APPEARANCES

BOARD MEMBERS
Ms. Mary Nichols, Chairperson
Dr. John Balmes
Ms. Sandra Berg
Mr. Hector De La Torre
Mr. John Eisenhut
Mr. John Gioia
Ms. Judy Mitchell
Supervisor Phil Serna
Professor Daniel Sperling

STAFF
Mr. Richard Corey, Executive Director
Dr. Alberto Ayala, Deputy Executive Officer
Ms. Edie Chang, Deputy Executive Officer
Mr. Kurt Karperos, Deputy Executive Officer
Ms. Ellen Peter, Chief Counsel
Mr. Antonio Marin, Acting Ombudsman
Ms. Aimee Barnes, Deputy Secretary for Border and Intergovernmental Relations, CalEPA
Ms. Jennifer Kozumplik, Air Pollution Specialist, Carl Moyer Incentives Oversight Section, Mobile Source Control Division
Ms. Renee Littaua, Staff Air Pollution Specialist, Zero Emission Truck and Bus Section, Mobile Source Control Division
APPEARANCES CONTINUED

STAFF

Mr. Greg Mayeur, Manager, Program Operation Section, Industrial Sources Division

Ms. Elizabeth Melgoza, Air Pollution Specialist, Air Quality Planning and Science Division

Ms. Margaret Minnick, International Liaison, Chairman's Office

Mr. Todd Sax, Assistant Division Chief, MSCD

Ms. Annalisa Schilla, Climate Action and Research Planning Section, Research Division

Mr. Erik White, Division Chief, MSCD

ALSO PRESENT

Mr. Alan Abbs, Air Pollution Control Officer, Tehama County

Ms. Wafaa Aborashed, Bay Area Healthy 880 Communities, CCFC

Mr. Don Anair, Union of Concerned Scientists

Ms. Laura Baker, Coalition for Clean Air

Ms. Diane Bailey, NRDC

Mr. Louis Blumberg, Nature Conservancy

Mr. Steve Brink, California Forestry Association

Mr. Tony Brunello, CE2 Carbon Capitol

Ms. Sheri Buretta, Chugach Alaska Corp.

Mr. Paul Buttner, California Rice Commission
APPEARANCES CONTINUED

ALSO PRESENT

Mr. Tim Carmichael, CNGVC
Mr. Sean Carney, Finite Carbon
Ms. Cynthia Cory, CA Farm Bureau
Mr. Sean Edgar, Cleanfleets.net
Mr. Frank Gallo, Ditching Dirty Diesel/CCFC
Mr. Amrith Gunasekara, representing Secretary of Food and Ag
Mr. Thomas Helme, CCFC & VIP Modesto
Mr. Henry Hogo, South Coast AQMD
Mr. Mark Krausse, PG&E
Ms. Alex Leumer, The Nature Conservancy
Mr. Angelo Logan, East Yard Communities for Environmental Justice
Mr. Bill Magavern, Coalition for Clean Air
Mr. Jesse Marquez, Coalition for a Safe Environment
Mr. Humberto Lugo Martinez, Comite Comite Cívico Del Valle
Ms. Jerilyn Lopez Mendoza, SoCal Gas
Mr. Ed Murphy, Sierra Pacific Industries
Mr. Peter Okurowski, Association of American Railroads
Mr. Luis Olmedo, Comite Cívico Del Valle
Mr. Robert Parkhurst, EDF
Mr. Brad Poiriez, Air Pollution Control Officer, Imperial County
APPEARANCES CONTINUED

ALSO PRESENT

Ms. Christie Pollet-Young, SCS Global
Mr. Alex Rau, Climate Wedge, LLC
Mr. Gary Rynearson, Green Diamond Resource Company
Mr. Brian Shillinglaw, New Forests
Mr. Chris Shimoda, California Trucking Association
Mr. Adam Smith, Southern California Edison
Mr. Joshua Strauss, Blue Source
Mr. Taylor Thomas, East Yard Communities for Environmental Justice
Mr. Thomas J. Vessels, Vessels Coal Gas, Inc.
Ms. Joy Williams, Environmental Health Coalition
Mr. Roger Williams, Blue Source
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- Ms. Mendoza
- Mr. Helme
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- Mr. Marquez
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- Mr. De Carbonel

### Adjournment

### Reporter's Certificate

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J&K COURT REPORTING, LLC (916) 476-3171
CHAIRPERSON NICHOLS: Ladies and gentlemen, welcome to the meeting of the Air Resources Board as the December 18th, 2014, meeting of our Board. I'm going to call us to order. And this is our last meeting of 2014. So another year has rolled by. I don't know quite how that happened.

But before we begin, we will stand and say the Pledge of Allegiance to the flag.

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

CHAIRPERSON NICHOLS: Madam Clerk, would you please call the roll?

