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AIR RESOURCES BOARD

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Mr. Hector De La Torre
Mr. Ronald Loveridge
Mrs. Barbara Riordan
Dr. Alex Sherriffs

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Ms. Sarah Pittiglio, Ph.D., Air Pollution Specialist, Research Division
Ms. Annalisa Schilla, Climate Action and Research Planning, Research Division
Ms. Marcelle Surovik, Air Pollution Specialist, Energy Section, Stationary Source Division
APPEARANCES CONTINUED

ALSO PRESENT

Mr. Brian Biering, Wildflower Energy
Mr. Bill Davis, SCCA/CCTA/CIAQC
Mr. Sean Edgar, Clean Fleets Net
Mr. Paul Shepard, Wildflower Energy, LP
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CHAIRPERSON NICHOLS: Good morning, everybody. This is the December 6th, 2012 public meeting of the Air Resources Board. I would ask you please to come to order. We will begin our meeting, as usual, with the Pledge of Allegiance to the flag.

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

CHAIRPERSON NICHOLS: The Clerk will please call the roll.

BOARD CLERK JENSEN: Dr. Balmes?
BOARD MEMBER BALMES: Here.
BOARD CLERK JENSEN: Ms. Berg?
BOARD MEMBER BERG: Here.
BOARD CLERK JENSEN: Ms. D'Adamo?
BOARD MEMBER D'ADAMO: Here.
BOARD CLERK JENSEN: Mr. De La Torre?
BOARD MEMBER DE LA TORRE: Here.
BOARD CLERK JENSEN: Mayor Loveridge?
BOARD MEMBER LOVERIDGE: Here.
BOARD CLERK JENSEN: Mrs. Riordan?
BOARD MEMBER RIORDAN: Here.
BOARD CLERK JENSEN: Supervisor Roberts?
Dr. Sherriffs?
BOARD MEMBER SHERRIFFS: Here.
BOARD CLERK JENSEN: Professor Sperling?
Supervisor Yeager?
Chairman Nichols?
CHAIRPERSON NICHOLS: Here.
BOARD CLERK JENSEN: Madam Chairman, we have a quorum.
CHAIRPERSON NICHOLS: Great. Thank you.
I want to say, I really like this room. And I'm wondering if the powers of eminent domain extend from the State to the regional level and we couldn't just sort of adopt this place. I like being lower down than when we are in the Haagen-Smit room way up on our dais there. And the sound system is very good here, too. So are the pictures. So I think we should consider that.
We are very grateful to the Air Quality Management District for allowing the use of their room this morning.
I have a couple of announcements for anybody who is not familiar with our routine. Anyone who wishes to testify and has not signed up online should fill out a request to speak card. They're available in the lobby outside the boardroom. And we appreciate it if you would turn it into the clerk, who is back in the corner over there in advance.
If you've already taken advantage of the online
sign-up procedure, you do not need to fill out a request to speak card. But you must check in with the Clerk or your name will be removed from the Speaker's list.

Also, speakers should be aware that the Board imposes a three-minute time limit. We appreciate it if you state your first and last name when you come up to the podium and then summarize your testimony, putting it into your own words as opposed to reading it. Because if you have prepared written testimony, we already have it.

For safety reasons, please note the emergency exits that are in the rear and to the side here. We're required to evacuate this room immediately and go outside the building if there is an alert.

Now, before we take up the calendar, the regular calendar, I wanted to mention a couple of things. First of all, in the wave of retirements that is going across the Air Resources Board and government in general, I should say, I want to take a moment to recognize the retirement of a long-time employee who is not with us today, and that's Dr. Linda Murchison. I believe Linda is listening on the broadcast. If you are, Linda, this is for you.

Linda is retiring after more than 35 years with the Air Resources Board. Throughout that time, she has been a leader in exemplifying ARB's commitment to strong
technical analysis in policy development. Her dedication as well as her noted management skills and creativity have made her a key member of ARB's executive staff team. Linda directed the development of several major new ARB programs throughout her career. Let me just mention a couple that illustrate the breadth of her contribution.

Linda joined the Air Resources Board in 1982 and quickly moved into management. Early on, she transformed ARB's emissions inventory into a modern database system for the first time. She was the first manager of ARB's toxic inventory program, developing our first regulatory reporting requirements for airborne toxics. She also built ARB's first community assessment and environmental justice programs, including a neighborhood scale air quality monitoring and modeling initiative. She was key to the drafting of our environmental justice policies and principles. And she oversaw the drafting of ARB's very much used land use handbook.

More recently, Linda has turned her talents to our climate change programs. Under her leadership, ARB staff developed California's first comprehensive greenhouse gas emissions inventory. And then a year later, her staff developed and the Board adopted the mandatory reporting rule and the verification program.

While taking on these challenges, she also
managed the very complex and important technical and policy issues involved in the SIP planning.

Underlying all of these accomplishments is Linda's unwavering dedication to the scientific and technical integrity of ARB work. We will miss her. But we can also be assured that she leaves behind a legacy of excellence as well as some excellent people who she helped to train who will carry on.

So Linda, hope you're listening. On behalf of myself and the Board members and all ARB staff, we want to say thank you.

(Applause)

BOARD MEMBER RIORDAN: Madam Chair?
CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER RIORDAN: I'd like to just say to Linda and hope she is listening how much I appreciated working with her over these many years that I've served on the Board, particularly in the area of environmental justice and the famous land use handbook.

She really was wonderful at working with community groups and in some more controversial areas. And I just appreciated the calming and reasoning effect of her efforts. And I thank her. And I'm sure we're going to miss her terribly.

CHAIRPERSON NICHOLS: Thank you very much.
All right. The first item on this morning's calendar is a consent item. It's the public hearing to consider the approval of the San Diego 8-hour ozone SIP redesignation request and maintenance plan. And I'd like to ask the Clerk if any witnesses have signed up to testify on this item.

No, they have not.

Thank you. Are there any Board members who want to address this item or would like to have it removed from the consent calendar? If not, we have a motion to approve it.

BOARD MEMBER BERG: I don't want to move it, but I would like to take one moment to say how refreshing it is that we're moving something into attainment. Hate to have that go unnoticed.

CHAIRPERSON NICHOLS: I agree.

I also wanted to introduce Bob Kard, if you're there. Bob is the Air Pollution Control Officer for San Diego. And since Supervisor Roberts isn't here, somebody has to make sure that we do the right thing. But you do not intend to address the Board, I believe?

MR. KARD: Unless you'd like me to say ten words.

CHAIRPERSON NICHOLS: Sure. Come on forward. Might as well. This is a big day.

MR. KARD: Chairman Nichols and Board members,
it's Bob Kard, the Air Pollution Control Officer in San Diego.

I just wanted to say thank you, because this is a joint effort. CARB's support has been invaluable, I should say, just priceless in helping us get there. San Diego Board of Supervisors has been great. They have been supportive of what we do in even difficult economic times, as we're all aware of. And frankly, the staff at the APCD and again ARB staff, making this possible because it's great.

2012, we had no ozone exceedances whatsoever of the 1997 standard. As compared to every day in the summertime, we had an exceedance in 1990. It's tremendous progress. We've gone up from 65 million vehicle miles traveled per day in 1990 to 87 million a day now, or in 2011. This is tremendous progress. It's a credit to everyone who is involved with it. And I want to thank you for that.

CHAIRPERSON NICHOLS: That's great. So we have a motion and a second. The record has been closed.

All in favor, please say aye.

(Ayes)


Okay. Our second item is also a consent item.
Agenda Item 12-9-2, the public hearing to consider approval of the 2012 particulate matter 2.5 inventory submittal to the State Implementation Plan for the San Francisco Bay Area.

I'd like to ask the Clerk again if there are any witnesses who signed up to testimony on this item. No. There are not.

Are there any Board members who want to see this removed from the consent calendar? All right. If not, and there is no one here even representing the Bay Area, I see --

BOARD MEMBER RIORDAN: Move approval.

CHAIRPERSON NICHOLS: We have a motion to approve.

BOARD MEMBER DE LA TORRE: Second.

CHAIRPERSON NICHOLS: And a second.

All in favor please say aye.

(Ayes)

CHAIRPERSON NICHOLS: Opposed? Great. All right.

Now, moving on to the next item, we have an informational update on the Board's research program. And I'll ask our Executive Officer to introduce this item.

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.
ARB's research program supports our public health and climate goals through a combination of extramural research, in-house studies, and collaboration with other agencies. The program benefits from the expertise of the University of California system and other world class research institutions. ARB's research portfolio comprises studies involving a variety of scientific disciplines and approaches. Some of these studies are long term and build on unique data sets, while others address specific knowledge gaps.

Today, staff will present a brief retrospective on ARB's research program and some key findings. Staff selected three research areas to highlight today: Children's health, diesel emissions, and greenhouse gases with high global warming potential.

Dr. Sarah Pittiglio of the Research Division will now give the presentation. Dr. Pittiglio.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST PITTIGLIO: Thank you, Mr. Goldstene.

Good morning, Chairman Nichols and members of the Board.

To improve our effort to communicate results, ARB's Research Program plans to provide periodic updates.
to the Board on highlights from completed research studies.

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AIR POLLUTION SPECIALIST PITTIGLIO: The goal of ARB's research program is to provide timely, scientific information efforts to adopt and attain health-based air quality standards, reduce community exposure to air toxics, and meet greenhouse gas reduction targets.

To achieve these goals, ARB's research program has been and continues to be a collaborative effort with other agencies and top tier research institutions. Over the past four decades, the Research Program has gotten twice the value over time through matched and leveraged funding.

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AIR POLLUTION SPECIALIST PITTIGLIO: ARB participates in several research coordination groups with other California State agencies to ensure that its research portfolio is non-duplicative and to identify opportunities to leverage the State's resources.

Information is shared at all stages of ARB's annual research planning process. The process benefits from ongoing discussions with experts from coordination groups as well as with other institutions with scientific expertise or regulatory authority in air pollution and...
related fields.

AIR POLLUTION SPECIALIST PITTIGLIO: ARB's Research Program was established in 1971. Over the past 40 years, the program's research portfolio has been designed to meet ARB's evolving program needs in response to a broad change of legislative mandates. The results from this portfolio have provided vital information to determine how and when to implement regulations.

This time line illustrates when we initiated the investigation of some key research topics. Many of these topics continue to be important parts of the program.

AIR POLLUTION SPECIALIST PITTIGLIO: However, for this presentation, we will focus only on highlights from the topics of children's health, diesel emissions, and greenhouse gas mitigation.

AIR POLLUTION SPECIALIST PITTIGLIO: ARB's health effect research has helped contributed to the scientific basis for the development of State and national ambient air quality standards.

The program also investigates emerging toxicological issues as they relate to public health, quantifies the health benefits of ARB's regulations, and
conducts research to verify the effectiveness of those 
regulations.

While there are many program needs covered by the 
health research program, today we will focus on children's 
health.

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AIR POLLUTION SPECIALIST PITTIGLIO: Research on 
children's health began in 1992 with the Children's Health 
Study. This study investigated the health impacts of air 
pollution on California's vulnerable youth population. 
This study had a sample of 5500 children who lived in 12 
communities in southern California that had different 
levels of air pollution.

This work was initiated under ARB funding to 
follow these children from 4th to 12th grade. The study 
is still ongoing, currently funded by the National 
Institute of Environmental Health Sciences.

This ground-breaking study added significantly to 
what is known about the impact of air pollution exposure 
on the respiratory health of children and is highly sited 
as one of the most significant research efforts undertaken 
in the field.

Among the policy outcomes of this work was SB 25, the Children's Environmental Health Protection Act. 
Legislation requiring California to reassess its air
quality standards to ensure the health of infants and children.

