.

States must submit recommendations to U.S. EPA for area designations by March 12th of this year. EPA will then review the recommendations and make final designations by March 2010.

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AIR POLLUTION SPECIALIST NYSTROM: Because the revised standard was set at a lower level, all areas that were nonattainment for the old standard will continue to

be nonattainment for the new more health protective standard.

As you can see on the map, these continuing nonattainment areas cover the major urbanized portions of California, as well as adjacent downwind areas that are impacted by transport.

In 2007 and 2008, California submitted new ozone SIPs for many of these areas, with a few more to follow this year.

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AIR POLLUTION SPECIALIST NYSTROM: To determine whether additional areas violate the new standard, we reviewed air quality data collected during 2006 through 2008.

As part of this process, we must also propose boundaries for the new nonattainment areas. U.S. EPA guidance includes nine factors to consider. These include evaluation of air quality in the surrounding region, emission sources, population and growth patterns, and weather-related and geographic influences.

The default designation area is a county. However, U.S. EPA does allow for smaller areas if appropriate. Because our counties here in California are so large and diverse in terms of air quality, boundaries other than county lines make sense in some cases.

Based on our analysis, we are recommending six new nonattainment areas. The increased stringency of the standard brings in new areas that are increasingly rural and remote. The ozone concentrations in all of the new areas are dominated by transport from an upwind area, and their attainment will be dependent on ARB's statewide strategies, as well as upwind district controls.

However, because their ozone problems are typically less severe, we generally expect they will reach attainment before their upwind neighbors.

I will next provide a brief overview of each of these six areas.

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AIR POLLUTION SPECIALIST NYSTROM: The first area is eastern Kern County. Most of eastern Kern, as shown in the yellow, is already nonattainment. We recommend expanding the existing nonattainment area to include the small orange area in the northeast part of the county, as monitoring data showed this portion also violates the new standard.

Air quality throughout eastern Kern is impacted by transport from both the South Coast and the San Joaquin Valley.

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AIR POLLUTION SPECIALIST NYSTROM: The next two

areas are isolated high elevation areas. They are Tuscan Buttes in Tehama County and Pinnacle's National Monument in San Benito County.

These areas are showing violations due to transport and have no emission sources other than a few roads. Because of the nature of these areas, we recommend boundaries that include only the area where violations occur.

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AIR POLLUTION SPECIALIST NYSTROM: The Tuscan Buttes' monitor is located at the top of the buttes in an undeveloped area above 1,800 feet elevation. This monitor was sited to study transport impacts, and areas surrounding the site do not violate the standard. Therefore, we recommend the Tuscan Buttes nonattainment area be limited to the top of the buttes where violations occur.

This is similar to the approach U.S. EPA used in designating the Sutter Buttes under the previous 8-hour standard.

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AIR POLLUTION SPECIALIST NYSTROM: Further south, we have Pinnacles National Monument. The monument is in an area of rugged terrain in the coast range east of Monterey Bay.

This is another elevated transport impacted site. The surrounding monitors at lower elevations all meet the standard.

Previous transport studies show that the ozone violations at Pinnacles are overwhelmed by transport from the San Francisco Bay Area.

We're recommending the nonattainment area therefore be limited to that portion of the national monument located in San Benito County.

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AIR POLLUTION SPECIALIST NYSTROM: The remaining three new nonattainment areas shown here in orange are all rural transport areas. They include eastern San Luis Obispo County, Southern Inyo County, and expanded portions of San Bernardino County.

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AIR POLLUTION SPECIALIST NYSTROM: Although San Luis Obispo County has a population of more than 250,000, virtually all of it is concentrated along the coast. The remainder of the county is very rural with few emission sources.

In order to study transport from the San Joaquin Valley, the district established several monitoring sites in the rural eastern portion of the county. These monitors show violations of the new standard.

Our original staff recommendation included the entire county as nonattainment. However, the district has provided additional data that support boundaries similar to those proposed for other transport impacted areas.

As a result, we're recommending that only the eastern portion of the county be nonattainment, consistent with the monitoring data and transport evaluation.

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AIR POLLUTION SPECIALIST NYSTROM: The next area is southern Inyo County. The second largest county in California, Inyo County includes both the highest and lowest elevations in the state, Mount Whitney and Death Valley.

The monitor that violates the standard is located in Death Valley National Park. This is a rural area with no significant emission sources that is impacted by transport from both the South Coast and the southern San Joaquin Valley.

We recommend that only the southern portion of the county be designated as nonattainment, reflecting the area where transport from these upwind regions is sufficient to cause violations.

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AIR POLLUTION SPECIALIST NYSTROM: The last new nonattainment area the northeast San Bernardino County.

San Bernardino County is the largest county in the United States and encompasses a very diverse landscape portion of the county, shown as the orange hatched areas, are already designated as nonattainment with boundaries based on the previous 1-hour and 8-hour standards.