BOARD CLERK JENSEN: Dr. Balmes?
BOARD MEMBER BALMS: Here.
BOARD CLERK JENSEN: Ms. Berg?
BOARD MEMBER BERG: Here.
BOARD CLERK JENSEN: Mr. De La Torre?
BOARD MEMBER DE LA TORRE: Here.
BOARD CLERK JENSEN: Mr. Eisenhut?
BOARD MEMBER EISENHUT: Here.
BOARD CLERK JENSEN: Supervisor Gioia?
BOARD MEMBER GIOIA: Here.
BOARD CLERK JENSEN: Ms. Mitchell?
BOARD MEMBER MITCHELL: Here.
BOARD CLERK JENSEN: Mrs. Riordan?
Supervisor Roberts?
Supervisor Serna?
BOARD MEMBER SERNA: Here.
BOARD CLERK JENSEN: Dr. Sherriffs?
Professor Sperling?
Chairman Nichols?
CHAIRPERSON NICHOLS: Here.
Sorry. I jumped in early.
BOARD CLERK JENSEN: We have a quorum.
CHAIRPERSON NICHOLS: Thank you very much.

Before we begin this morning, I have a couple of announcements to make. First, a very happy announcement. As you know, at our last meeting, we said farewell to Lynn Terry, our long-time Deputy Executive Officer. I would now like to introduce you to her successor, Kurt Karperos. Many of you already know him because he's had 24 years of professional experience at ARB, including recently overseeing the development of State Implementation Plans, directing our emissions and air quality modeling activities, managing the Sustainable Communities Program, and implementing the consumer products regulation.

In fact, Kurt was part of the team that developed California's first SIP under the 1990 Clean Air Act amendments for the one-hour ozone standard. He also led
SIP development for the 8-hour ozone and PM2.5 standards that have been guiding ARB's rulemaking for the last number of years. We are very pleased to have Kurt taking on this new role. So welcome to the big table here.

(Applause)

CHAIRPERSON NICHOLS: Next, for anyone who is not an ARB regular, I need to explain that if you want to testify, you should fill out a request to speak card. They're available in the lobby outside the boardroom or from the Clerk. And we appreciate it very much if you would turn those in prior to the item being announced so that the Clerk has an opportunity to make a list and we can see how many witnesses to expect and plan our time accordingly.

Also, just a reminder that we impose a three-minute time limit, which could be shortened, but we don't normally shorten it unless things are -- we just hearing a lot of very repetitive testimony.

We appreciate it if you state your name when you come up to the podium and if you would put your testimony in your own words rather than reading what you've already submitted to us in writing. Your written testimony will also be submitted into the record.

And we're also required to point out for safety reasons the emergency exits at the rear of the room and
here on either side of the podium. In the event of a fire
alarm, we are required to evacuate the room immediately
and go down the stairs and out of the building until we
hear the all-clear signal. And then we can return and
resume the meeting.

The first item on our agenda this morning is the
consideration of our proposed Research Plan for fiscal
year 2015-16. The annual Research Plan supports ARB's air
quality planning efforts, helps us with our regulatory
decision making, advances efforts to meet the Global
Warming Solutions Act, as well as helping to underscore
the ideas that appear in SIPs and other important
collaborations with other research funding organizations.

So I'll turn to Mr. Corey to introduce this item.

DEPUTY EXECUTIVE OFFICER COREY: Thank you,
Chairman.

Staff's recommending funding 17 projects in this
year's Research Plan. The list of proposed projects was
developed from a public solicitation of research ideas,
plus extensive discussions with ARB program staff and
other State and federal agencies. The proposed research
projects support ARB's regulatory priorities related to
health, air pollution, and climate change.

If approved by the Board, staff will develop full
proposals for the projects described in the Research Plan
and bring them back to the Board for your consideration over the next several months.

With that, I'd like to introduce Annalisa Schilla of the Research Division who will describe this year's proposed research studies. Annalisa.

(Thereupon an overhead presentation was presented as follows.)

MS. SCHILLA: Thank you, Mr. Corey. Good morning, Chairman Nichols and members of the Board.

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MS. SCHILLA: Today, we are asking the Board to approve the proposed 2015-16 Research Plan. $6.5 million is requested to fund 17 research projects that will support the Board's decision-making for key policies and programs.

If you approve today, staff will work with researchers over the next few months to develop projects into full proposals. We will then take proposals to the Board's Research Screening Committee for review before returning to the Board to request approval and funding for each research project.

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MS. SCHILLA: ARB's Research Program will continue to play an important role in meeting the challenges of increasingly stringent federal air quality
standards and long-term climate goals. The projects included in this Research Plan will help maintain ARB's scientific foundation, identify new emission reduction strategies, and monitor our progress as strategies are implemented.

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MS. SCHILLA: One of the primary goals of the staff plan development process is to ensure the projects support the agency's most pressing program needs. Research Division staff met with their counterparts in the Regulatory and Planning Divisions to identify data and science gaps. Research concepts were also collected from an open, public solicitation. ARB's external Research Screening Committee reviewed the concepts in the proposed Research Plan before you today and will review the resulting proposals.

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MS. SCHILLA: ARB's Research Program was established by the Legislature 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 range of legislative mandates. The results from this portfolio have provided vital information to establish regulatory programs in these areas. This year's plan continues that evolution with a strong emphasis on
climate-related research.

MS. SCHILLA: This Research Plan proposes funding projects in three of ARB’s key program areas. This slide shows the break-down in funds by major topic area: Health, air quality, and climate change.