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AIR POLLUTION SPECIALIST PITTIGLIO: Major findings from the Children's Health Study include evidence from persistent reductions in lung growth from air pollution exposure, evidence that the risk of asthma-related symptoms increased near roadways, and linked air pollution to both the onset and severity of asthma.

These findings set the stage for subsequent studies which confirmed and expanded on these results. These studies included quantifying exposures to air pollutants in ambient air at the neighborhood level, near roadways, and in a variety of enclosed environments, including homes, schools, and in vehicles. Findings included confirmation that in-vehicle exposure such as school buses was high and linked asthma onset to exposure. Current research focuses on mitigation options, such as filtration in vehicles, homes, and schools.

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AIR POLLUTION SPECIALIST PITTIGLIO: ARB-sponsored research found that children living in communities with the highest levels of air pollution are more likely to have significantly reduced lung function
growth compared to those with lower exposure. The investigators also found that children who relocated from high to low PM community showed improved lung function, although it is unclear whether the improvement in growth was sufficient to compensate for the adverse effects of previous exposures.

The converse was also true that children who relocated from high low to high PM communities showed reduced lung function.

In addition, based on findings from the Children's Health Study, we calculated in 2005 that an additional 1.7 million school absences were linked to ozone exposure and would be avoided if the current State ozone standard was attained.

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AIR POLLUTION SPECIALIST PITTIGLIO: The Children's Health Study found that lung function was reduced in children living closest to freeways. This finding led to subsequent ARB-funded research on the health impacts of exposure to traffic emissions.

Studies showed that even in areas with good regional air quality, proximity to traffic is associated with adverse respiratory health effects in children. These findings helped to support the reviews of our ambient air quality standards and inform our regulations
and guidelines, such as ARB's Land Use Handbook.

Two ARB studies of vehicle-related pollutants in school buses identified the intrusion of the bus's own exhaust emissions into the passenger cabin as a significant source of exposure. The results supported ARB's lower emission school bus program to replace older, dirtier buses.

The results also supported ARB's air toxic control measure that limits school bus idling. These research findings led ARB to put a research project into place last year to investigate the effectiveness of filters in reducing pollution exposures in school buses and cars.

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AIR POLLUTION SPECIALIST PITTIGLIO: Research from the Children's Health Study showed an association between exposure to ozone and the initiation of new asthma cases. Associations between traffic pollution and wheezing, asthma prevalence, and increased asthma medication use were also found.

Studies that followed found that exposure to traffic-related pollutants are also linked to asthma initiation. Results from the Fresno Asthmatic Children's Environment Study showed a worsening of the children's symptoms with increased exposure to polyaromatic
hydrocarbons, which are likely the result of traffic sources.

The research program is currently following up with mitigation studies that examine the effectiveness of filtration in reducing particulate matter exposures in the homes of asthmatic children. Results from these projects are expected in 2016.

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AIR POLLUTION SPECIALIST PITTIGLIO: The next portion of the presentation will focus on the research program's efforts to reduce diesel emissions.

The research program has funded extensive studies to quantify vehicle emission rates and sources, test control technologies, and monitor the long-term impact of regulations for both light and heavy-duty vehicles. For today's presentation, we will focus only on emissions from heavy-duty vehicles.

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AIR POLLUTION SPECIALIST PITTIGLIO: In this slide, we show the main components of ARB's regulatory program over the past 15 years to reduce emissions from trucks, starting in 1998, when diesel PM was designated a toxic air contaminant. ARB responded by developing and adopting the Diesel Risk Reduction Plan in the year 2000, with the goal of reducing diesel PM emissions by 85
percent by 2020.

Subsequent rules to reduce PM emission from diesel started with a series of fleet rules in the 2000s that reduced emissions from captive fleets. Two new emissions standards were also passed to reduce PM and NOx, starting with the 2007 and 2010 model year engines, respectively. These rules by themselves, however, were not enough to achieve the goals laid out by the Diesel Risk Reduction Plan, nor to meet national ambient air quality standards for PM and ozone. Because diesel engines are very long lasting, ruled were needed to require retrofits or vehicle turn over of practically every diesel truck in the state over the next decade. The drayage rule has already cleaned up diesel trucks around the major ports in California, while the truck and bus rule will reduce PM and NOx as needed over the next decade.

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AIR POLLUTION SPECIALIST PITIGLIO: Here, we show the main components of ARB's diesel research over the last decade. The program was designed to inform and verify the effectiveness of the regulatory program and has played an important role in the success of the diesel rules.

Beginning in 2000, a multi-agency collaboration
led by ARB measured tailpipe emissions from diesel and compressed natural gas fueled transit buses with different types of aftertreatment and under a range of operating conditions. Continued collaboration with our partners led to a major effort to characterize the effectiveness of retrofitting aftertreatment technologies on existing vehicles.

Our current efforts are focused on measuring the real world effect of our major in-use diesel rules, such as the truck and bus rule, using biological and chemical assays to screen exhaust for overall toxicity, characterizing the effects of new fuels and technologies, and on achieving further NOx reductions.

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AIR POLLUTION SPECIALIST PITIGLIO: Such of our research is done in-house and in collaboration with the divisions that operate our emission testing laboratories. In these laboratories, heavy-duty trucks are placed on dynamometers where their exhaust is collected on filters for subsequent analysis.

As an example of the effectiveness of diesel particulate filters, also shown as DPFs, this slide shows a filter sample collected from a diesel without a DPF on the left and with a DPF on the right. Once the diesel engines in the state have these filters, seeing a diesel
truck emitting black smoke such as the truck on the left, will be a thing of the past.

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AIR POLLUTION SPECIALIST PITTIGLIO: Here, we show the reductions the program has observed with our laboratory studies for NOx, PM, and total hydrocarbon emissions. The comparison is made between 1998 model year trucks and trucks that meet the 2010 standards.

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AIR POLLUTION SPECIALIST PITTIGLIO: The research division has also identified a suite of biological and chemical assays that, in aggregate, provide an important screening for toxicity. These assays measure markers that can be related to the ability of the exhaust or PM to cause oxidative stress, inflammation, or DNA damage.

By consistently using the same assays in the same manner, this toxicity screening can be used to compare the exhaust from different types of vehicles, fuels, and aftertreatment technologies.

The drastic reduction provided a significant indication that new technologies resulting in emissions that are less harmful on a per mile basis. These types of tests are also important in ensuring there are no unintended consequences of the new technology.

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AIR POLLUTION SPECIALIST PITTIGLIO: In addition to measuring emissions in the our in-house laboratories, ARB has several projects underway to understand emissions as they occur on California's roadways. Shown here is the mobile monitoring platform we developed. It is an electric vehicle equipped with instrumentation to measure key gaseous and particle species with high spacial and time resolution. The platform is being used on major freeways in Los Angeles to measure the emission factor of vehicles traveling on those major roadways.

The map on the right shows the mobile platforms path along the 710 freeway, which is a route that is heavily used by drayage trucks.

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AIR POLLUTION SPECIALIST PITTIGLIO: Using the mobile monitoring platform on the 710 freeway, we were able to quantify the immediate benefits of the drayage truck rule. The step-wise reduction is due to a number of factors in addition to the drayage rule, including the gradual turnover of trucks from fleet rules and fluctuations in the economy. Although NOx was not a target of the drayage rule, this slide shows the co-benefit of the rule in reducing NOx emissions in just 16 months.

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AIR POLLUTION SPECIALIST PITTIGLIO: Similarly, black carbon emissions on this drayage truck route have been reduced by 70 percent over the last several years as the drayage rule has been implemented.

Similar work by U.C. Berkeley has shown reductions near the port of Oakland. These significant reductions in diesel-related pollutants in heavily-impacted communities, which includes the neighborhoods adjacent to ports in California, will hopefully reintroduce the prevalence of health-related impacts due to exposure of emissions.

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AIR POLLUTION SPECIALIST PITTIGLIO: In addition to measuring the fleet-wide average emissions over time, measurements of individual trucks are needed. Seen in this video, a heavy-duty truck drives through a truck test tent at a weigh station. A perforated tube in the corner of the tent draws in a sample of the emissions, which allows the investigator to calculate an emission factor. Thousands of trucks can be tested at a weigh station in a relatively short time in this manner.

With biannual measurements planned, we will be able to assess the durability, failure rates, and the degradation rates of the major aftertreatment technologies used in diesel engines over time. The Board will be asked
to fund a similar study in the next presentation.

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AIR POLLUTION SPECIALIST PITTIGLIO: We'll now turn to ARB's climate change research, which began with an estimation of the effects of climate change on public health and the economy and has helped identify cap and trade options.

The research program has expanded its climate research to include sources and potential mitigation strategies for greenhouse gases. These research efforts have led directly to some of the regulations and programs now in place to meet the 2020 greenhouse gas emission goals of AB 32. Here, we provide the highlights from the program's efforts to inventory and reduce non-CO2 greenhouse gases, which is a growing faction of California's carbon footprint.

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AIR POLLUTION SPECIALIST PITTIGLIO: The greenhouse gas inventory includes atmospheric constituents that trap heat in the atmosphere. Non-CO2 gases include high global warming potential gases, black carbon, methane, and nitrous oxide. These gases account for 25 percent of California's greenhouse gas inventory.

The research programs' focus on non-CO2 gases aims to explore potential new emission reduction
strategies, ways to improve emissions estimates, and
method to verify emission reductions over time.

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AIR POLLUTION SPECIALIST PITTIGLIO: Over the
past five years, ARB has inventoried California's sources
of high global warming potential gases. The inventory
demonstrated that emissions of these gases are growing
rapidly in California and are produced from a variety of
sources.

Several research projects highlighted the
importance and cost effectiveness of reducing these
emissions and led directly to the adoption of rules to
reduce hydrofluorocarbons from commercial refrigeration,
motor vehicle air conditioning systems, and other sources.

These rules are expected to reduce annual
statewide greenhouse gas emissions by eight million metric
tons of carbon dioxide equivalent by 2020 at relatively
low cost and in many cases, cost savings to industry.

Finally, based on this research, ARB adopted a
protocol to provide incentives to recover and destroy
ozone-depleting substances as part of the Cap and Trade
Program.

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AIR POLLUTION SPECIALIST PITTIGLIO: ARB research
on black carbon began with the creation of a California
inventory. Another ARB research study has observed a
50 percent reduction in black carbon measured at
monitoring sites throughout California over the past
20 years. This agrees with the expected emissions
reductions associated with California's diesel emission
control program. Further reductions will likely be shown
in the future due the ARB's Advanced Clean Car Program and
district burning restrictions.

The 50 percent reduction in black carbon
accounted for a 25 percent decrease in atmospheric heating
in California. Through our research collaboration with
NOAA, we were able to produce direct measurements of this
forcing in the atmosphere.

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AIR POLLUTION SPECIALIST PITTIGLIO: The tower
network represents one of our current research efforts to
improve ARB's emission inventories for methane and nitrous
oxide. Each yellow pin you see in the video represents a
measurement site. The sites were established in
coordination with NOAA and the Energy Commission. The
objectives of the network are to improve air quality
models, refine emission inventories, determine the
effectiveness of new emission control technologies, and
improve measurement methods. We have now zoomed into
Mount Wilson Observatory, which is a measuring site that
is one of the first sites in the network.

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AIR POLLUTION SPECIALIST PITTIGLIO: Monitoring and methane at Mount Wilson began in 2007. Measurements from the site helped develop a methane inventory for Los Angeles, which led to several peer-reviewed publications. The success at Mount Wilson led to the adoption of a statewide network. The monitoring at Mount Wilson is one of several methods currently being employed to understand sources of methane in Los Angeles basin.