The southwest portion is located in the South Coast air basin. Ozone concentrations in this area are 60 percent above the level of the standard. The central portion of the county, which includes Victorville, has ozone concentrations that are 40 percent above the standard. The revised standard now brings in the remainder of the county.

This northeast portion shown as solid orange is a sparsely populated desert area with few emission sources. Ozone concentrations in this part of the county are less than ten percent above the standard and are dominated by transport from upwind areas.

Given the difference in the severity of the ozone problem in this new area, we recommend that northeast San Bernardino County be designated as a separate nonattainment area. This will better reflect their overall air quality problem and recognize that the area should attain the standard in a shorter timeframe.

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AIR POLLUTION SPECIALIST NYSTROM: Finally, as I

mentioned earlier, we will submit our area designation recommendations to the U.S. EPA by the March 12th deadline. U.S. EPA will review these recommendations and issue final designations next year.

This concludes my presentation. And now we'd be happy to answer any questions you have.

CHAIRPERSON NICHOLS: Are there any questions?

BOARD MEMBER TELLES: Not a question, but just for more information. Maybe not to deliver today, but I'd be interested in not just the fact that they're out of attainment, but how many days of the year that the different areas are out of attainment, maybe if you can just send me that, I'd appreciate it.

DEPUTY EXECUTIVE OFFICER TERRY: Just a reminder that Board Member D'Adamo did ask us to do a little informative board item on the SIP process. And we will be doing that this spring. So that might be an opportune time to do that kind of report as well.

CHAIRPERSON NICHOLS: Okay. Thank you for the report. We appreciate it.

No one was signed to testify on this item that I'm aware of.

BOARD MEMBER RIORDAN: Madam Chair, I'd like to move the staff recommendation.

DEPUTY EXECUTIVE OFFICER TERRY: Well, this is

actually an informational report to the Board. And then what will happen is we simply send a letter to U.S. EPA saying these are our recommendations and doesn't --

CHAIRPERSON NICHOLS: It doesn't really come before the Board.

BOARD MEMBER RIORDAN: All right.

CHAIRPERSON NICHOLS: We thought people ought to be aware of this. There are more nonattainment areas than you thought. Things are worse than you might have thought. Ozone is spreading even to our high elevation areas and our national parks and monuments. And it is a concern.

Okay. Let's move on then to the ICAT. Is that the next item?

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

The ICAT grant program funds projects that move promising technologies from the research and development phase into practical demonstrations.

For the latest solicitation, we requested applicants to focus on technologies that would control emissions of greenhouse gases. In addition, staff has responded to the Board's request to investigate whether ICAT could be modified to recover some of its cost from successful participants through a royalty arrangement.

Staff has looked into this issue and found payback requirements would discourage applicants and that administrative costs would likely exceed the income. Thus staff recommends no ICAT payback requirement.

This year, we received 86 pre-proposals that were pared down to the three full proposals we are presenting here for your consideration. Staff believes these three technologies in commercial use would best support ARB's goals and programs.

I'll now turn the presentation over to Steve Church of the Research Division.

(Thereupon an overhead presentation was Presented as follows.)

ICAT PROGRAM COORDINATOR CHURCH: Thank you, Mr. Goldstene.

Good afternoon, Chair Nichols and members of the Board.

Today, I will discuss the Innovative Clean Air Technologies Program, known as ICAT, and the new projects which we recommend for funding.

However, we will start today's presentation with a look at some of the technologies that have been brought to market with ICAT support and with a summary of staff's analysis of the payback clause the Board directed us to investigate in June of last year.

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ICAT PROGRAM COORDINATOR CHURCH: As you know, ICAT is the ARB's program for supporting development and demonstration of new promising air pollution control technologies on a co-funding basis.

At the last review, ten completed projects had proceeded to commercial sales. These technologies are now being sold in the marketplace where they are achieving emission reductions beneficial to many of our main programs.

Examples include, demonstration of electric airport ground support equipment at Sacramento International Airport, which reduces the use of diesel engines and supports ARB's off-road programs and local SIP efforts;

A diesel particulate filter that is regenerated overnight using grid electricity, which expands the types of applications that could be retrofitted with DPFs and supports ARB's Diesel Risk Reduction Plan, fleet, and school bus activities;

Demonstration of staged combustion technology for boiler NOx control, supporting ARB's stationary source NOx control programs.

Now, there are also currently 16 projects underway. Examples of these include a project to

demonstrate selective catalytic reduction of NOx from a ferry boat in San Francisco Bay, addressing the need to control emissions from marine vessels; development and demonstration of three-way catalytic converters for outboard motors to control NOx, hydrocarbons, and carbon monoxide from outboard pleasure craft; demonstration of solar water heaters that can reduce residential fossil fuel combustion and therefore NOx and greenhouse gas emissions.

These are just a few examples of the technologies brought to market with ICAT support and what is to come. Staff estimates that commercial use of these technologies has resulted in a reduction of 1,200 tons of ozone precursors and avoided about 60 premature deaths.