MS. SCHILLA: More specifically, this year’s projects will address key questions related to health and exposure, atmospheric science related to ozone and PM, truck and bus emissions and performance, passenger vehicle technologies and incentives, sustainable community development, and short-lived climate pollutant and nitrous oxide emissions and reduction strategies. The remainder of the presentation will provide brief overviews of the major research themes and ongoing research in each of these areas and will present the proposed projects for funding in fiscal year 2015-16.

MS. SCHILLA: ARB has a long history of funding fundamental research on the health effects of air pollution exposure. Results from ARB’s health research program as well as from studies funded by the U.S. EPA, the Health Effects Institute, and the National Institutes of Health have significantly contributed to the scientific
basis for both national and state ambient air quality
standards for PM2.5 and ozone, which are the only
pollutants that still exceed the standards.

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MS. SCHILLA: The health and exposure research portfolio investigates health effects from air pollution exposure, evaluates real-world exposures to pollutants, particularly among California's vulnerable populations, and identifies exposure mitigation strategies. The research outlined in this plan will continue this legacy and support the development of future air quality standards and regulations.

For the 2015-16 fiscal year, staff is proposing to follow up on two recent findings. The first finding, from an epidemiological research project, suggests an association between PM2.5 exposure and an increased risk of stroke among women who have never had one before, particularly among those who were postmenopausal. The second finding from another recent study is that infant primates exposed to wild fire smoke showed a reduction in response to microbial challenge, suggesting that the animals could be at greater risk of contracting infectious diseases.

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MS. SCHILLA: The follow up, the first proposed
project will provide insights into potential differences in vulnerability to air pollution exposure between women and men. Few studies have addressed this topic, yet there are medical observations that suggest there may be differences in risk between the genders digesters. This project will employ a toxicological approach to follow up on recent epidemiological evidence that PM exposure may pose a greater risk to women's cardiovascular health than men's. The project will focus on mechanisms of PM toxicity in female rodents.

The second project will examine whether changes in immune function induced by air pollution exposure can be passed onto offspring. This study will determine whether reduced immune response has persisted in the original group of primates that were exposed to wildfire smoke and whether female animals can pass the change in immune function on to their offspring. The study will also investigate whether the change in immune function has affected the animals' overall health. The results will provide unique insight into the effects of air pollution on infants and how early life air pollution exposure influences health later in life.

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MS. SCHILLA: This proposed Research Plan also continues to fund program-driven projects that support the
development of new policies and regulations and track implementation of existing programs to meet California's ambitious air quality and climate goals.

Projects in the air quality category will support California's state implementation plans to meet air quality goals established by the federal and California Clean Air Acts and will track progress and improve implementation of existing programs for trucks and buses.

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MS. SCHILLA: ARB research continues to improve the scientific foundation for California's efforts to meet air quality standards and reduce the health risk from air pollution. The primary focus is to improve air quality models used in developing State Implementation Plans, which provide the predictions of future air pollution levels that are fundamental to the development of emission reduction strategies.

This year, staff proposed funding two projects, following up on two recent findings. First, field studies indicate that background ozone concentrations are increasing. It is critical that ARB understand the baseline ozone in the atmosphere when planning for attainment of future ozone standards. Second, meteorological conditions and chemical processes that have led to recent PM2.5 exceedance events in the South Coast and San Joaquin
Valley need to be better understood and are increasingly important in the face of lower PM2.5 standards.

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MS. SCHILLA: The first proposed project seeks to improve understanding of background ozone concentrations. This research will investigate the degree to which out-of-state sources contribute to exceedances of the ozone standard in the San Joaquin Valley. The project will synthesize available data and determine whether a strategically placed measurement network would be able to cost-effectively address significant remaining data gaps.

The second project will support updates to the particulate matter modeling for the South Coast and San Joaquin Valley air basins. Meteorological and air quality data that captures high PM episodes will be analyzed to develop a basic conceptual model. These episodes will then be modeled using advanced meteorological and regional air quality models with the goal of incorporating better representation of these episodes in the air quality models used for SIPs.

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MS. SCHILLA: California has a long and successful history of adopting technology-advancing vehicle emission standards to protect public health, built on a strong research foundation. ARB funded research on
emissions from trucks and buses is fundamental to the
development of accurate emission inventories and
projections of future emissions and has informed the
development of strategies to meet the goal of the Diesel
Risk Reduction Plan adopted in 2000 to reduce diesel PM
emissions by 85 percent by 2020.

Much of ARB's recent research on heavy-duty
vehicles has focused on the durability of emission control
technologies, such as diesel particulate filters and
selective catalytic reduction, and has also focused on
tracking the results of regulatory efforts such as the
drayage and truck and bus rules.

For the 2015-16 fiscal year, staff propose
building on existing research and funding three projects
to follow up on recent findings. First, to follow up on
preliminary field study results that show on-road
emissions being reduced as ARB regulations come into
effect. And second, even as these reductions occur,
recent testing indicates that emissions from these engines
are greater when operated on freeways and roads than what
is measured during engine certification.

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MS. SCHILLA: The first proposed project will
expand measurements of real world emission rates from
heavy-duty vehicles to assess the performance of emission
control devices that reduce PM and NOx. ARB is currently funding on-going studies at three locations across the state. However, additional measurements are needed to provide a more complete picture of statewide emissions. The results from this study will help identify high emitters and assess overall emission benefits of after-treatment devices, and will provide insights into the causes and rates of after-treatment failure.