We have also deployed two mobile monitoring platforms to better understand local sources of methane.

In collaboration with Scripps and NOAA, aerial passes over the L.A. basin have also increased our understanding of emissions and atmospheric processes in the area.

Beginning in 2012, ARB intend to use its research tools to complement a five-year federally-funded greenhouse gas monitoring project to investigate the sources and trends of carbon dioxide and methane emissions in Los Angeles.

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AIR POLLUTION SPECIALIST PITTIGLIO: The Los Angeles basin represents an urban setting and has distinct sources of emissions, such as natural gas pipe lines and
landfills. This contrasts with the other parts of California, such as rural areas that are common in the Central Valley. In rural areas, methane emissions are dominated by agriculture sources. To help define emissions in rural areas, another tower is located in Walnut Grove, which is approximately 30 miles south of Sacramento.

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AIR POLLUTION SPECIALIST PITTIGLIO: Similar to our study in the L.A. basin, we have developed another holistic research effort to determine methane and nitrous oxide sources in a rural setting. We have installed a suite of instruments on a radio tower in Walnut Grove, which is currently collecting measurements of methane and NOx. We have leveraged a significant amount of funding with the collaboration with the California Department of Food and Agriculture, CalRecycle, and California Energy Commission to determine nitrous oxide emissions from the application of fertilizer to a wide variety of economically important crops.

The mobile monitoring platform is being used to understand specific local sources in the area. Flights have been conducted through the CalNext project. The flight pattern in the upper left corner of the slide was used over rice fields which are a significant source of
AIR POLLUTION SPECIALIST PITIGLIO: Today's presentation provided a few examples of how ARB's research projects work together to create a sophisticated research portfolio. Communicating these research results to the public has become a top priority. Links to outreach materials are available on the ARB research website and announced on the ARB list serve. These types of communication tools are necessary since the program produces many final reports each year.

Projects from this year's annual research plan will be outlined in the next presentation. These projects will continue to build upon the strong research foundation that we have created over the past four decades.

Thank you for your attention. I'm happy to answer any questions you.

CHAIRPERSON NICHOLS: Thank you. That is a good selection of a couple of key areas of our research. I welcome comments or questions from members of the Board.

Dr. Balmes, would you like to begin?

BOARD MEMBER BALMES: First off, I want to congratulate staff for embarking on this new effort to communicate both to the Board and to the public about our research, which has been phenomenal for years. But I
don't think we've done the best job of communicating that
to the public at large. I think the scientific community
has always recognized the quality of CARB's research. So
I felt this was a really excellent presentation. And I
look forward to more of these on a quarterly basis or
something, semi-annual, an appropriate interval. But we
have much more to do with regard to the public at large.
But I think this is a good first step.

CHAIRPERSON NICHOLS: Great. Thank you.
I want to particularly point to the work that's
done on diesel, because that's been so controversial, to
say that, you know, I think it's really impressive that
we're not just looking at the harmful effects of diesel,
but we're actually assessing on a continuing basis the
effects of our work so that we can claim credit for the
things that we've done that are good, but see the things
that are not working and use that on a continuous feedback
basis to really improve the program. I think that's the
mark of a really successful program and one that's well
integrated into the policy side of the organization.

Any other comments or questions?
If not, we have some research proposals to
consider. And this will be a good backdrop for that.
Mr. Goldstene, will you please introduce the
item?
EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

The research to be covered by the proposals before you today support ARB's regulatory priorities in three key areas: Foundational science, clean air strategies, and program effectiveness. Specifically, these projects include air quality and climate studies that will improve air quality models used for State implementation planning and inform the development of future strategies to meet California's climate and air quality goals. They'll support successful implementation of the Sustainable Communities Program and the Advanced Clean Cars Regulation and will investigate the technical potential and economic feasibility of further emission reductions from freight transport. They will also examine the effectiveness of ARB's existing programs to reduce emissions from the light and heavy duty vehicle fleets.

These research projects were presented to you last June as concepts and have now been developed into full proposals. They've been reviewed by the Research Screening Committee as well as reviewers at other State agencies and funding organizations to promote coordination and avoid duplication.

With that, Dr. Annalisa Schilla of the Research Division will describe the research studies. Dr. Schilla.
(Thereupon an overhead presentation was presented as follows.)

MS. SCHILLA: Thank you, Mr. Goldstene.

Thank you, Chairman Nichols and members of the Board.

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MS. SCHILLA: This morning, we will be presenting nine research proposals for your consideration, which were developed in response to the 2012/2013 research plan that the Board approved last June. All of these proposals have been reviewed by ARB's Research Screening Committee and have been recommended for funding.

Staff have also coordinated with other funding agencies, including air districts, the California Energy and Public Utilities Commissions, the Bureau of Automotive Repair, Caltrans, the U.S. EPA, and Department of Energy, and other states to avoid duplication and to identify cofunding opportunities wherever possible.

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MS. SCHILLA: The nine research proposals we are presenting today are designed to support the Board's efforts to attain air quality standards and meet climate goals. The majority of these new projects focus on transportation-related research needs.

In spite of substantial improvements in
California's air quality over the past few decades, ozone and PM2.5 levels continue to exceed health-based air quality standards in both urban and downwind rural areas of California. ARB has numerous studies and collaborations to address key air quality research questions and will continue to fund research to support State Implementation Plans.

In the research update, you just heard about the history of ARB's diesel program and the role that research played. Diesel emissions from heavy-duty vehicles and freight transport are major sources of criteria and toxic air pollutants and greenhouse gas emissions in California. To meet long-term air quality and climate goals, emissions from these sectors will need to be significantly reduced beyond what is expected from already adopted regulations. Research will continue to examine new opportunities to further reduce emissions and will evaluate the effectiveness of ARB's existing diesel programs.

Passenger travels is also a major source of criteria and toxic air pollutants and greenhouse gas emissions in California, and emissions from these vehicles will need to be significantly reduced to meet long-term air quality and climate goals.

Research projects proposed this year will support
implementation of the advanced Clean Cars Program that the
Board adopted in January and evaluate the long-term
benefits of the Board's prior efforts to reduce passenger
vehicle emissions through the low emission vehicle
program.

Achieving California's 2050 climate goal will
require dramatic changes in transportation, land use, and
community design. Research in this area will seek to
improve land use and transportation strategies, support
the development of community plans to meet SB 375 goals,
and explore the linkages between air pollution exposure
and compact development.

These research projects will strengthen the
scientific foundation that underpins air quality planning,
support strategies to reduce emissions from the light and
heavy duty fleets and from freight transport, and provide
insights into the real world outcomes of sustainable
community strategies.

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MS. SCHILLA: This first proposed project will
update the photochemical air quality models that ARB uses
to develop State Implementation Plans to reflect the most
up-to-date understanding of atmospheric chemistry. In
order to predict the impact of air pollution control
strategies, these models must represent ozone and PM
formation as accurately as possible. These models are
updated regularly to ensure that they remain state of the
science.

This research will improve predictions of the
formation of ozone and the secondary organic carbon
fraction of PM2.5 and will assess the impact of nitrogen
and carbon chemistry on the formation of secondary PM.
These improvements will ensure that ARB's regulatory
efforts continue to be based on the most credible air
quality models.

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MS. SCHILLA: The remaining proposals we will be
presenting are transportation related. The first of these
projects will study diesel emissions from heavy-duty
vehicles. This project will measure emissions from trucks
traveling through the Caldecott Tunnell in the San
Francisco Bay Area in 2014, 2015, and 2017, corresponding
to key implementation milestones for the truck and bus
rule and will assess the effectiveness and durability of
exhaust aftertreatment technologies over time.

This study will complement related research
examining heavy-duty trucks in the Los Angeles basin in
order to characterize the statewide emissions from the
heavy-duty truck fleet and to improve emissions forecasts.
Results will be used to quantify the actual air quality
benefits of the truck and bus rule.

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MS. SCHILLA: The next four research projects will examine passenger vehicle emissions.

The first three projects will support the Advanced Clean Cars Program, which is being implemented in close collaboration with the U.S. EPA and the National Highway Traffic Safety Administration.

These projects will help ARB staff address concerns raised by stakeholders related to consumer acceptance, vehicle usage, and emissions measurement from the very clean vehicles that are anticipated in response to the program.

The fourth project will quantify the benefits of the Board's prior efforts to reduce emissions from passenger cars through the low emission vehicle program.

This first advanced clean cars project will produce a statistically robust representation of the new car buying population in California and other partner states who may adopt California's rules in order to identify the factors that influence new vehicle purchase decisions.

The study will survey and interview the diverse population of new car buyers to provide ARB with insights into the potential for policies, incentives, and outreach.
the remove obstacles or enhance motivations for the adoption of zero and near-zero emission vehicles.

The South Coast Air Quality Management District and other states are interested in administering the same survey and conducting similar interviews. And staff has identified at least $325,000, in likely co funding to expand the project to more households as a result of these partnerships.

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MS. SCHILLA: The next project will study the actual emissions benefits associated with transitioning to more electrified vehicles, accounting for the variability that results from individual consumer usage and charging behavior. This research topic was discussed at the Board's January meeting for the Advanced Clean Cars Program.

Plug-in electric vehicles are expected to account for an increasingly large share of new light-duty vehicle sales in compliance with ARB's Advanced Clean Cars Program and the Governor's Executive Order on zero emission vehicles. The proposed project will collect detailed in-use vehicle data to quantify the share of miles driven with grid-based electricity.

Unlike previous research, this study will evaluate an entire household's travel to determine, for
example, whether households shift miles to electric vehicles for shorter trips. Results will improve emissions estimates of various electric vehicle types as well as the overall light-duty fleet.

This project will also assess the charging behavior of plug-in electric vehicle drivers in order to understand possible grid impacts from vehicle charging and the need for public charging infrastructure and is being closely coordinated with the California Energy and Public Utilities Commission and the U.S. EPA and the Department of Energy.

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MS. SCHILLA: This next proposed project will address the measurement challenges presented by the advanced clean cars particulate matter standards.

At the Board's meeting in January, the Board requested that staff study whether PM could be reliably measured at such low levels. This project will augment a proposed coordinating Research Council project investigating possible improvement to PM measurements.

ARB's funding contribution will ensure that researchers evaluate methods for measuring at the one milligram per mile level required by California's new standards.

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MS. SCHILLA: The last proposed light-duty project will quantify the benefits of ARB's Low Emission Vehicle Program. As older vehicles begin to exit the fleet in significant numbers, emissions from the light-duty fleet need to be monitored to assess emission reductions over time. The proposed study will employ remote-sensing devices to measure emissions from passenger cars at the La Brea Boulevard onramp to Interstate 10 in Los Angeles in 2013 and 2015. This study will build upon prior measurements from the same location which began characterizing passenger car emissions in 1999 in order to allow ongoing analysis of emissions trends.

This project will evaluate the durability of emission reduction technologies and characterize the relative importance of high emitters to fleet average emissions and will also explore a potential new technique to identify gross evaporative emitters.

This project is being conducted in coordination with the South Coast Air Quality Management District and the Bureau of Automotive Repair and results will improve ARB's emission inventory and quantify the benefits of the LEV program.

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MS. SCHILLA: Finally, three proposed research projects will investigate the air quality, climate, and
health impacts of sustainable communities strategies.

The first proposed project in the research area will examine traffic management approaches and urban designs with the goal of identifying specific strategies that minimize air pollution exposures in heavily traveled urban corridors.

As California pursues increasingly compact development to reduce vehicle travel demand, the air pollution exposures of people living and walking in these areas may increase. In order to ensure that SB 375 implementation is balanced with the need to protect public health, land use, and transportation planning must incorporate estimates of air pollution exposure.