The benefits of the program continued to accrue as new technologies from the program are brought to market and existing ones are sold in greater numbers.

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ICAT PROGRAM COORDINATOR CHURCH: We'd also like to take a moment to respond to a previous request from the Board to look into the possibility of modifying the ICAT program to require some sort of payback from the successful participants. The idea was to use the revenues to support and expand the program.

One possibility for payback would be a royalty on

sales of successfully commercialized technologies.

Staff has identified three main issues.

First, we talked to eight of our past successful participants to get their views on royalty requirements. Half indicated that they would not accept a payback requirement and half said they were uncertain.

In deed, several noted that the ICAT grants are not large enough to warrant the extra administrative and recordkeeping effort they would have to undertake. Accordingly, staff believes that a payback requirement is potentially chilling and could have significant impact on the number and quality of applications ICAT receives.

In addition, ARB currently does not have authority to collect payments from private businesses for reuse by the program. Staff estimates it would take at least 18 months to get legislative authority and finalize program details and obtain Board authorization for the changes.

Finally, staff has consulted with the administrative staff of other grant programs that have a payback requirement, including the California Energy Commission's public interest energy research program. Based on their input and staff's estimates, the additional costs to administer a payback requirement would likely exceed revenue that could be generated.

Therefore, based on our investigation, staff recommends that no ICAT payback requirement be implemented.

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ICAT PROGRAM COORDINATOR CHURCH: Now, I'll return to our grant recommendations for the current ICAT cycle.

In April of last year, we issued a solicitation to the public for grant applications emphasizing the preference for technologies to reduce greenhouse gas emissions.

We received 86 pre-proposal abstracts, which ICAT staff reviewed to determine which had potential for ICAT participation. We invited 13 of these applicants to submit full proposals and received proposal packages from all of them.

The full proposals were reviewed by staff in Research, Stationary Source, Planning and Technical Support and Mobile Source Control divisions of ARB, by staff at the South Coast Air Quality Management District, and by faculty at the University of California.

Three proposals were selected for recommendation to the Board by considering the quality and novelty of the technology, the quality of the proposed demonstration project, the potential for emission reductions, and the

potential for successful commercialization.

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ICAT PROGRAM COORDINATOR CHURCH: The three new grants we are recommending have total ICAT funding requests of approximately $710,000.

The ICAT funds would support projects whose total budgets add up to more than 1.6 million.

The three grants would fund the demonstration of new control technologies for engines running on dairy digester biogas, active flow control for reducing drag of on-road tractor-trailers, and demonstration of a series hydraulic hybrid package delivery vehicle.

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ICAT PROGRAM COORDINATOR CHURCH: So the first project would support AB 32 greenhouse gas control measures for digester emissions and the 2013 standards for distributed generation emissions, while meeting applicable emission requirements.

It is from the Sacramento Municipal Utility District, and demonstrates two technologies for cleaning both fuel and exhaust from dairy digester biogas engines.

The system uses a peroxide solution to remove the sulfur from the incoming biogas fuel, which is then collected and dried. Sulfur removal has significant benefits in terms of reduced engine wear, extended oil

change and spark plug change intervals, and also allows the use of sulfur sensitive aftertreatment for NOx, hydrocarbon, and carbon monoxide control.

To remove NOx from the exhaust, the system uses activated carbon as an absorbent. Once saturated, microwave energy is used to desorb the NOx and react it with consumable carbon to produce carbon dioxide and nitrogen gas.

The requested ICAT funding request is just over $246,000. The project will demonstrate these technologies on a power generation engine at the Tollenaar Dairy in Elk Grove, for a period of approximately six months. The biogas will produced by a digester on the premises.

Staffs of the San Joaquin Valley Air Pollution Control District, Sacramento Municipal Air Quality Management District, several dairy industry stakeholders, and the California Department of Food and Agriculture have all expressed strong interests in and significant support for this project.

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ICAT PROGRAM COORDINATOR CHURCH: The next project is from advanced transit dynamics and would support ARB's AB 32 goals for the heavy-duty vehicle greenhouse gas emission reduction measure, as well as reduce NOx and PM from trucking operations.

It is designed to demonstrate a technology for reducing the aerodynamic drag and improve fuel consumption for typical on-road tractor-trailer trucks.

The technology consists of actuators that inject air into the boundary layer flow near the rear of the trailer. This injected air modifies the flow separation resulting in a smaller region of low pressure behind the trailer. This reduces the drag and improves the fuel economy of the vehicle by six to ten percent.

Of course, with this reduction in fuel consumption, there's a corresponding decrease in greenhouse gas emissions. The requested ICAT funding is just over $249,000. The applicant will partner with three trucking fleets that will provide vehicles for track testing and on-road demonstration testing.

In addition to demonstrating the technology, data will be gathered to assist in U.S. EPA Smartways certification, which would help support ARB's current truck rules.