The second proposed project will investigate the discrepancy between real world NOx emissions from model year 2010 and newer heavy-duty diesel engines compared to the emissions measured from the same engines during certification. The research will investigate potential modifications to certification procedures and the potential for development of new testing methods and requirements that would increase the effectiveness of emissions testing programs for controlling real world NOx emissions from heavy-duty trucks.

The third proposed project will assess the cost effectiveness and economic impacts of a heavy-duty vehicle emissions verification program. Drawing on insights gleaned from California's Smog Check Program and similar programs in other states and countries, this project will review various methods for emissions verification and will design a prototype heavy-duty vehicle emissions
verification program that is practical, technologically feasible, and cost effective for both regulated and regulatory entities.

MS. SCHILLA: Now we'll turn to ARB's climate change research.

The Research Program includes investigations of emission 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 California's climate goals. The 2013 update to the AB 32 Scoping Plan outlined strategies to keep California on track to meet the goals of AB 32. This Research Plan will continue to address ARB's climate related research needs through studies that support the Advanced Clean Cars and Sustainable Communities Programs, improve understanding of short-lived climate pollutants and nitrous oxide, and perform economic assessment of potential emission reduction strategies for high global warming potential fluorinated gases.

MS. SCHILLA: In 2012, the Air Resources Board adopted the Advanced Clean Cars Program to reduce the emissions from passenger vehicles in accordance with California's long term air quality and climate goals. As
a result, ARB funded research on passenger vehicles has expanded beyond emissions measurements and now includes a portfolio of projects that address market forces, consumer acceptance, and driving and fueling behavior associated with new vehicle technologies. Results from these projects will inform the mid-term review of the Advanced Clean Cars Program, when the appropriateness of the ZEV targets and greenhouse gas and PM standards will be evaluated.

This year, staff proposed funding two projects. One will build on current research on ZEV adoption and use, which are still poorly characterized. The other will inform future changes to ARB's light duty incentive programs to address recent legislation.

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MS. SCHILLA: The first proposed project will characterize how drivers are using and charging or refueling their plug-in electric and fuel cell vehicles. This project expands upon existing research to include new vehicle technologies, such as fuel cells, and will provide insight into travel and charging behavior over the life of plug-in vehicles. We are looking to understand changes in charging behavior and response to battery deterioration and changes in the availability of charging infrastructure. Results from this research will improve
projections of electricity demand and emissions from the light duty fleet, and will inform the deployment of charging and fueling infrastructure.

The second proposed project will evaluate various options for modifying ARB's light-duty incentive programs. This project will investigate the relative efficacy of different forms and amounts of incentives for encouraging adoption of the cleanest vehicle technologies with an emphasis on how to most cost effectively and Equitably increase uptakes of these vehicles in disadvantaged communities. The results of this study will inform decisions about the future of incentive programs in support of widespread ZEV adoption across California and in disadvantaged communities, in particular.

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MS. SCHILLA: ARB has a variety of sustainable communities research projects underway to support California's efforts to reduce greenhouse gas emissions from land use transportation and buildings. These projects look to advance emissions reductions from either the built environment or from land use and transportation in support of SB 375. Results from these projects are designed to assist local governments, planners, and other practitioners in the development of sustainable communities strategies.
This year, staff propose building on existing research and funding three projects. These projects support quantification of the greenhouse gas benefits of sustainable communities strategies and will build on the recent finding that green buildings have greenhouse gas benefits beyond energy use.

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MS. SCHILLA: The first proposed project will provide a base line of current land use throughout the state and will inform the development of metrics for tracking the extent to which shifts in regional and local planning are resulting in actual changes in land use across the state through time.

The second proposed project will evaluate the travel demand and associated greenhouse gas emissions implications of placing affordable housing in transit-oriented development and will provide insight into the economic, health, and other impacts on residents in those developments.

The third proposed project will evaluate the technical feasibility of zero carbon buildings, which were identified in the first update to the Scoping Plan as a strategy that could help California achieve our post-2020 climate goals. Zero or near zero-carbon buildings generate almost no greenhouse gas emissions over the
course of a year from the energy, water, waste, and transportation impacts of the building. The results of this study will be used to assess the practicality and appropriate time frame for a zero or near zero carbon building State policy or program.

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MS. SCHILLA: ARB funds a variety of research projects to verify and improve the State's greenhouse gas emission inventory and to identify promising emission reduction strategies and policies. Although CO2 emissions constitute the largest share of California's inventory, short-lived climate pollutants and nitrous oxide are significant and have greater potential to warm the atmosphere per ton of emissions. As a result, new strategies to reduce emissions of short-lived climate pollutants and nitrous oxide offer tremendous potential for climate benefits.

This year, staff proposed funding five projects to improve emission inventories and evaluate potential strategies to reduce emissions, following up on two recent findings. First, field studies indicate that emissions of methane and nitrous oxide may be larger than estimated in California's inventory. And second, emissions of fluorinated gases continue to grow and as a result further reductions will be needed to meet California's long-term
climate goals.

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MS. SCHILLA: The first two proposed projects will provide insights into methane and nitrous oxide emissions from dairy operations in California. Currently, California's inventory relies on assumptions based on global or national default values due to a lack of California-specific information.