This study will modify the existing operational street pollution model, a model widely used in Europe to characterize street level air pollution dispersions to more accurately simulate the low rise and widely spaced urban landscapes that are typical of California.

This project will also employ ARB's mobile monitoring platform to capture micro-scale street level emissions and meteorological data in multiple Los Angeles street environments. This data will be used both to validate the model and to quantify the exposure impacts of different traffic management strategies and community designs. Results will assist California planners in
designing and managing communities to minimize air pollution exposure.

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MS. SCHILLA: The next proposed project will assess changes in travel mode for households living in the vicinity of a new light rail line in Los Angeles. Many communities are working to improve Citizen's access to transit as part of their SB 375 planning. In Los Angeles alone, there are six light rail projects currently planned and a number of other regions are also planning or considering them.

This project will collect travel mode choice data from the same households as those evaluated in a study that assessed the travel modes of approximately 250 households before the line was opened.

The pre-light rail study was partially funded by the U.C. Sustainable Transportation Program. Results of this research will help local governments and planning agencies better account for reductions in vehicle miles traveled and changes in other transportation mode choices related to the construction of light rail infrastructure, and to prioritize SB 375 strategies accordingly. These findings will also allow ARB the assess the actual emission benefits of SB 375 strategies.

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CHAIRPERSON NICHOLS: Could I interrupt with a question? Because it came up during our meeting that we had earlier this week with the representative of U.C. Irvine.

We were talking about some efforts that they've been making to try to get light rail to bring people to and from the campus. We use the word "Los Angeles" loosely. Those of you from Sacramento tend to think of anything, you know, south of Santa Barbara as being Los Angeles, unless maybe it's San Diego.

But I just want to make sure that this study isn't only looking literally at Los Angeles city or county, but is focused on the region as a whole, because SB 375 covers -- I mean, the sustainability plan covers the whole metro area. Does anybody know the answer to that question?

MS. SCHILLA: It's only looking at one specific light rail line in this case. It's the expo line.

CHAIRPERSON NICHOLS: Just the expo line.

MS. SCHILLA: Right.

CHAIRPERSON NICHOLS: Oh, I see. Okay. All right. Because I can't imagine that they're all the same. But maybe this is a -- can be used as a basis for other studies.

DEPUTY EXECUTIVE OFFICER TERRY: I think the goal
is to look in part about the behavioral aspects of a
before and after in mode shift. So certainly in concept,
the results could be useful elsewhere.

CHAIRPERSON NICHOLS: Right. I understand the
value, and that's the controversial area. So it's good to
have the data. Thank you.

MS. SCHILLA: And the last proposed project will
examine the measured emissions benefits of cool pavements.
Pavement materials that absorb less of the sun's energy
reduce urban heat islands, slow smog formation, reduce
building energy use, and cool the earth's atmosphere. If
cool pavements were used widely throughout the state, they
could reflect enough sun to offset the equivalent of at
least two million metric tons of CO2 and would have
significant air quality benefits.

This study will leverage and expand upon ongoing
research on cool surfaces. ARB is currently co-funding a
cool pavement demonstration project with the California
Energy Commission and the U.S. Department of Energy and
has funded related work to assess the reflectants of cool
roofs, which are much better understood than cool
pavement.

The project will measure emissions of air
pollutants from both cool and conventional pavement
materials commonly used in California and will conduct
greenhouse gas life cycle assessment for cool pavements. This project will be cofunded by Caltrans and will support the recently signed bill AB 296 requiring Caltrans and Cal/EPA to work together to study cool pavement technologies.

Results will inform the development of regionally appropriate guidelines for use of cool pavements and provide ARB insight into the actual climate and air quality benefits of these materials.

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MS. SCHILLA: The projects we have presented to you today benefit from nearly one million dollars in cofunding and funding for prior supporting research. They also reflect ongoing coordination with federal agencies and other funding organizations and will leverage multi-million dollar funding commitments from NASA, the National Institute of Standards and Technology, the U.S. EPA, and the coordinating Research Council for research that will directly support ARB's research needs.

As noted in the research update that you just heard, staff have also been working hard to improve research coordination among State agencies and are involved in a number of research coordination efforts to ensure that ARB funds are spent prudently and strategically.
MS. SCHILLA: We recommend that the Board approve these nine proposals, all of which support priority Board programs and decision making.

Thank you.

CHAIRPERSON NICHOLS: Thank you.

Does anybody have any questions or comments about any of the studies? Yes.

BOARD MEMBER BALMES: Not about any specific study, but a general comment, if I might.

CHAIRPERSON NICHOLS: Sure. Of course.

BOARD MEMBER BALMES: Well, again, I want to compliment staff.

As some of you know, Chair Nichols appointed a subcommittee of the Board, Dr. Sperling, Dr. Sherriffs, and myself, to look at the research portfolio and strategic plan for the agency. And one of the things we came up with was to try to focus the research on the sort of immediate and short term as well as long term needs of the agency with regard to regulatory initiatives. I want to compliment staff. I think that this portfolio of research proposals hits the mark well in that regard. I'm sure Dr. Sperling would say the same thing --

CHAIRPERSON NICHOLS: Good.

BOARD MEMBER BALMES: -- since many of the
research proposals are in his area.

   CHAIRPERSON NICHOLS: Well, I figured he had some
opportunity to review them before we came here today. I'm
seeing head nodding out there. Good.

   Anything else anyone would like to add?
   I think we can vote on these as a group then
rather than having to go through them one by one. So I
would request a resolution.

   BOARD MEMBER BERG: Madam Chair, I will move to
move the nine research proposals.

   CHAIRPERSON NICHOLS: I don't think we have to
read their numbers. They're sequential.

   BOARD MEMBER BERG: Yes. They're sequential.
   BOARD MEMBER LOVERIDGE: Second.
   BOARD MEMBER BERG: And Ron seconds.

   CHAIRPERSON NICHOLS: Without further ado, then I
don't think we need to have a single vote. We can just
vote by voice.

   So all in favor, please say aye.

   (Ayes)

   CHAIRPERSON NICHOLS: Any opposed?
   Any abstentions? Okay. Great.

   Congratulations. And thank you very much.

   All right. Our next agenda item this morning is
an update on AB 32. And we have some -- obviously, you
have had some important milestones since the Board last met. We want to wrap up 2012 and look ahead to what we're going to be seeing in 2013. And this is a good opportunity to do it.

Since its passage in 2006, as I think the world now knows, California has made great strides in implementing our global climate law. Many of the measures in the programs that were identified in the original Climate Change Scoping Plan have been adopted over the last five years. Implementation has begun for many of those. And we're getting reductions now that are putting us on track for meeting the 2020 greenhouse gas goals set by the legislation.

For example, the State has adopted a cap and trade regulation, which will provide a limit on over 85 percent of the state's greenhouse gases. And the first auction for this program was successfully conducted last month.

In addition, cooperation and coordination among our sister agencies is at an all-time high, which is also helping us to get to the 2020 goal, particularly with respect to the electricity sector, and will serve us well as we tackle the longer-term greenhouse gas reduction goals for 2050.

Mr. Goldstene, you'll please introduce this item.
And I know there is a report here as well.

EXECUTIVE OFFICER GOLDSTENE: Thank you, Chairman Nichols.

Today, staff will provide an update on activities related to the Cap and Trade Program, the update to the Climate Change Scoping Plan, and AB 32 related items we plan to bring to the Board for your consideration next year.

As you know, the first cap and trade auction was successfully conducted last month and staff will discuss the results of the auction and the next milestones.

In addition, staff will describe our proposed approach to updating the State's Climate Change Scoping Plan which was first approved by the Board in 2008. That landmark plan stimulated a long list of successful State and local initiatives, including several ARB measures such as the low carbon fuel standard and advanced clean cars. AB 32 requires that the Scoping Plan be updated at least every five years.

The 2013 update will define our climate priorities for the next five years to lay the groundwork to reach post-2020 goals. We plan to bring an updated Scoping Plan to the Board for your consideration next fall.

Finally, we'll highlight the upcoming AB 32
related items that the Board will consider in 2013. With
that, I'll ask Marcelle Surovik of the Stationary Source
Division to begin the presentation.

(Thereupon an overhead presentation was
presented as follows.)

AIR POLLUTION SPECIALIST SUROVIK: Thank you, Mr.
Goldstene.

Good morning, Madam Chairman and members of the
Board.

Today, I will provide you with an update on AB 32
related activities.

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AIR POLLUTION SPECIALIST SUROVIK: My
presentation today will address activities related to the
Cap and Trade Program, the update to the Climate Change
Scoping Plan, and AB 32 related items we plan to present
for your consideration in 2013.

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AIR POLLUTION SPECIALIST SUROVIK: I'll begin
with an update on cap and trade related activities.

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AIR POLLUTION SPECIALIST SUROVIK: The first
auction for the Cap and Trade Program was held on November
14th. This slide summarizes the results. As can be seen
in the slide, all of the 2013 vintage allowances were sold
at $10.09. Over five and a half million, or roughly 14 percent, of the advanced 2015 allowances were sold at the $10 floor price.

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AIR POLLUTION SPECIALIST SUROVIK: At 10:00 this morning, ARB released additional statistics about the auction. These statistics are based on qualified bids or just those bids used to calculate the settlement price after the bids have been evaluated against the holding limit, the purchase limit, and bid guarantees against all the submitted bids.

The most prominent difference between the statistics based on qualified and submitted bids is the ratio of total bids to the total 2013 allowances available for sale. It is lower when only qualified bids are considered.

For the November 14th auction, a very small number of auction participants exceeded their purchase limit, holding limit, or bid guarantee, which led to a higher ratio for submitted bids.

Before the Executive Officer certified the auction, ARB staff and the market monitor carefully evaluated all the bids and determined that the auction process complied with the regulatory requirements. These bids did not effect the final results of the auction.
AIR POLLUTION SPECIALIST SUROVIK: There were 73 entities approved to participate in the auction. The auction platform performed as designed, with no problems detected. Auction results were released on November 19th, five days after the auction was held.

The financial settlements from participating entities for allocation purchases were due by November 30th. The allowances will be transferred into entity's accounts tomorrow.

AIR POLLUTION SPECIALIST SUROVIK: Staff released the auction reserve price for 2013 on December 3rd. Allowances cannot be sold for bid prices below the reserve floor price. The quarterly auction reserve price for the November 2012 auction was $10. This price will increase for auctions in 2013 by five percent, plus the rate of inflation, as specified in the cap and trade regulation to $10.71.

The next quarterly auction of GHG allowances will be announced by December 21st and will take place on February 19th of next year.

Starting January 1st of next year, greenhouse gas emissions from covered entities will count toward their
compliance obligation. Covered entities will need to turn in allowances and offsets for 30 percent of their 2013 emissions in November 2014.

And finally, the first quarterly allowance price containment reserve sale will be held on March 8th. These sales offer allowances at fixed prices to serve as a cost containment mechanism and are only open to covered entities.

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AIR POLLUTION SPECIALIST SUROVIK: The State proceeds from the auction will be invested as mandated by Assembly Bill 1532 and Senate Bill 535 and will be allocated through the State's budget process.

Department of Finance, or DOF, must develop a three-year investment plan in consultation with ARB and submit the plan to the Legislature.