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ICAT PROGRAM COORDINATOR CHURCH: The third recommended project is from Eaton Corporation. It would support the hybridization of medium and heavy-duty vehicle early action strategy, the Diesel Risk Reduction Plan, the 2007 ozone SIP, and general goals for heavy-duty vehicle

emission reductions.

The project is the demonstration of Eaton's hydraulic hybrid technology on a package delivery vehicle. Instead of using electric components like the electric hybrid cars we are familiar with, this technology uses hydraulic components to allow the engine to operate with a combination of load and speed that maximizes engine efficiency.

This results in reduced fuel consumption and the consequential greenhouse gas emissions. Regenerative breaking is also a feature of the hydraulic hybrid system.

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ICAT PROGRAM COORDINATOR CHURCH: This unit is predicted to improve fuel economy of package delivery vehicles by up to 50 percent. The requested grant amount is about $214,000. This vehicle will be operated for a six month period in revenue-generating services in California, which should raise the technology's visibility and lead to more immediate penetration into the market.

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ICAT PROGRAM COORDINATOR CHURCH: To summarize, the ICAT program has been in place since the mid '90s and has assisted in the development of several successful technologies that are realizing the important emission reductions in California.

Today, we are proposing funding three additional grants for a total of approximately $710,000 combined with another $900,000 being contributed by the applicants and their partners. The ARB funds would support the technologies through the project cycle and on to commercialization, where they can fulfill their air quality improvement potential for the state.

Thank you for your consideration, and we'd be happy to address your questions at this time.

CHAIRPERSON NICHOLS: Well, I think it's -- these are worthwhile proposals. I also appreciate the context that you've put this in. This is obviously not a huge pot of money, but it is a valuable pot of money that the Research Division has been given the opportunity to manage here. And it may well turn out to be that this is some kind of a precursor of what could happen if we were able to establish a carbon trust of some kind in California in terms of the kinds of things that we could show could be done with, you know, relatively modest -- I mean, obviously these are big sums of money, but they're relatively modest in comparison with the overall cost of doing this kind of work.

So I think it's -- I think these are the kinds of projects that we certainly said we would like to see coming forward here.

And I don't know if other Board members have any additional comments or questions about any of the projects?

Good report.

Okay. Seeing none, I think we need to actually have a resolution. It's not a regulatory item, so we don't have to close the record. I didn't see anybody coming here to speak on this item.

So, I think we can actually simply move it.

BOARD MEMBER D'ADAMO: So moved.

BOARD MEMBER BALMES: Second.

CHAIRPERSON NICHOLS: All those in favor say aye?

(Ayes.)

CHAIRPERSON NICHOLS: Thank you.

All right. We have one more last item, and from our Director of Communications, who's a shy and modest fellow, Leo Kay.

I'm teasing him, because the only criticism I ever really get from him is that he doesn't think I'm out there selling ARB enough.

(Laughter.)

OFFICE OF COMMUNICATIONS DIRECTOR KAY: You remembered that.

CHAIRPERSON NICHOLS: So right. You know, I take criticism, sort of.

(Laughter.)

CHAIRPERSON NICHOLS: But in all seriousness, Leo has been just doing a terrific job of broadening the ARB's communications program.

For those of you who were here before I got here, I'm sure this will resonate even more than it does for me. But historically, for many, many years, ARB had a very reactive communications program, essentially just responding to press inquiries, oftentimes reluctantly at that.

And as we have moved into an era where obviously our responsibilities and our ability to do things that people will either be happy about or unhappy about has expanded, it becomes really important that we be able to communicate what we're doing effectively.

So that is the job of Leo and his staff. I'm hoping he'll give us a brief overview of what he's up to.

OFFICE OF COMMUNICATIONS DIRECTOR KAY: Okay. Thank you, Madam Chair, members.

There we go. That's better.

(Thereupon an overhead presentation was Presented as follows.)

OFFICE OF COMMUNICATIONS DIRECTOR KAY: All right. So rather than just reading what's on the PowerPoint, I'll augment that. And I think it's no news

to say that we're not just leading the country here in our efforts to fight global warming, we're also going at diesel regulations, clean vehicle technologies, a whole slough of programs. So we have stories to tell. And, you know, we also have a responsibility to the taxpayers to let them know what their money is being spent on. So that's kind of the backdrop for which we operate under every day.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: Some of the tools that we use to get our word out, the old bread and butter of press releases, op-eds, news conferences, et cetera.

I'm going to focus on press releases for just a minute and talk about that is a unit of measurement in terms of how much more aggressive we've gotten over the past couple of years.

We issued 42 press releases in 2006. We got up to 66 in 2007. And last year, we issued 115 press releases.

Now, that's not significant in itself. But if you also take a look at the pickup rate that we have on these press releases, they're not just going on our website. They're generating news coverage. I think we have somewhere between a 90 and 95 percent pickup rate.