The first proposed project will evaluate the chemical and physical characteristics of California dairy manure and manure management practices and associated greenhouse gas emissions.

The second project will collect data on cattle feed rations in California to improve emissions estimates associated with enteric fermentation. The results from these projects will improve California's emission inventory and offer insights into potential mitigation strategies.

The third project will evaluate a variety of strategies to reduce emissions of fluorinated gases, which are primarily used in refrigeration and air conditioning systems. Emissions of these gases continue to grow, and this project will provide insights into the most effective policies for encouraging F gas alternatives that have lower global warming potential.
MS. SCHILLA: The last two proposed projects for this fiscal year will improve ARB's nitrous oxide emissions inventory. The first project will conduct field measurements at key sites to improve estimates of nitrous oxide emissions from sources that are currently believed to be missing or underestimated in the current inventory. Examples of likely sources include landfills, sewage systems, and urban landscapes, such as golf courses where fertilizer use is significant.

The last project will continue greenhouse gas monitoring in California at the Walnut Grove Tower for three additional years. This data collection effort will allow for more comprehensive modeling to evaluate the statewide methane and nitrous oxide inventories. The research will focus on emission sources in the San Joaquin Valley and will improve estimates of emissions, particularly from dairies, oil and gas operations, and landfills.

MS. SCHILLA: In keeping with the mission of ARB's research program, the projects proposed in this plan will continue to strengthen the scientific foundation of ARB's health, air pollution, and greenhouse gas control programs. It will help identify future strategies to
reduce emissions of air pollutants and greenhouse gases, and they will track the effectiveness of ARB's programs.

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MS. SCHILLA: This year's Research Plan reflects ongoing coordination with federal and State agencies and leverages multi-million dollar funding commitments over the last five years from NASA, the National Institute of Science and Technology, the California Energy Commission, the California Department of Food and Agriculture, and the U.S. EPA, the US Department of Transportation, and others. Continued coordination with the State and federal agencies enables ARB to participate in projects and studies outside the reach of ARB's research budget alone.

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MS. SCHILLA: ARB staff have been placing a growing emphasis on sharing the results of our research, including disseminating new results to other researchers and to the public through conferences, stakeholder meetings, webinars, press releases, final reports, and updates at Board meetings.

ARB's recently improved research website provides overviews of all of ARB's research-related activities and products. An initiative to increase media attention in conjunction with an added focus on research seminars and workshops produced a 40 percent increase in web hits in
fiscal year 2013-14 compared to the previous year.

ARB staff are also improving and developing other tools to share research results with a wider audience, including research syntheses that highlight key research themes and a forthcoming newsletter which will highlight recent results and which staff expect will be released biannually in the future.

Staff are committed to continuing to raise the profiles of ARB's research program and to sharing the results with other government agencies, partners, and funding organizations as well as with interested members of the public.

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MS. SCHILLA: If the 2015-16 Research Plan is approved today, staff will work with our research partners to bring full proposals to the research screening Committee. Then we will return to the Board to request approval and funding for each project. We recommend that you approve the 2015-16 annual Research Plan.

CHAIRPERSON NICHOLS: Thank you, Annalisa.

I'm informed no one has signed up to testify on this item. There may be at least one Board member comment on it. I'll start there. Dr. Balmes.

BOARD MEMBER BALMES: Thank you, Annalia, for presenting what I think is a thoughtful staff approach to
research for the coming year. But I guess I would have
one cautionary note. While I think the research proposed
on climate change and air quality are important and I
support what's been recommended, the dollar amount towards
health and exposure has been going down over the years.
And I don't think that necessarily reflects the reality of
what we need to know about, especially as we get cleaner
conditions in the sense that we have lower levels of
criteria pollutants. Our policies have been successful.
And in light of the fact that the EPA is likely going to
be able to fund less health effects research related to
air pollutants because of fiscal pressures which are only
going to get worse with the recent election. I think that
we need to pay attention to health issues.

Again, I'm totally supportive of what's been
proposed today. But I don't want to see the health and
exposure piece of the pie shrink to nothing.

CHAIRPERSON NICHOLS: Well, I think it's a good
point that we've added more and the overall budget hasn't
gone up. So by definition, this is getting to be a
smaller slice.

I was going to comment just that the research
budget does not grow in proportion to the overall need for
research. And when I look at the amounts on some of these
proposals just from experience over the years, we're
trying to get a lot for a very small amount of money. I hope -- I assume and from what I've seen I think we are using our money very strategically and carefully. But even so, it is a small budget, and it would be great if we could find a way to augment it.

BOARD MEMBER BALMES: If I could add to that. And given I think -- is it still a ten percent overhead rate with regard to U.C.? But that's to the point where in the past when I had CARB funding, when you were having to justify space for laboratories, that didn't even count as funding research to my Dean. Hopefully we can keep that ten percent indirect rate.

CHAIRPERSON NICHOLS: Yes. Yes. Any other comments? If not, I would like a motion to approve the Research Plan.

BOARD MEMBER BALMES: I so move.

BOARD MEMBER SERNA: Second.

CHAIRPERSON NICHOLS: All in favor, please say Aye.

(Unanimous aye vote.)