ARB must hold public workshops in different regions of the state and a Board hearing on the investment plan before it is submitted to the Legislature. The funds generated from the auctions must facilitate the achievements of reductions of greenhouse gas emissions in the state. Twenty-five percent of the available funds must be allocated to projects that provide benefit to disadvantaged communities and ten percent of the funds must be spent in these communities.
Finally, the California Public Utilities Commission, or CPUC must determine how the proceeds from the sale of the state's investor-owned utilities allowances are used. CPUC released a proposed decision on use of utility proceeds in November, which is expected to be voted on by the end of this year.

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AIR POLLUTION SPECIALIST SUROVIK: Now I will discuss the 2013 update to the Climate Change Scoping Plan.

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AIR POLLUTION SPECIALIST SUROVIK: First, some background on the initial Scoping Plan. AB 32 required the ARB to develop and approve a Scoping Plan that describes the approach California will take to meet the 2020 greenhouse gas emissions limit set forth in the law. The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. Consequently, staff plans to present an updated Scoping Plan for your consideration in the fall of 2013.

The following slides will discuss staff's approach to updating the Scoping Plan and the various elements we envision in the update.

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AIR POLLUTION SPECIALIST SUROVIK: The objectives
of the 2013 update to the Scoping Plan are to:

Highlight the State's progress toward meeting the 2020 GHG emission reduction goals set forth in AB 32;

Begin the transition for the State to meet the post-2020 goals set forth in Executive Orders;

Provide a high level view of how the State can develop a long-term strategy for reducing GHG emissions beyond 2020;

And define the State's climate priorities for the next five years.

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AIR POLLUTION SPECIALIST SUROVIK: To address the State's near-term and longer-term GHG goals, the update will have both the 2020 and the post-2020 element.

The 2020 element will focus on State, regional, and local initiatives that are being implemented now to assist us in meeting the 2020 goal. Numerous measures and programs identified in the 2008 Scoping Plan have been successfully put in place and are well on their way to achieving full implementation by 2020. The Scoping Plan update will provide a status report of these programs and, where applicable, staff will present revised projected 2020 emission reductions for them.

We will also include an analysis and discussion of co-benefits of these measures, including reductions in
criteria pollutants and air toxics, green jobs, and the development of green technologies and renewable power. The update will also include a discussion of local and regional initiatives that are underway, such as those addressing land use and transportation planning, that will assist the State in meeting its GHG emission reduction goals.

Finally, the 2020 element of the update will include a discussion on the latest climate science, including recent understanding of short-lived climate pollutants and brown carbon.

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AIR POLLUTION SPECIALIST SUROVIK: The post-2020 element will provide a high level view of a long-term strategy for meeting the 2050 GHG goals. These goals include Governor's Brown goal for the transportation sector as set forth in his Executive Order signed last year. This order sets a 2050 goal of GHG emissions that are 80 percent less than the 1990 level for the sector.

Staff plans to set a midpoint GHG emission reduction goal somewhere around the 2032 time frame to align line with the goals in the local air district's State Implementation Plans and the regional transportation plans.

The post-2020 element will assume the
continuation of GHG reduction regulatory programs that have been adopted and fully implemented by 2020 and will build on those regulatory programs, developing a process and specific recommendations for moving forward on a long-term GHG reduction strategy for the state, including necessary federal, State, and local policies, research priorities, and changes to the infrastructure.

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AIR POLLUTION SPECIALIST SUROVIK: The update will emphasize the integration of statewide policies. A number of statewide planning tools, policies, and reports have been or are in the process of being developed that will assist California in transitioning to our longer-term GHG emission reduction goals, as well as adapting to climate change impacts that may occur in the state.

These tools include the Governor's environmental goals and policies report, which is expected to be released next year, ARB's Vision for Clean Air Report, which takes a coordinated look at strategies to meet California's longer term air quality and climate change goals, the State Implementation Plan, the sustainable community strategies by the Regional Transportation Planning Agencies, ARB efforts in developing a sustainable freight strategy, California's Energy Commission's Integrated Energy Policy Report, Natural Resources Climate
Change adaptation strategy, and a number of other reports released by other agencies, such as Department of Water Resource Climate Action Plan and Caltrans Blueprint Report.

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AIR POLLUTION SPECIALIST SUROVIK: We plan to focus on the five key topics where competing policy needs may need to be resolved. These areas include the transportation sector, specifically fuels, infrastructure, and land use, the energy sector, including generation, transmission, and efficiency, the waste sector, the water sector, and the agriculture sector.

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AIR POLLUTION SPECIALIST SUROVIK: Staff also envisions a regional overlay element to compliment the development of the Scoping Plan update. The purpose of the regional approach is to focus on the local issues and concerns, such as transportation, infrastructure, and land use that are area-specific. The regional outreach efforts will focus on the northern, central, and southern California. They will occur through public forums that will have regional co-hosts. We expect opportunities for local leaders in these areas to take on key roles in formulating approaches to address these issues.

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AIR POLLUTION SPECIALIST SUROVIK: Staff plans to hold initial public workshops early next year to discuss concepts for updating the Scoping Plan. Public forums hosted by regional and local entities will be held in targeted regions in the state. In addition, staff will be consulting with the Environmental Justice Advisory Committee as we develop the update to the Scoping Plan.

Staff expects to release a preliminary draft of the updated Scoping Plan report for public review in the summer of 2013 and present a final version to the Board for approval next fall.

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AIR POLLUTION SPECIALIST SUROVIK: I will conclude my presentation with a highlight of upcoming AB 32 related items that the Board will consider in 2013.

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AIR POLLUTION SPECIALIST SUROVIK: These items will include regulatory amendments, new measures and informational items addressing cap and trade, fuels sustainable freight, and incentives.

In 2013, we plan to address linkage with Quebec and to present amendments to the cap and trade regulation to address Board direction given to staff in September, address potential changes to allocation, and to propose
new offset protocols. Two offset project types currently under review are the destruction of fugitive coal mine methane and the reduction in methane due to changes in rice cultivation.

In addition, we continue to make progress on the adaptive management plan for the cap and trade regulation. We are working on methods to assess potential localized air quality impacts from the regulation. We are also undertaking efforts to address potential forest impacts from the compliance offset protocol and are expecting that recommendations for a monitoring system will be provided to ARB in September 2013. We expect to have public working group meetings on both parts of adaptive management in early 2013.

The Board will see a number of fuel-related items next year. We plan to propose new biodiesel and renewable diesel fuel specifications as well as amendments to the low carbon fuel standard.

In addition, we plan to present amendments to the E-85 fuel specifications and the engine certification fuel at the end of next year.

Also, an Executive Officer hearing will be held next spring to add fuel pathways and crude oil carbon intensity to the low carbon fuel standard.

Staff's sustainable freight efforts will be in
full gear next year and staff plans to report to the Board next summer on our progress in this area.

And finally, we plan to present the investment plan for the cap and trade auction proceeds to the Board in the spring. Additional incentive funding for building efficiency programs will be available to the State from the passage last month of Proposition 39, which provides funding for clean energy projects.

Coordinating these two incentive programs with funds from AB 118, the electric program investment charge program, and other sources, will allow the State to maximize its future GHG reduction opportunities.

This concludes my presentation. I would be happy to answer any questions you may have.

CHAIRPERSON NICHOLS: Thank you.

I'm expecting we'll have a considerable discussion. But before we do, we do have two people who have signed up to speak to us. So why don't we take them first, Paul Shepard and Brian Biering, both from Wildflower Energy.

MR. SHEPARD: Hi. Good morning. My name is Paul Shepard. I'm the Director of Asset Management for Wildflower Energy, and I'm here to comment on the pre-AB 32 contract issue.

Wildflower is the owner of two peaking facilities
in southern California: Indigo, which is 138 megawatt peaking facility located in Palm Springs and the Larkspur, which is a 94 megawatt peaker in San Diego County. These facilities were approved under California's emergency siting procedures during the 2001 energy crisis. I believe Larkspur was the first and Indigo was the third. And both are currently operated under pre-AB 32 contract.

As peaking facilities, Wildflower's plants are very flexible and can provide fast capability, energy capacity, and response in market demand. The facilities are needed to help ensure reliability in Southern California, particularly in light of a potential future energy constraints in southern California.

Many energy sources in southern California, like once-through cooling and nuclear may not be available. And the availability of emission reduction credits will make it difficult to build new sources in southern California area or in the South Coast basin. It will be an increasing need for conventional sources like Wildflower to support the growing number of intermittent source, such as wind and solar. However, our facilities are in serious jeopardy. They are operated under a long-term pre-AB 32 contract with a power marketer third-party off taker that does not address greenhouse gas costs.
At the time, this type of long-term contract was strongly encouraged during the energy crisis to help stabilize California's power costs. We understand that the ARB's preferred method was for both parties to get together to try to renegotiate such contracts. And it seems to be working for the entities that have contracts with CPUC jurisdiction. But our counterparty is not subject to the CPUC's jurisdiction. And despite our numerous attempts to renegotiate the contract, our counterparty's simply unwilling to accept any responsibility for greenhouse gas costs. They have no incentive to re-negotiate the contract and, instead, have incentive to run our facilities even more than we normally would in our peaking capacity. They've indicated that will be in case starting in 2013.

So we're here today to ask the Board's assistance, which my attorney Brian Biering, will detail in further comments.

CHAIRPERSON NICHOLS: Thank you.

MR. BIERING: Good morning. My name is Brian Biering. I'm with the Law Firm Ellis and Schneider and Harris. I'm here today to speak on behalf of Wildflower Energy.

The Board previously addressed this issue in the context of Resolution 1233 back in September. That
resolution did a couple of things. It directed staff to propose regulatory amendments to bring back to the Board in mid 2013, which would provide for transition assistance for these contracts. We certainly very much appreciate that direction by the Board. But what we're hoping today is that the Board can provide more clarity on that direction, specifically relating to three issues that we would have with the existing direction that the Board has provided.

The first issue is about the timing. The resolution -- or the regulatory amendments come out in mid-2013. That means any free allocation or transition assistance really wouldn't take place until 2014. In the mean time, you know, we will need to assume that we wouldn't be receiving any sort of transition assistance. We need to move forward with procuring allowances. That's going to expose the projects to a significant cost and really could undermine their viability.

The second issue is that in speaking with staff about what they're thinking with the transition assistance that they would propose something along the lines of a transition assistance that would basically be based on assumed efficiency rate.

And the concern there is that our projects, as Mr. Shepard mentioned, are peaking facilities. As peaking
facilities, they have a higher heat rate. They start faster. They're designed to respond to market needs and fill in demand on a short-term basis. And because they have a higher heat rate, if any transition assistance was based on a lower heat rate, it would really leave a significant portion of our compliance obligation unsatisfied.

The third concern is that the Board resolution directs the staff to work with the Public Utilities Commission. And while, you know, we agree with that and there's certainly been some progress at the Public Utilities Commission, we really believe the California ISO is the appropriate entity for staff to be working with, in part, because they're the ones that have direct jurisdiction over the power marketer we have a contract with and have a better sense I think of the potential for market manipulation in this case.

So we've detailed these suggestions in the context of the suggested Board resolution, which we provided in a letter. And I've also brought copies of that letter if that would be helpful. So we would be happy to answer any questions, if you have any.

CHAIRPERSON NICHOLS: Thank you. Appreciate the issue.

Before I recognize anybody else, I just want to
say we will respond to your letter. And we'll continue to
work this issue. But we do understand that it's an issue.

    Mr. Loveridge.

BOARD MEMBER LOVERIDGE: I just wondered if staff
wants to make any initial comments. When they actually
came to my office, their concern seemed reasonable to me.
So I wanted to see if you can give any --

    EXECUTIVE OFFICER GOLDSTENE: Edie Chang will
give a quick response.

    ASSISTANT CHIEF CHANG: So we are, as the
gentleman said, working through this. And the Board has
directed us to handle the legacy contracts.