So we're pretty -- although, we're pumping out more and more press releases, we're still discerning as to the news value of each one and making sure that there's a life beyond our webpage for these press releases.

And one of the ways we get them out, in addition to sending them directly to the news media, is we have a list-serve of people and organizations who receive every press release we put out. I think that's 3,000 and growing right now people on that list-serve.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: Okay. We also, as Mary mentioned, respond to media queries. We might be low-balling this figure, but we're saying maybe about 75 media calls per month, 900 a year. But as you guys all know, with the December Board hearing, the back to back votes on both the Scoping Plan and diesel truck regulations, that was off the charts. We had dozens and dozens of calls and interviews on those two dates alone.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: Some of the other services we offer, we put out news clips every day. We're going to be starting a media training program soon. We do work on our intranet site, somewhat of an internal newsletter for staff who are interested in what's going on with ARB programs.

We provide graphics help, fact sheets. We run the main ARB hotline. We do web design, videos, photography. And we also have a speech writer on board now, too.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: One of the areas that we're focusing on, which I'll talk a little bit more about in a minute, is creating an ARB brand. For years, we kind of had a decentralized approach to how we did our outreach and how we presented ourself to the public.

And we're trying to bring a little more uniformity and consistency to things such as logos, because, you know, sometimes it's the logos that you have that end up imprinting on people's brains even as much as some of the news media you cover -- you get covered on.

And I think a good example of that is the Energy Star program that U.S. EPA and Department of Energy has run for years. It's a very recognizable easy-to-spot logo that a lot of people immediately associate with the federal government.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: So the main tool that we use to keep track of what's going on for days, weeks, months out and to plan and launch our

communications campaigns is called the communications timeline. And we, as a team, take a look at this at least once a week and try and forecast what's coming up and what's going to require comprehensive campaigns.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: All right. Here's a quick look at our organizational structure. And I'm happy to say I think we have a good portion of our team right here in the back. If you guys want to stand.

(Laughter.)

(Applause.)

OFFICE OF COMMUNICATIONS DIRECTOR KAY: Sarah Dalton is one of the newest members of our team, speech writer. We also have Mary Salas-Fricke, who just joined us recently. And is Padma there?

So we're excited and we're moving ahead. We've got a really good group to continue moving onward and upward.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: A few goals that we have for 2009, as mentioned before, we want to bring a little more consistency and uniformity to our outreach efforts. And we are all over the place -- I don't mean that in a bad way -- in our outreach. You

know, a lot of regulations that the Board ends up voting on has been subject to workshops up and down the state, leading up to the Board adoption of the rules.

So what we want to do is we want to make sure when we go to Fresno to talk about a tire inflation regulation that we also have the information and the resources there to talk about anything else people may want to know about ARB. Because, you know, although we may have a narrow focus for the purpose of that workshop, it's the one opportunity that the public has to come and talk to ARB about anything under the sun. So we're trying to work on that a little more.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: Another one of our goals is to work with the web development team to kind of streamline our web page, re-group the functionaries, sync-up with media and outreach strategies.

An example of this is we have a number of regulations that are affecting the trucking industry, not just the on-road truck rule, but TRUs, the periodic smoke inspection program, a whole slough of regulations and programs that affect people who drive trucks in California.

So what we'd like to do is create some type of a portal on the front page that's simply called the Truck

Stop. And you click on that, and you go to all the regulations that are affecting truckers.

So that's one of the types of ideas that we'd like to get underway and get away from this kind of decentralized approach that we've relied on in the past.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: Okay. And then, you know, we have a lot of allies out there who can help us carry our messages. And in particular, the air districts -- the 35 air districts throughout the state of California are often the ones called on to implement our regulations at the ground level. So we're working very closely with all -- well, mostly the major air districts, such as South Coast, San Joaquin, Sacramento, Bay Area, to make sure that they have the communications materials that are needed to help educate consumers on some of the things that are coming up. One example of that is the upcoming deadline for the enhanced vapor recovery program.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: Then in terms of issues, of course, our issues are your issues. So, you know, what's big in 2009. We have truck and off-road regulations. We've got agricultural and engines. We've got the low-carbon fuel standard, the Pavley

regulation, specific AB 32 regulations. And also our revised relationship with U.S. EPA is generating a lot of interest in the public and within the news media. So we're going to continue to shore that up as well.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: And finally, looking ahead, some of the changes taking place in the world of the news media are things that we're also trying to stay abreast of.

So, you know, news rooms are shrinking. The ethnic media is growing more and more important, especially in a place like California. And we need to be able to keep up with that.

So, for example, on the truck regulation, we learned that there was -- at least for many of us there was a surprise. We were surprised to learn that the huge number of Punjabi truck drivers there are in the state of California. So we reached out to the Indian American newspapers and press and radio stations to help get the word out.

And we're trying to bolster our foreign language capabilities within the ARB staff, so that we have people who can serve as spokesmen in a number of different languages. And I think we -- obviously, Spanish is a big one. We have a specific Spanish language press officer.