We will move to the Imperial County 2013 SIP for implementing the 24-hour PM2.5 standard that went into effect in 2006.
This plan is based on the Clean Air Act provision that considers the impact of international cross-border transport pollutants, in this case, of course, the border of California and Mexico.

We're also going to be talking later about some of our other international work on climate and air quality. And certainly one of the most important relationships that we have in that regard is with Mexico.

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

DEPUTY EXECUTIVE OFFICER COREY: Yes, thanks, Chairman.

In 2009, U.S. EPA designated a portion of Imperial County as non-attainment with the 35 micrograms per cubic meter 24-hour PM2.5 standard. This designation was based on PM2.5 data collected at the Calexico monitor located less than a mile from the U.S. border with Mexico.

Due to its proximity to the border, the city of Calexico is impacted by emissions from the much larger city of Mexicali, Mexico. The resulting pollution is transported across the border into Calexico, especially during the winter months. The Clean Air Act includes a provision recognizing that cross-border impacts of internationally transported air pollution may cause violations of the standard.

In these cases, the Act does not require states
to develop an attainment strategy addressing pollution that originates from sources beyond the United States borders. The 2013 PM2.5 plan for Imperial County includes a demonstration that Imperial County would have attained PM2.5 standard absent pollution from Mexico. ARB, the Imperial district, and U.S. EPA continue to work with the Mexican government on understanding air pollution impacts and measures to reduce pollution in the region. We'll be asking the Board today to approve the plan as a SIP revision and submit it to U.S. EPA.

I'll now ask Elizabeth Melgoza to give the staff presentation. Elizabeth.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST MELGOZA: Thank you, Mr. Corey.

Good morning, Chairman Nichols and members of the today.

Today, I'll report on air quality in Imperial County and describe the Imperial County 2013 SIP developed to address the federal 24-hour PM2.5 standard.

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AIR POLLUTION SPECIALIST MELGOZA: I will begin today's presentation by providing background on the nature of PM2.5 air quality in Imperial County and the impact of
emissions from Mexico on PM2.5 levels in the border region.

I will also discuss the Clean Air Act provisions addressing cross-border pollutant transport and technical demonstration to assess the impact on those emissions on attainment of the PM2.5 standard in Imperial County. Finally, I will highlight SIP planning efforts and activities underway to improve border air quality.

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AIR POLLUTION SPECIALIST MELGOZA: Imperial County is located in the southeast portion of the state and shares a common border with Mexico. While much of the county is open desert land with few emission sources, the central portion of the county is more urbanized and is designated as non-attainment for the federal 24-hour PM2.5 standard of 35 micrograms per cubic meter.

The non-attainment area identified in this map with a dashed line includes the cities of Brawley, El Centro, and Calexico, which together represent 60 percent of the county's population. The non-attainment area's location within an inland valley provides conditions conducive to pollutant build up. This, together with the transport of pollutants from Mexicali, Mexico presents significant air quality challenges for the area. Despite these challenges, PM2.5 concentrations in the
AIR POLLUTION SPECIALIST MELGOZA: The cities of Brawley, El Centro, and Calexico have similar populations, ranging from 25,000 to 43,000. Emission sources in all three cities are also similar, with key categories including unpaved road dust, fugitive wind blown dust, agricultural burning, and tilling emissions from farming operations.

As a result, PM2.5 concentrations measured in Brawley and El Centro are similar, with levels well below the federal 24-hour PM2.5 standard.

Concentrations in these two cities continue to decline due to ongoing implementation of State and local control programs. In contrast, while concentrations at Calexico have also decreased, PM2.5 levels are more than twice those of Brawley and El Centro and remain above the federal standard.

AIR POLLUTION SPECIALIST MELGOZA: The Calexico monitor is located less than a mile from the border with Mexicali, Mexico. As such, this monitor measures PM2.5 concentrations that reflect the combined impacts of emissions from both Calexico and Mexicali. This aerial photograph looking south from Calexico into Mexicali
illustrates the differences between these two border cities. The city of Mexicali with a population of nearly 700,000 has approximately 18 times the population of neighboring Calexico. Mexicali emissions are also several orders of magnitude higher than emissions in the Imperial County non-attainment area.

While Calexico is impacted by emissions from Mexicali on a daily basis, on a few days each year, this impact is large enough to cause exceedances of the 24-hour PM2.5 standard. This impact is most prevalent during the winter when cold stagnant weather conditions allow the build-up of PM2.5 pollution along the border. These exceedance days also often coincide with wintertime holiday celebrations in Mexico where the use of bonfires and fireworks is commonplace.

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AIR POLLUTION SPECIALIST MELGOZA: Congress recognized the impact international areas could have on the air quality in the U.S. Thus, the Clean Air Act allows states to take into consideration the contribution of cross-border transport or pollutants. Under this provision, the Act does not require states to develop an attainment strategy addressing pollutants that originate outside the U.S.

SIPs developed under this provision must include
a technical demonstration to identify the impacts of international emissions. However, these plans must also comply with all other act requirements to demonstrate that appropriate local and state actions have been taken to reduce emissions and provide ongoing public health protection.