    We will be starting workshops next year to start
looking at how to handle them. We are talking with Cal
ISO, and we are aware of the unique role that peaker
plants play and the grid liability within California. And
those are things we're going to be considering as well as
the specific situations that each these parties are in as
we work through these legacy contracts.

    CHAIRPERSON NICHOLS: I would just underscore
that the relationship that we've developed with the
California independent system operators is close and
intense and we are talking to them on a very regular basis
about all the issues related to the electricity markets.
Because everything about this program has a relationship
to the markets. And we want to make sure that everything we're doing is coordinated.

Ms. Berg.

BOARD MEMBER BERG: Thank you.

I would also like to encourage staff to look at who controls what here. Enforcement is critical. But if you have plants that were owned by a party who sold it to another party who has a contract that has all of the say as to how that plant runs, I'm not sure the operator is the person we should be regulating here.

So I think there is a set of circumstances, and I would really appreciate if legal would take a look at if we aren't sandwiching an entity or a group of people that truly do not have the ability to -- of their -- they don't have control of their own destiny. And I'm really concerned about that.

CHAIRPERSON NICHOLS: Okay. Any other comments or questions on this one? If not, thank you, gentlemen. Hope to be back with you soon. And we'll get this resolved.

So back to the more general prospects for the coming year and what we've done to date. I just wanted to mention a couple of things.

The first was I'd like to go back to that slide that showed the various State plans and reports that are
being issued in the coming year, because it's pretty
dramatic, actually. Thirteen, can you put slide 13 back
up? Whoever is in control of this. Thank you.

So obviously the multiplicity of these items
leads to several questions. Like, are these coordinated?
Does anybody have a sort of an overarching strategy for
these things? And the answer is a little bit better than
you might think. All of these reports and documents are
required by one or another statutes or directives that
we're involved in.

But, actually, the Scoping Plan is in a pretty
good position to integrate all of them in one place. And
the good news is that the Governor's Office of Planning
and Research has specifically asked us to do this. It is
they're tracking what we're doing. They are interested in
having us roll up these other items into the plan. And so
I'm actually quite optimistic that for maybe the first
time ever, at least the first time that I can recall, the
State will, in fact, have in one place the air and
transportation and energy strategies, at least the basics
of what we're doing, as well as the relationship with
local/regional land use planning. Not necessarily one
gigantic master plan. I think that would be probably
counterproductive because these things are developed for
different audiences and different purposes. But at least
one place that a person could go to that will track all of
the other plans and sort of parallel them as well.

And obviously, this is something that hasn't been
done before. It's a challenge for our staff. It's also a
tribute I think to ARB that people think we can do this.
And we're going to be getting help as well as from other
agencies, of course.

But still, it's a pretty remarkable undertaking.
So while this may not be kind of at the top of anybody's,
you know, press campaigns as they talk about AB 32, it's
just I think a pretty remarkable element to come out.

Really, my only regret about this is that Scoping
Plan, this doesn't sound all that exciting. It's not the
thing everybody is going to get excited about. Oh, boy, a
Scoping Plan.

But the reality is that the last Scoping Plan
that we did, which led to where we are now, had enormous
impact. And I think this one, if we do it right, could be
even more influential in kind of subtle ways. You know,
not that we get to tell everybody else what to do, but
just that we get to actually figure out how these
different policies could work together. So I just wanted
to really underscore that item, especially for those who
have been involved in multiple planning efforts over the
years, which many of our Board members have. I hope that
we'll be able to bring back some interesting milestones.

    Yes, Mayor Loveridge.

    BOARD MEMBER LOVERIDGE: If I just could add a
couple of sentences to the Chairman's comments. This
should not simply be a technical document that you declare
a success and it fills up a series of papers and says
we've integrated it all.

    It seems to me I saw the Scoping Plan as one of
the most important things the State has done. And somehow
this update I think needs to have a similar kind of
status. This is not just a technical document, but a
document that's trying to define the future choices for
the state. So the success of this is not that it puts
everything together, but the success of it is the story
that it tells.

    EXECUTIVE OFFICER GOLDSTENE: Right. Our
expectation is both in the development of the plan over
the next year and the actual publication that will drive
the discussion and inspire and motivate and direct the
action in all these areas.

    CHAIRPERSON NICHOLS: So just another comment
from me, since everybody else seems to be quiet today, is
going back to the issue of what's next on our existing
programs, as I think we kind of skated over this gently,
there is a lot of work left to be done on the cap and
trade rule. And there are going to be multiple points in
the coming year where we're going to be looking at
specific items.

The comment here today just illustrated one issue
that staff has to grapple with over the course of this
first compliance period, as well as looking ahead to the
next stages of the program. And the efforts to make sure
that the revenues that are coming in both from the Cap and
Trade Program and from Prop. 39, which also covers
somewhat similar territory and needs to be also integrated
in the planning, are going to consume a lot of our staff
time and effort over the coming year.

Yes.

BOARD MEMBER BERG: As we're looking at that,
too, the research is going to be critical because as we're
encouraging behavioral changes and also giving choices, we
really need to spend these dollars wisely to be sending
signals to the citizens of the state of California as to
their choices and benefits for those choices. So that
adds another element. So there is, once again, a lot of
work to be done. It's an exciting time.

CHAIRPERSON NICHOLS: Just in case anyone thought
they could take a quiet break for next year, want to put
you on notice.

All right. Does anybody else have anything
they'd like to ask or add? If not, thank you very much.

Appreciate the update.

We are going to be moving next to the
presentation of the Haaen-Smit Clean Air Awards. But
before we do that, I wanted to take this moment because we
have a resolution, which the Board members have seen,
recognizing Tom Cackette on his retirement. And I spoke
about Linda Murchison earlier and mentioned that there was
a wave of retirements. Well, at the head of that wave or
the crest of the wave, or whatever, is our long time and
very highly prized head of our mobile source program,
Deputy Executive Officer Tom Cackette. And since I
frequently take credit for having been part of recruiting
him to the Air Resources Board, it's now my obligation to
also be part of his departure from us at the end of this
month.

We are noting Tom's contributions, his
substantive contributions to air quality. We will be
doing that in a few minutes. But we also have a
Resolution from the Board, which will be presented to him
in a nicer version with a seal on it and in a frame
suitable for hanging in his study or whenever he chooses
to, that I thought would be good to read and have the
Board formally endorse.

So I'm going to do that right now. This is Board
Resolution 12-52.

"Whereas, Mr. Thomas Arthur Cackette is retiring from public service after a distinguished 30-year career with the Air Resources Board, faithfully serving five Governor's, eight Chairs, and four Executive Officers.

"Whereas, Tom started his career as a 'real rocket scientists,' at Rocketdyne and then worked for eight years for the United States Environmental Protection Agency in their motor vehicle emissions laboratory in Ann Arbor, Michigan, before joining the Air Resources Board in 1982 as a new program consultant and quickly rising to his current position as Chief Deputy Executive Officer in 1987.

"Whereas, Tom is leaving an extraordinary legacy of establishing precedent-setting emissions standards for all types of mobile sources that are technically and economically feasible and has effectively communicated these findings in a variety of forums, including Board meetings, and an untold number of public workshops, legislative hearings, and regulatory hearings at the State, federal, and international
level.

"Whereas, Tom's accomplishments include the implementation of many first-in-the-world clean air programs, such as the first low emission vehicle and zero emission vehicle regulations, the nation's first hydrogen fueling network, the invention of on-board diagnostic systems, and the first exhaust and evaporative standards for small engines."

And he will tell you that he didn't do all this by himself and that's true. But never the less, he was the person in charge when all of these things happened and played a very significant role. That's not in the text. I'm just editorializing here.

"Whereas, Tom's crowing achievement was to usher the world's first greenhouse gas standards for passenger vehicles in 2004, which President Obama then adopted nationally.

"Then Tom did it again in 2012, negotiating with federal agencies, automotive manufacturers, and others to adopt the second phase of greenhouse gas standards for passenger vehicles that became the template for the 2012 final federal regulations, establishing a new 54.5 mile per gallon national fuel economy standard for
2025 passenger cars and light trucks.

"Whereas, Tom's efforts to develop and improve the smog check program are legendary, particularly considering that for many years he drove a diesel Volkswagon Rabbit, which coincidentally was exempted from the program.

"Whereas, Tom wisely recognized that regulations alone are not always the best solution for reducing air pollution, and therefore, championed and guided the investment of over a billion dollars of incentive funds that have been used to dramatically accelerate the cleanup of diesel engines and advance the use of clean fuel vehicles.

"Whereas, Tom's vision turned ARB's Haagen-Smit laboratory in El Monte to a world-class research center that has generated a tremendous amount of first-of-its-kind policy relevant data critical to demonstrating technical and economic feasibility of new air quality and greenhouse gas regulations and has further enhanced ARB's excellent scientific reputation.

"Whereas, Tom's life work clearly reflects his unique and expert ability to bridge the seemingly irreconcilable worlds of highly
technical information with policy setting in a way that pushes innovation and drives the development of new technologies, resulting in both substantial public health benefits and lower consumer costs.

"Whereas, Tom's easy going demeanor and pragmatic problem solving approach earned him the utmost respect from the Board and staff, regulated industry, environmental advocates, and the air pollution control community, by particularly the collective staff of the Mobile Source Operations Division, Monitoring and Laboratory Division, and Mobile Source Control Divisions that he effectively led for so many years.

"And whereas, Tom's legacy is embodied in the vastly superior motor vehicles on the road today as well as the substantial improvements yet to come.

"ARB's enhanced scientific credibility, the clean transportation policies around the world that carry California's imprint, the talented staff and managers that have developed under his mentoring, and the improved public health and welfare of every Californian resulting from
improved air quality.

"Now, therefore, be it resolved, that the Board gives tribute to Mr. Thomas Arthur Cackette for his contribution to the people of California and extends a heartfelt thank you for his accomplishments and the significant role he played in shaping ARB into the world leader in clean transportation.

"Be it further resolved that the Board directs Tom to fully and thoroughly enjoy his retirement with his wife, Helen, and children, Laura and David, while continuing to find significant pleasure in poker nights, fine wine, sushi, and from time to time a PB&J sandwich.

"Executed at Los Angeles, California on this of 6th day of December, 2012."

May I ask your unanimous consent for this Resolution? Thank you.

(Applause)

CHAIRPERSON NICHOLS: You are allowed three minutes of response time, if you would like. Yes, please.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Well, thank you very much. That was a very impressive Executive Order for me, and I greatly appreciate it. And I'll find a place on the wall for it. And I greatly appreciate it.
The thing I wanted to say, working for this Board has been an honor. It's been something that's been -- made my life pleasureful. In addition, you have an unbelievable staff of people. I've been lucky to have Patty working for me and making my life so much easier these last few years. It's that sort of team spirit that I think is all the way through the Board to pull off things like the AB 32 Cap and Trade Program. When I first heard about this, I thought, this is never going to work. This is so much more complicated than the Advanced Clean Car Program. And it was. But they pulled it off like it was nothing.

So I think I'm really proud to be associated with that for so many years. And certainly know that you're probably be associated with the staff and the team here that supports the goal of clean air and climate improvement for the future.

I do want to say one thing about the diesel rabbit though. Just so you know that there is always balance here. That while I didn't have to take that to smog check, Dr. Balmes and I who drive diesels today, we have to go when the car is two years old and you have only to go when the car is six years old. I'm atoning for the sins here of having that little puffer from the past.

Other than that note, again, thank you very much.
And it's been a great, great honor to be working for the Board.

(Applause)

CHAIRPERSON NICHOLS: Thank you, Tom.