But Punjabi, Korean, Vietnamese, you know, we have a pretty diverse population in California.

And, you know, a good example of the rise -- or the continued importance of the ethnic media is I saw last year a story in the Chronicle that said -- and I think this had happened in LA. They had surpassed this a year or two before, but Spanish language TV stations led the Nielsen ratings for local news stations in the Bay Area last year. That's a big, big deal.

So we need to keep up with that. We need to have appropriate Spanish speaking staff at our disposal to help translate a lot of very complex information, even in the English language into Spanish.

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OFFICE OF COMMUNICATIONS DIRECTOR KAY: You know, we wanted to continue working on the web.

And then also this term that's been bantered about a lot, the "New Media", to better tell ARB's story. And that can include everything from Facebook to Twitter, MySpace, to all these new tools that are out there that people much younger than me are more adept at manipulating and using.

And then, finally, we want to continue to kind of burrow deep in the divisions, because there really is a story in just about every cubicle at ARB. And so we want

to continue to kind of burrow deep into the divisions, search out those stories, explain the significance of each one of them and how they relate to kind of the big picture goals and what ARB is up to.

I think that about wraps it up, unless --

CHAIRPERSON NICHOLS: Thank you, Leo.

I think Board members may have some questions or comments about this.

But I just want to say, Leo and I arrived at the ARB at just about the same time. So I feel a special bond, if it also weren't for the fact that I'm the one who gets to talk to the press a lot of the times when they do call or when we're trying to get a story out. And I just want the Board to know that this is an area where we are being increasingly active and where we're really trying hard to not only just be out there more, but be thinking in a more broad way about what we're trying to communicate, not just, you know, they adopted this or they did that. But to really try to educate the public about what's going on in the area of air pollution and global warming.

So if you all have suggestions, connections, opportunities, or whatever, we want to ask you to be thinking about those as well.

Did you have some questions?

BOARD MEMBER RIORDAN: I do have a suggestion.

When you talked about building the relationships with the PIOs of larger districts, because they're the only ones that really can request, afford PIOs, it occurred to me that we really need to do some outreach with the very small districts and mid-size districts. And while they don't have PIOs, you could be a resource to whatever staff they do have. And it might provide a very important link for the smaller districts to understand what the Air Resources Board does.

And then in our own way, we can learn they're unique environment because they have -- let's just talk about the truck drivers alone and those who own vehicles in some of these more rural districts. There's going to need to be a lot of education, outreach to those individuals. You could be very valuable to those districts. I encourage you to reach out to the small districts.

OFFICE OF COMMUNICATIONS DIRECTOR KAY: That's a very good point. And, you know, we do have the resources that they don't. And I think there's a general feeling among the members of CAPCOA, the air districts who do have bigger staffs as well to kind of help some of the smaller folks, who don't have the staff or the resources. So that's a very good point. We'll continue to do that.

BOARD MEMBER RIORDAN: Thank you.

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER LOVERIDGE: Just three things.

One is impressive and thoughtful overview. And thank you.

I guess two kind of questions.

One is the question we've got obviously a lot of stories to tell. I guess the question is, how you organize your attention and what do we establish as priorities? And I assume you figured how to do that and do that well.

But the last question is really that of outcomes. Rather than talk about all the activities, if I said you're doing an "A" job or you're doing an "F" job, what are the measures? What are the -- and look at the general public. We could look at stakeholders. You look at follow-up -- I mean, what -- at the end of a year, how should we judge whether or not all your goodwill and sophistication has resulted in a successful outreach?

OFFICE OF COMMUNICATIONS DIRECTOR KAY: Yeah. And, you know, that's a good question, because we're working in kind of a soft-science field that doesn't necessarily generate the hard numbers that a lot of the data represents among other ARB programs. That's for sure.

But, you know, in a very general sense, we look at the number of eyeballs reached. I mean, okay. So we put out an announcement on the ICAT grants that we just approved. If that ran in the Riverside Press Enterprise, if that appeared on Fox News in the Bay Area, we can measure the Nielsen ratings. We can measure the readership, the circulation of that newspaper. And we can also take a look at the web hits. So, you know, that's one way of looking at it.

But then also we get a tremendous amount of calls. I've been in the unfortunate position of being the only person in our office when our administrative staff has to take a bathroom break or go to lunch or something.

And the amount of calls that we get on a regular basis from people who have read about our stuff, who've read about an enforcement case or who need clarification, on one hand, it takes up a lot of time to track down some of these requests that come in. But it also shows that we are getting the word out.

And, again, that's kind of a soft way of looking at it. So maybe the better way is to go back and look at the eyeballs reached concept and look at the number of Nielsen ratings of a TV spot that ran one of our stories or the circulation of a weekly or a daily newspaper that ran with one of our pieces.

Does that get to what you were asking, Mayor?