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AIR POLLUTION SPECIALIST MELGOZA: The technical demonstration for Calexico followed U.S. EPA guidance for assessing the impact of emissions from outside the United States. The guidance identifies five types of analyses that may be used to evaluate the impact of international emissions on the non-attainment area. Staff applied each of these suggested analyses in the technical demonstration.

As part of this comprehensive assessment for each of the days exceeding the 24-hour PM2.5 standard, staff reviewed available emissions, weather, and air quality data to assess the sources and origin of the pollution impacting Calexico.

These analyses included evaluation of wind patterns to determine the association between winds from the south and elevated PM2.5 levels in Calexico. A comparison of the magnitude and types of emissions on both sides of the border was also conducted.
Finally, the chemical makeup of PM2.5 on exceedance days was analyzed along with emissions information to identify the sources of PM2.5 at Calexico.

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AIR POLLUTION SPECIALIST MELGOZA: Based on this assessment, a consistent pattern on all exceedance days emerged. All days had very low wind speeds with predominant winds from the south.

As a result, the highest PM2.5 concentrations occurred near the border, with decreasing levels at locations further north. This figure on the right shows the pattern for one of the exceedance days, December 23rd, 2012. At the southern-most site, Mexico, 24-hour PM2.5 levels reached 187 micrograms per cubic meter with the Calexico monitor recording a concentrations of 64.7 micrograms per cubic meter and levels dropping to well below the standard at Brawley.

Staff also examined the chemical make up of PM2.5 samples on these days. Elements such as chromium and zinc normally measured at very low levels throughout the state were five to eight times higher at Calexico than at El Centro and Brawley. These elements are indicators of the burning and fireworks that occur as part of holiday celebrations in Mexicali. Taken together, these analyses demonstrate the cross-border impact of emissions from
Mexicali on PM2.5 levels in Calexico. Absent these impacts, Imperial County would have been in attainment of the 24-hour PM2.5 standard.

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AIR POLLUTION SPECIALIST MELGOZA: To ensure air quality improves throughout the region, the SIP must still address remaining Clean Air Act requirements for a moderate non-attainment area. The SIP demonstrates reasonably available emission control measures are applied to sources of PM2.5 in Imperial County, including regulations addressing fugitive dust and agricultural burning. Quantitative emission milestones are also included to show that the non-attainment area continues to make progress in reducing emissions.

In addition, the SIP includes a commitment for further study measures to examine the potential for additional ammonia emission reductions from several sources. These include confined animal facilities, composting facilities, and agricultural fertilizers. Through these requirements, the SIP demonstrates that local emissions sources have appropriate controls in place, and emissions are at a level sufficient to provide for attainment of the 24-hour PM2.5 standard.

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AIR POLLUTION SPECIALIST MELGOZA: In ongoing
efforts to improve the health of residents in the border region, the district, ARB, and the EPA are working closely with the government of Mexico to help identify and implement programs that will improve air quality. This slide highlights some of the key activities currently underway in the Imperial Mexicali border region. These activities focus on a number of program areas, including international cooperation, education, and outreach, air quality monitoring, and enhanced inspections and enforcement.

Most recently, in July of this year, Governor Brown signed an MOU with Mexico's Ministry of the Environment identifying specific areas of joint cooperation related to emissions inventory development, air quality monitoring, and planning.

Through a collaborative effort via the border 2020 program, EPA, the Border Environmental Cooperation Commission, the district, and the Imperial Valley Mexicali Air Quality Task Force have been funding a no-burn radio and television campaign in the winter, when burning and pollution is expected to be high. This campaign helps educate the Mexicali community concerning the health impacts from open burning.

To better understand the impact of emissions on Mexicali air quality, ARB and officials from Baja
California recently began developing a plan to conduct PM2.5 monitoring at several sites in Mexicali. This binational multi-year monitoring effort is expected to begin in 2015 and will produce high quality information on PM2.5 air quality in Mexicali.

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AIR POLLUTION SPECIALIST MELGOZA: Finally, the ARB's heavy-duty vehicle inspection program is focused on improving border air quality by reducing the amount of diesel emissions from heavy-duty vehicles. Heavy-duty vehicles are routinely inspected at border crossings in Calexico to ensure that the trucks and buses entering the state meet California's strict vehicle emissions standards. Work is also being conducted to provide an improved understanding of the impacts of vehicle idling at the border-crossing stations.

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AIR POLLUTION SPECIALIST MELGOZA: In closing, staff determined that the Imperial County 2013 PM2.5 plan meets all applicable moderate area requirements of the Clean Air Act. Therefore, staff recommends that the Board approve the Imperial County 2013 PM2.5 plan as a revision to the California SIP for transmittal to EPA. ARB will continue to work with our partners to improve air quality in this region as well as with the district on development
of the upcoming SIP for the revised annual PM2.5 standard
due in 2016.

That concludes my presentation. We will be happy
to answer any questions.

CHAIRPERSON NICHOLS: We have two witnesses who
have signed up. Why don't we hear from them first,
starting with the Imperial County Air Pollution Control
Officer, Brad. Welcome.

MR. POIRIEZ: Good morning. Thank you. Pleasure
to be here.

Brad Poiriez, Air Pollution Control Officer for
Imperial County.