Tom has had to endure -- and he's done it with very good grace -- a whole series of events. And it's not over yet. He's not leaving until the end of the month, and the staff in Sacramento haven't had their chance to wish him a farewell yet either. So this is just going to continue rolling forward, Tom. We're not done with you yet.

Not to mention what happens after you retire, because we know where you live and we know how to find you.

But we are left -- one of the things that isn't really mentioned in the Resolution, but that I think maybe those of us who have been following what goes on in some of the corporate board rooms these days ought to take note of the fact that one of the things that's been a hallmark of the ARB I think in recent years is the care and effort that's gone into managing transitions, that knowing that we were going to be experiencing a demographic change as people get older and retire, our senior staff has done a really phenomenal job of teaching, training, cultivating, exposing the talent that we have.
And so Tom's departure leaves behind a number of extraordinary people whose careers he helped to shape and mentor. Obviously, his successor, Alberto Ayala, who is extremely well positioned to come in and take the program onto the next steps, but also I know people like Eric White who is right behind him and Edie Chang is another and Bob Cross, of course, from El Monte and Annette Hebert and all the people that have worked with him and have been part of the same experience. So it's not that they all shared in the accomplishments, which they did you, it's also they really are all ready to carry on. And I think that speaks extremely well of the organization and of Tom's leadership as well.

This is a big day for recognizing people. And I guess that's a good thing at the end of this year. But this is the Board meeting at which we're going to be presenting the Haagen-Smit Clean Air Awards. And we have a slide presentation that goes with this.

And I guess since we didn't rehearse this, I'm just going to read the text and the slides will be there.

EXECUTIVE OFFICER GOLDSTENE: They will magically appear.

CHAIRPERSON NICHOLS: Somebody else usually does it. Okay. I'll do it.

(Thereupon an overhead presentation was
CHAIRPERSON NICHOLS: So the last item on our agenda is the ARB Haagen-Smit Clean Air Awards. So it's a privilege to present this annual award, where we recognize today's leaders in air pollution research, technology, and policy. The Haagen-Smit Clean Air Awards are made in honor of the late professor Arie J. Haagen-Smit and his important contributions to air pollution science and the significance of his career as ARB's first Chairman.

Today's presentation will highlight the history of the award program and the accomplishments of the 2012 award recipients.

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CHAIRPERSON NICHOLS: Arie Haagen-Smit, a native of the Netherlands, was a biochemistry professor at the California Institute of Technology, Cal Tech, in Pasadena for 16 years before beginning his air pollution research in 1948.

It was his research that found that most of California's smog resulted from photochemistry, when exhaust from motor vehicles and industrial facilities react with sunlight to create ozone. This break-through provided the scientific foundation for the development of California's and the nation's air pollution control
Leaving his plant studies behind, he continued working in the field of air pollution research and control, taking the smog problems in L.A. head on and becoming ARB's first Chairman in 1968.

In 1973, in recognition of his contribution, Dr. Haagen-Smit received the National Medal of Science, this country's highest scientific honor. Dr. Haagen-Smit passed away 35 years ago, but his legacy lives on.

I actually had the opportunity to meet Mr. Haagen-Smit on a couple of difference occasions. He was a very strong-minded individual and somebody who always was pushing for what he believed was right. He also had the license plate "ARB1" on his car, which I've envied. I don't know what happened to it. But it was quite distinctive. But he drove around with that on his car.

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CHAIRPERSON NICHOLS: Since 2001, the Air Resources Board has sponsored the Haagen-Smit Clean Air Awards. Over the last 11 years, 31 distinguished people have received the award. I have, too.

I'm pleased to announce the three recipients of the 201 Haagen-Smit Clean Air Award.

I'm going to read the information about these folks, and then we'll present them with their actual
awards at the end.

So perhaps not surprisingly, in light of all that we've said about him, the first recipient of the award today is Tom Cackette for his work in the area of environmental policy.

The next is Andrea Hricko for her work in the area of public education.

And then Dr. Ron Loveridge for his work in the area of environmental policy.

After I highlight their accomplishments, they'll come up to the podium and receive their awards.

Although, Andrea Hricko is not able to be with us today. She contacted me in early hours of this morning. She was taken sick on her way back in the middle of the night from an asthma talk that she was giving in San Francisco, and her plane was canceled, which didn't make it any better, four hours of sitting at the airport.

So I hope we'll have a chance to recognize her in person at a later Board meeting. But we're going to talk about her anyway. I said we would promise to say nice things in her absence.

As you heard at the beginning of the meeting just a little bit ago, Tom has been with the ARB since 1982 and has served as its Chief Deputy Executive Officer, managing some of the Board's key programs ranging from motor
vehicles emissions controls to the air monitoring and laboratory operations.

He's been involved in many areas of air pollution control since the 1970s, but he's most widely recognized for his guidance and perseverance in mobile source control regulations, many that have influenced national and international policies. His most recent contributions, of course, are the low emission vehicle and zero emission vehicle regulations, along with the incentive programs that have become so embedded in the framework of our operations.

In 1993, he was instrumental in developing the new heavy-duty vehicle standards, leading to dramatic reductions in diesel particulate, sulfur oxides, and nitrogen oxides. In this program, he has held together throughout the past two decades resulting in new developments in fuels, engine technologies, and in unprecedented levels of industry and government collaboration.

Under Tom's leadership, the Low Emission Vehicle Program, which was first adopted in 1990, paved the way for numerous clean air vehicle technologies. And Tom has now worked not just once, but twice with federal agencies to expand California's light duty vehicle programs to the national level. Thanks to these advanced clean cars
programs, new vehicles in 2025 will be emitting 75 percent less smog-forming pollution than they do today. And that's after previous waves of reductions in emissions, which brings us to the point where it's not true that the air coming out of most cars is cleaner than what goes in. But it's close to being true. Very close to being true.

Carrying on from the work that he began in inspection and maintenance programs at U.S. EPA, Tom has been fundamental in reforming that program. And it's one that still -- although most people are barely aware of its existence -- at least if you drive newer cars, the fact is it still is responsible for some of the largest emissions reductions in California. And through his leadership and persistence in working with the Bureau of Automotive Repair and the Legislature, new smog check testing procedures are set to roll out next year, 2013, that will continue to ensure an estimated 70 tons of pollutants per day are reduced, while saving consumers an estimated $64 million annually.

Tom not only understands the political, economic, and technological barriers and possibilities in air pollution control, he has a knack for working with all stakeholders in a very productive way. He's brought clarity in air quality issues in a broad range of forums throughout his career as Chief Deputy Executive Officer.
He's dedicated his time openly to sharing his knowledge and mentoring staff, assuring the legacy of highly qualified committed professionals who will carry on his work. Although he's retiring from the Board this year, his work and his passion to improve California's air will continue to be a legacy. And we thank him for his work.

The next person that will be receiving the award, Andrea Hricko, as I mentioned is not able to be here today. Many of you, however, know Andrea or have met her in other occasions. She is a professor of clinical and preventative medicine at the Keck School of Medicine at the University of Southern California, as well as Director of the Community Outreach and Education Program of the Southern California Environmental Health Sciences Center, a partnership between USC and UCLA, something that many people don't think can be done, but she has done it.

She also directs the Community Outreach and Translation Core of the USC, UCLA Children's Environmental Health Center funded by the National Institute of Environmental Health Sciences and U.S. EPA.

Her current work involves environmental justice topics surrounding public health impacts from goods movement in the ports of Long Beach and Los Angeles. She served on the U.S. EPA's National Environmental Justice Committee's Working Group on Ports and Goods Movement, the

She's also the founder of the Impact Project, a nationwide, community and academic partnership focused on reducing the health impacts at international trade. She is widely regarded as an inspiration to the youth and community members she serves and for empowering community-based organizations to educate their communities and local policy makers about the health effects of air pollution and more effectively advocate for cleaner air and better land use decision making.

Ms. Hricko has been recognized by South Coast AQMD with an Environmental Stewardship Award by Physicians for Social Responsibility, with an Environmental Health Champion Award, and by the nonprofit Coalition for Clean Air with an Environmental Leadership Award for her long time efforts to help the public understand the science of air pollution's public health impacts. We are honored to add the Haagen-Smit Clean Air Award to this list.

And we thank her for her dedication to the community and for improving California's clean air legacy. So we are going to make sure she gets that award presented
CHAIRPERSON NICHOLS: And finally, our last award goes to our own Dr. Ronald Loveridge. We always call him Mayor, but we could call him doctor, too. He has served on the Air Resources Board for eight years and has been Mayor of Riverside since 1994, serving on the South Coast Air Quality Management District's governing Board since 1995. He's also an associate professor in political science at the University of California Riverside where he has taught since 1965.

His accomplishments as mayor of regent, including implementing A Strategic Action Plan to make Riverside a Model Clean Air City in 2002. And in 2005, Riverside was recognized with an award by the South Coast Air Quality Management District as a Model Clean Air Community.

Also, in 2005, Mayor Loveridge appointed a Clean and Green Task Force for the city. And in 2007, this Task Force, with the Mayor's endorsement, put forth a sustainable Riverside policy detailing eight main directives including: Urban forestry, solar initiatives, alternative transportation modes, green building efforts, and water and air quality improvements.

In 2009, Riverside was officially designated as the First Emerald City by the California Department of
Conservation.

As an ARB Board member, he's been a longstanding champion of plug-in electric vehicles and community EV readiness. He's been instrumental in achieving emissions reductions from rail yards in the South Coast and maintaining the integrity of the 2005 rail yard agreement throughout his membership on the Board. He's also frequently served as the Board's resident expert on local government issues.

Dr. Loveridge was President of the League of California Cities, a member of the Regional Council of the Southern California Association of Governments, and has been honored by the American Lung Association for his leadership in protecting public health from air pollution. He has been recently recognized by the Southern California Association of Governments for his material and significant contributions to the regional, transportation, housing, land use, and environmental planning.

Ron Loveridge has the intellectual integrity of a true leader. His professional and approachable demeanor is irreplaceable and is going to be missed on this Board, but it's not going to be happening just yet, I'm happy to say. He will continue to serve for a while longer until a successor is appointed. And so we're not saying goodbye to him just yet.
I do want to add, though, that he is stepping down from his post as Mayor, relinquishing the gavel to a successor who seems to be quite capable also of carrying on and going back to teaching at U.C. Riverside. But I had the opportunity to listen to some of his fellow citizens recognize him a couple of nights ago at the Riverside City Council meeting. And if you think that he's been spending all of his time on all of those air quality and environmental initiatives that I mentioned, you would be wrong, because in addition to that, he has been apparently back in Riverside playing a very significant role in human relations, in youth development, in model programs for the deaf, in work with senior citizens, in arts awareness programs, not to mention being a leader in the Sister Cities Movement, which seems to have sent him to many corners of the globe and gotten Riverside on the map as a leading international city as well.

So this is not a person who has limited his activities to one issue area. But we are very blessed that he has chosen to spend so much of his time with us on the Air Resources Board.

So I'd like to now call the winners up to get their awards and have a photo with the Board. We can do that up here. And we could have public testimony, but why
would we do that? Nobody is going to object, as far as I know. So okay. I think the record is closed on this item.

And I'm going to call Tom up and Ron is here. We will take a photo.

Tom, it's my great pleasure to present to you the Haagen-Smit Award for Outstanding Contributions to Environmental Policy. Here you go.

(Applause)

CHAIRPERSON NICHOLS: Do you want to say a few words?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Well, again, I'm just really honored to get this. And it's humbling to be part of this group of incredibly great people that have received this award, including Dr. Loveridge. And it will be something I'll be looking at for many days and the rest of my life, sitting on the credenza somewhere. It's really appreciated.