BOARD MEMBER LOVERIDGE: It's soft. I mean, it's hard to -- but I think the question often is that there's a lot of extraordinary activity. To what end and how do you begin to measure that?

I think AB 32 is the most important thing the State has adopted, at least in my memory. That story needs to be told. But I guess the question, having said that, what's the measurements of the story being told?

CHAIRPERSON NICHOLS: You might just mention, Leo, that although State agencies are under very severe constraints when it comes to doing things like polling, which would be an obvious way that a private entity would judge how they were doing with their media expenditures, that we do have access to information that nonprofit organizations that are interested in our work generate. So we do get some feedback from groups to come and tell us how the public is responding to what it is we're doing here.

And we pay attention to that information, too. I think there's been -- especially since AB 32 passed, organizations like the Energy Foundation, for example, have funded polling by the Public Policy Institute of California and others that give us at least an indirect window on whether the public is with us or not on

different things that we're doing.

Dan.

BOARD MEMBER SPERLING: I think that was an excellent question. And maybe a part of before you even develop those metrics, you know, one question is who is the target audience here? Because, you know, it said that general philosophy says to inform California citizens and beyond.

So, I mean, one question is, is the target audience just the general public? Or is the target audience the specific entities that are the -- you know, being regulated? And that's two different strategies.

OFFICE OF COMMUNICATIONS DIRECTOR KAY: It's a little bit of both. And I'll give an example of enhanced vapor recovery.

So this regulation, the deadline kicks in April 1st. And it requires tens of thousands of gas stations throughout the state to install this additional equipment that's going to capture more VOCs -- smog-forming VOCs.

So we want the general public to know about it. We want to know this is how your taxpayer dollars -- we're kind of covering, uncovering every stone to capture every smog-forming emission we can in the state of California.

So there's a reason for this. There's a reason why you're going to go and you're going to see an

additional retrofit on a gas station.

But also that's where the trade publications really come in handy, because that's where we reach out to the specific gas station owners. And I am constantly amazed by the amount of trade publications that not only exist in California, but across the country and across the world.

So you literally have convenience store owners weekly that you reach out to, so that they know that there are no surprises. They know this regulation is coming down the pike. Come April 1st, they can't claim I didn't know about this.

BOARD MEMBER SPERLING: I think we need to articulate that more clearly, because, you know, that will very much affect what kind of communications programs you put together. And then, you know, you'll want to develop what are the new metrics, even in vague ways, of what those are.

You know, one little idea. You know, I'm doing a presentation for ARB tomorrow, and I couldn't find any slides to use kind of to open it up. You know, I thought you have that one page called "Branding ARB." But there is, you know -- I think Stanley sent me something. But you know, we didn't have a logo. As you said, we don't even have a logo. And, I mean, if you're trying to brand

it, if you're trying to create an image, simple things like that --

OFFICE OF COMMUNICATIONS DIRECTOR KAY: Just to add to that, I was kind of dismayed not long after starting here right around the time that Mary did to, you know -- when I was going around talking to friends and family and even strangers on the street to learn of how many people who didn't know what the ARB was. They hadn't even heard of us.

So, you know, I think in the past we've done a really good job of reaching out to the one in ten Californians or maybe two in ten, three in ten who are affected by our regulations.

But to those eight or nine out of ten who've never heard of us, that's where the real work lies ahead.

BOARD MEMBER SPERLING: I would suggest we think about that a little more. I mean, is that really the goal is to, you know, have 90 percent of Californians know who we are. Maybe it is, but maybe not. And the kind of communication programs you put together are going to be very different.

CHAIRPERSON NICHOLS: Right. We do have one witness who's actually asked to speak on this item, Sean Edgar.

MR. EDGAR: Chair Nichols and Board members, Sean

Edgar on behalf of the Clean Fleets Coalition.

And I welcome the opportunity to twitter with you, Leo, and the staff.

(Laughter.)

MR. EDGAR: Sounds exciting.

Just to punctuate Leo's fine presentation as always and just to punctuate a few items from industry's perspective, you typically see me come up before you on behalf of vocational truck associations. And my business over the last nine years that I have been appearing in front of this Board, that mode has gone from one of advocacy to representing truck owners.

And in addition to that, in places outside of Sacramento, in exotic places like Bakersfield, Barstow, Eureka, when I came in to talk to them in an engineering capacity and explain ARB rules, oftentimes the public sees me as you, because I must be from ARB if I'm from Sacramento to talk about diesel.

My point being that in carrying forward the message of this Board, Leo pointed out correctly, you may reach one, two, three individuals who are affected directly by regulations. And if I see a growth opportunity during this next year, it's the seven, eight or nine or actually ten out of ten who in following with the intent your Board has expressed that in the case of

the over-the-road truck rule, in the case of the off-road rule, if ultimately the tremendous costs of the regulation are going to be flow down to the consumer level, then obviously we all have an abiding invested interest to do the best job we can to reach out to the entire public.

So just to share a few points. When I came over here nine years ago, it was kind of a Gilligan's Island experiment. You all were talking about doing a trash truck rule. I was working for the Trash Haulers Association on recycling issues. I got to come over and begin to work on the trash truck rule. And nine years later, since we implemented that rule in 2005, I spent over 1,500 hours of my time every year, year after year, on your programs. In some cases, that's a policy advocacy role. In most cases, that's an outreach, education, and talking to people about your rule. Because as Leo is mentioning, you deal with some of the associations and some people that belong to associations, but I meet people every day who call my phone off the hook who ask about your rules that don't happen to belong to an association or they heard about it from someone else.

So the constant outreach will be there, because in my own experience, it's been a game of inches over the last five years just on one segment on the trash truck rule. And not to belabor that, but one reason why I think

it's critical for we all who work on this on a daily basis to actually help the electronic media get to the right point is because in places like Fresno, as an example, whether we carried forward a package to get recycling and cleaner trucks done, the lead story heading up to the Board of Supervisor's hearing was not that clean trucks and more recycling would happen in Fresno. The story was some 70-year-old dude over in Fig Garden Village hugging his old trash cans because for a few dollars more change was actually going to be bad.

And so our education rule needs to be, okay, you know, we do a good job talking through the associations, but the public outreach aspect and in getting to people throughout the community to tell them, well, beyond just the factoids of, well, maybe the over-the-road truck rule or private fleet rule is a penny on a package, okay, maybe that's a good factoid, but that doesn't really explain to the public that every good that comes off a truck beginning in 2010 and ending in 2022, if you're going to get full compliance with your rule, will result in society having to absorb substantial or increased cost.

And we tend to do our outreach and we say, well, gee, you know, the trucking companies will figure it out or the regulated entities, they'll talk to their associations. They'll figure it out. Actually, it's more

on our obligation and as expressed by the intent of this Board time after time to propel forward to make sure that the public understands that it's also their obligation to make these things happen.

Just in conclusion, there are three specific asks, because I will abbreviate my comments here, still three specific asks.

One is would be to update your letter -- your Board was gracious to write a letter regularly specific to solid waste recycling issues. And the last time you wrote that letter was in 2006. And that letter refreshes what you intended to happen in solid waste and recycling. As an example, you're going to look at commercial waste recycling. Cal EPA will in terms of the Integrated Waste Management Board. And you're going to continue to have clean truck programs.

But part of reminding city and county officials and other people that recycling companies work for that this is a critical program. I'll ask you to refresh the letter that you do, which expresses that it was the intent and expectation of the Board that the system cost -- because everything that will be used to deliver solid waste services, the system will have to absorb several hundreds of millions of dollars of new costs just in that arena. So I'll ask you to do that. If you would consider

that, that would be appreciated.

With regard to the public fleet rule direction on the economical review, it would be great -- and I know you'll do a good job of publicizing workshops that will go into that -- but actually taking from those workshops and whatever economic study, I know staff will continue to dig deeper in as you ask them to do.

Sometime later this year, they'll come forward with a more extended discussion about the economic concerns associated with our December hearing. And so publicizing the workshops and getting the conclusions out from those workshops to the public, with the focus being at the consumer level, so that consumers understand what those impacts are.

And lastly, I'll just ask that with regard to the off-road rule, you know, we know that the budget deliberations resulted in some particular phasing for the large fleets. And we've been in communication with Mr. Goldstene and your staff on the issue of how to get information out that's practical and short-term. So I know Mr. Goldstene and Mr. White and Mr. Cackette will work with us to publicize to the regulated community what the phasing of that off-road implementation new schedule for the large fleet.

So with that, thank you for the report. I'll

look forward to the twittering. And thank you, as always, for getting us good information to get out. Thank you.

CHAIRPERSON NICHOLS: Thank you.

I think that concludes our business for the day.

OFFICE OF COMMUNICATIONS DIRECTOR KAY: Madam Chair, could I just add one quick thing?

Having watched the Academy Awards recently, and I always feel bad for the people who don't get thanked. So we have the staff back there, our very great staff at the communications office. I have Mary Salas-Fricke; Gennet Paauwe, the Deputy Director; Sarah Dalton, speech writer; Dimitri Stanich, long time PIO; and Padmavathi Lingam, our new web master.

CHAIRPERSON NICHOLS: Thank you very much.

(Applause.)

CHAIRPERSON NICHOLS: All right. I hear a motion for adjournment and a second.

All in favor?

(Ayes.)

CHAIRPERSON NICHOLS: Thank you.

(Thereupon the California Air Resources Board adjourned at 1:52 p.m.)

CERTIFICATE OF REPORTER

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, and Registered Professional Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing California Air Resources Board meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and thereafter transcribed into typewriting.

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

IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of March, 2003.

JAMES F. PETERS, CSR, RPR
Certified Shorthand Reporter
License No. 10063