Thank you so much, Mary. Thanks for hiring me, too. That was probably one the necessary requisite.

CHAIRPERSON NICHOLS: That's true. We had to lure you out here. I think the weather was the main thing as I recall.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: That was something.
CHAIRPERSON NICHOLS: Anyway, you got to stay around. So all right. And we have also a photo for Ron here. I've already told you a lot about Ron Loveridge, so I'm not going to say much more.

But the Haagen-Smit award is obviously something that means a lot to ARB and people who follow the history of air quality. So I hope this will take its place among your many other awards.

(Applause)

BOARD MEMBER LOVERIDGE: Well, first, I join Tom in recognizing who is on this list and join those being recognize today.

As you exit, Tom must have the seem feeling. You're not only looking forward, but also looking back.

I would make just a couple personal comments. I remember growing up in the Bay Area and doing grad work there was a disc jockey who talked about air quality in Southern California. He had a name Don Sherwood. He had a can of clean air that on occasion he would send down to southern California. I thought that was kind of amusing.

I remember coming down to be interviewed in the wintertime at U.C. Riverside. And when I came back up, someone said, "The air is not good down in Southern California, not good in the inland area." I said, "It didn't seem too bad to me at the wintertime."
And then I remember my wife, after turning in her dissertation the last day at Stanford, we packed what we had in the car and came to the Tejon Pass. And we looked at each other and said, "My God, what is that?" And literally my first day on the UCR campus, I went up to the air pollution lab and talked to a fellow named John Middleton who became the first head of smog control at the federal level and I asked, "What is this stuff? And how do people take it?" And I was interested particularly in terms of a political scientist in terms of the public and the community accepting what was something I didn't realize quite what was there.

I remember one particular comment later on from attending a conference where Arie Haagen-Smit was speaking and someone was asking how does a world class scientist decide decisions on the Air Resources Board. And I still remember his answer. He kind of smiled and said he listens very carefully to what people say. And then when he decides to paint his reel, he stops. That was his instructions he was giving by way of explanation.

I did a little research on what was the Clean Air Act and how California got the exemption we did. It was Senator George Murphy introduced it in the Senate, but the critical action was in the House. This had to go through the Commerce Committee, which John Dingle was a long time
and powerful Chair of this House Commerce Committee. And there was an effort where the Southern California particularly, but northern California also, sort of rallied. It was republicans and democrats. It was a State rally that, in effect, took this to the House floor and Dingle was turned back and the California exception was included.

I remember talking to John Dingle and he said he hoped California would be cut off and float out in the Pacific Ocean. He was not happy by losing that vote that day.

But I became interested in the policy process, not so much the public health, but the policy process. And after elected as Mayor and as council member, I thought our city needed to be -- since we were a downwind place, we needed to be a leader California in terms of being green and being a leader in air quality measures.

So I take some pride as I leave is that we're one of I think the greenest cities in California. We competed with Santa Monica and Jersey City and ourselves in a contest by the Chamber last year. Santa Monica edged us out. But we regard ourselves as competitive.

And then in the air quality area, as Barry Wallerstein is sitting in the back will know, I've been a champion of using AB 2766, not simply handing it to staff
to fill budget holes, but rather to see it as a policy 
opportunity for electeds. And I think we've taken a 
number of major steps from transits free for college 
students. We reduced it for seniors. Last month, we 
received the title of having the greenest public fleet in 
the country. We worked very hard to use AB 27 in ways hat 
reduce air pollution.

But I think the start of all this and maybe a way 
of getting me out of a field and worrying about place was 
that initial response to air quality, which in 1965 there 
were 200 first stage smog alerts. There were 65 second 
stage. It was a wall that you not only saw but felt. And 
it did seem to me that one had an obligation to change 
what one found.

So I'm honored to be a part of this award and 
also honored to serve on the Air Quality Board locally in 
the state. And one hopes one's helped to move the ball 
down the field. But thank you to all those who have been 
involved in this effort. Life and air is much better here 
in southern California in 2012 than when I came in 1965.

(Applause)

CHAIRPERSON NICHOLS: In my enthusiasm, I 
neglected to recognize that we are actually in a formal 
meeting here. So we will move now to the public comment 
period. We have two people who have signed up to testify.
So let's begin with Bill Davis. Mr. Davis, are you here?

MR. DAVIS: I am.

CHAIRPERSON NICHOLS: Okay. Good. And then Sean Edgar is our other witness. And again three minutes.

MR. DAVIS: I've heard that before.

Good morning, Chairman Nichols and members of the Board. Welcome to what we normally call sunny Southern California. The clouds will probably be gone by the time you guys leave for lunch. Please accept our best wishes for the holiday season and for the coming new year.

Mrs. Riordan, also please accept our sincere condolences for the loss of your husband.

I'm Bill Davis. I'm now the editor of the Southern California Contractors Association and California Construction Trucking Association Publications. And I'm an active member of the Construction Industry Air Quality Coalition.

I'm here today in my role as reporter to report to you a major problem that's emerging in the portable engine registration program. CIAQC has a special standing to discuss issues related to the PERP, as we were the organization that got the enabling legislation passed in Sacramento in the mid '90s. And we've been an active partner in working with the Air Resources Board in
developing the original regulation and its many subsequent amendments.

We needed the PERP to help the construction industry cope with the crazy quilt of conflicting local air district regulation of this category of diesel and large spark ignition engine equipment. And the Legislature heard our plea in the '90s. We're here today to report that the local air districts are back in the business of setting their own, often conflicting, regulations on our equipment. This problem surfaced nearly two years ago in San Diego and is now spreading. We're getting reports of new requirements in the south coast and San Joaquin. We're sure that more will follow.

And our industry, as you all know, has suffered rather severely during the great recession. I'm happy to report that this year our industry is up about seven percent from where it's been, which is good news. But seven percent brings us from a decline of 50 percent to a decline of 43 percent. So we're still in trouble. And in July of this year, all the construction activity you're seeing on the highways is going to be reduced by roughly 50 percent as Caltrans' budget gets cut by that amount.

We brought this problem with the local air districts to your staff and the PERP unit. We want to particularly commend Mike Tollstrup his help. He was
helpful in arranging a series of meetings with the California Air Pollution Control Officer Association. But after a year-and-a-half of meetings with CAPCOA, I'm sorry to say we have reached impasse and have been met with intransigence and indifference. We have not gone to these meetings alone. CIAQC has built a coalition of at least ten other industries who were impacted by the local district approach to the PERP.

Our coalition is prepared to continue the effort to return PERP to its core mission of adequate regulation of this equipment on a statewide basis, but not a confusing collection of conflicting rules.

We're here today to ask the Board to appoint a special subcommittee to investigate this issue, get input from your staff from industry and CAPCOA on possible solutions and, if necessary, draft additional amendments to the program to strengthen the statewide approach that's worked so well for the past 15-plus years.

Thank you.

CHAIRPERSON NICHOLS: Thank you.

We can't take action on this item today, I believe, because it's not a noticed agenda item. But I think we can direct staff to look into and to report back to us.

EXECUTIVE OFFICER GOLDSTENE: We'd like to give
you a report about the work we've done to date and then
come up with some ideas about next steps.

CHAIRPERSON NICHOLS: All right. And if
appropriate, we certainly would consider the Committee
approach. But we would like to know more.

MR. DAVIS: Absolutely appropriate. And we're
happy to also participate in any future activity.

CHAIRPERSON NICHOLS: Great. The next step will
be then for the staff to report back to us, which
hopefully will happen before the next Board meeting.

MR. DAVIS: Okay. Great. Thank you.

CHAIRPERSON NICHOLS: Thank you for coming. Mr.
Edgar.

MR. EDGAR: Good morning, Chair Nichols and Board
members. I'm Sean Edgar, the Director of Cleanfleets.Net.
In my twelve years of appearing before the Board, it's the
first time I've actually seen Tom Cackette actually blush.
So well wishes to you, Tom. Thanks for working for many
of issues. I've been fortunate primarily on behalf fleet
associations over the last twelve years to work on
implementing the Diesel Risk Reduction Plan. We've had a
lot of issues that Tom and I have worked through, and Eric
and the rest of the staff. I'm sure Dr. Ayala will carry
on a fine tradition. Looking forward to working with him.

I have two brief items to share with you.
First -- both relate to the public outreach. So I'm pleased to report that under contract ARB cleanfleets.net has been out doing training on truck and bus rule primarily in rural counties throughout California. So to date, we've been fortunate to educate about 3,000 fleet owners in about 50 counties throughout California. And we're proceeding also in five western states as part of the Board's effort to make sure that fleets that are impacted by the truck and bus rule know that. I'm wanted to report some success there.

And we've been particularly successful in getting to small fleets, conducting some bilingual training, and also conducting training in the border zone. We had several bilingual sessions in the border zone, including we have one next week on December 11th. And actually we may ask Dr. Ayala to come down and help with his bilingual skills there. So we might find another opportunity for his many talents to come help us on the outreach.

So we've made a lot of progress on outreach. There is one item that is time sensitive I wanted to bring to your attention relating to the TRU transportation refrigeration unit. Staff recently released a guidance document on about November 15th that has some deadlines here at the end of the month. And we had several stakeholders that attended our training say we're more
than happy to do deal with this issue. And I won't bore you with all the minutia except to say this relates to electric standby.

What that means is folks that have invested in infrastructure to be able to plug in units when they're at a central facility are being asked to do more. And those folks that have communicated with us as part of our training have said they're happy to do more. The only challenge is over the next 30 days they're being asked to make some very big strides relative to electronics being installed on those vehicles. So they're willing to do it. It just seems the timing wasn't favorable relative to the Board amendments of 2011 being noticed and stakeholders being informed. That was one item we'd ask your staff to -- we've communicated with SSD, Stationary Source Division, on the issue. And we'd like a little bit of perhaps direction to do some revisions and some additional items that staff is amenable to. As an example, purchase orders by the end of the month would satisfy a requirement. And also there was staff was offering to do a four-month lead time similar to the truck rule where an operator had four months' lead time. Unfortunately, with the timing of the advisory coming out in the November 15th time frame, it doesn't allow that four months. So some direction or understanding with staff we'd like to work
with just to make sure the effected fleets who just got notice would be able to have some adequate time.

That's my singular request for today. But staying within the tradition of my three minutes, which are just about up.

I just wanted to say thank you so much to Mr. Cackette and Dr. Loveridge. You inspire me. I feel very young and old at the same time because I've been in front of the Board for 12 years. And when you started at U.C. Riverside, it was just about the time I was born. So thank you for your contributions over many, many decades.

CHAIRPERSON NICHOLS: Thank you. Thank you.

And one of the things about being a teacher is that your work product is out there in front of you oftentimes for a long time to come.

Staff have any comment or reaction on the presentation?

DEPUTY EXECUTIVE OFFICER COREY: This is Richard Corey.

I want to follow up with Mr. Edgar and staff in terms of the timetable issues that he brought, work through and have a clear understanding and see what some options are. We'll evaluate that.

CHAIRPERSON NICHOLS: This education program we're doing with the truckers on these rules is incredibly
important. So definitely don't want any glitches there.

Okay. Any further comments? I see no one else
has signed up to speak. Then with no objection, we will
be adjourned. Thank you.

(Whereupon the Air Resources Board adjourned
at 11:17 p.m.)
CERTIFICATE OF REPORTER

I, TIFFANY C. KRAFT, 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 hearing was reported in shorthand by me, Tiffany C. Kraft, 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 hearing nor in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 16th day of December, 2012.

______________________________
TIFFANY C. KRAFT, CSR, RPR
Certified Shorthand Reporter
License No. 12277