I'll be brief in my comments. The majority of
them are going to be reflected on the cooperation and
support that we received from your staff so far. But I
did want to on behalf of my Board of Directors mention
that we do support your staff's recommendation to you for
approval of this and urge you to approve it.

Imperial County is unique, as some of you may
know. We're a rural district right on the border of
Mexicali Mexico and a dry desert area. So we're faced
with many unique challenges, such as cross-border
transport as one is a big component of this and the
attainment demonstration, as well as such issues that are
going to come before you in the coming years such as the
Salton Sea. We do have a lot of challenges. We have limited funding, minimal amount of staff. That's why we do rely on your expert staff to assist us in these planning efforts. It's no easy task. As a matter of fact, this plan has taken about two years to compile and present, not only before my Board, but also before yours.

So I do want to thank Mr. Corey. He was appointed about the same time as I came on as president of CAPCOA. And I think he's ushered in an era of great cooperation amongst the air districts with CARB and that's reflected down to his staff level. We have a great working relationship with all of them.

So I'd like to -- if you don't mind, I'd like to name them by name, because they need some recognition for this. Karen Magliano, appreciate all of her work over the years. We've worked together for too many years to probably count. Webster Tasat, he actually made it down and presented on behalf of CARB at our public workshops. We greatly appreciated that. Elizabeth Melgoza, she's been our liaison for many years also. She recognizes the challenges we face and really grasp it and takes it full head on and really helps us out a lot. Also, I'd like to thank Gabe Ruiz, who's not in the audience. Carey Anderson, Dr. Eugine Kim, Casia Turkowitz, Earl Withicomb, he's here in the audience, too. He's been very familiar
with the monitoring and all the associated efforts we do at the border, as well as the Salton Sea. And also Silvia Vanderspect who came and presented on behalf of CARB before our Board at our hearing. She's helped us greatly also.

And also my staff, my assistant Reyes Ramero, he's in the audience today, as well as Monica Susia and Baylin Lopez. So that's two people in my office that actually are in the planning department to try to put together a PM2.5 SIP of this magnitude. So I want to thank them publicly as well as.

CHAIRPERSON NICHOLS: We'll extend your time for another minute.

MR. POIRIEZ: I guess I can sum up. Basically, again, appreciate all the cooperative effort. This is a very highly technical attainment demonstration put before you today. A lot of hard work went into it. And my Board thanks you and your staff, and we urge you to approve the SIP. Thank you. I'll be available for questions at the end.

CHAIRPERSON NICHOLS: Very good. If we have any, we'll call on you.

All right. We'll hear from Luis Olmedo from the Comite Civico Del Valle.

MR. OLMEDO: Good morning, Board Chair and
members of the Board.

My name is Luis Olmedo. I'm the Executive Director of the nonprofit organization Comite Civico Del Valle located in Brawley, Imperial County. And Comite actively works on many public health and environmental issues in the Imperial and Riverside Counties. And we hosted our annual environmental health leadership summits. Comite greatly appreciates CARB's, ARB's, and EPA's focus on Imperial County.

It has been a long battle to improve air quality in Imperial County. Imperial County's PM fugitive dust rules have been litigated back and forth to the US 9th District of Appeals since 2000. And Comite has been involved in this litigation since 2008 working closely with the U.S. EPA as well.

Too often, our county has fought air quality rules. This hearing today is about the 2013 PM2.5 24-hour standard 35 micrograms two cubic meters. And Calexico is in violation of the standards and again the county's conclusion is that Mexico is solely to blame. Monitoring shows between two to eleven days of PM2.5 violations in Calexico depending on the monitoring interpretation as set forth in our supplemental expert comment dated December 3rd on your record.

Also, EPA has raised several concerns about
Imperial's air monitoring protocols and set forth in Exhibit B, ALSO in your record.

This is a public health concern. The California Department of Public Health has found that Imperial County has the highest rate of childhood asthma hospitalization in the state, registering nearly three times the state average and also in 2014 the Robert Wood Johnson Foundation California's health ranking Imperial County 55 out of 57 counties -- 55th out of 57 counties. Overall health factors including environmental quality. We appreciate CARB being involved to keep a very close eye on our local SIP rules.

With regard to the SIP, we have several concerns as set forth in our November 25th letter that you have on the record. One is the need for a reported audited 2.5 monitor in the Salton Sea. We'd like to see a monitor located there. That was one of our recommendations from our consultant.

But also serious concerns about the Imperial County's conclusions and its rules of 701 and 800 through 806 to control fugitive dust from agricultural burning, open areas, unpaved roads, and agricultural sources that constitute reasonable available control measures, RACM, and reasonable available control technologies, RACT, under the Clean Air Act. Even if Mexico's emissions are
responsible, our air district's fugitive dust rules must meet RACM and RACT.

Could I ask for a couple more minutes?

CHAIRPERSON NICHOLS: We're trying to enforce the rules. And I know you're reading from your testimony. If you could just summarize it in a minute or so, we'll let you finish.

MR. OLMEDO: As set forth in our letter, we feel these rules and enforcement thereof can be improved.

I also want to note that several commitments of the Air Pollution Control officials have made in our local approval of these rules and some of these include more public outreach, identify funding to allow programs, designate a school flag program, consideration of a monitor that they also committed to looking into that, installing a flag pole in their facility, and develop a notification program to notify the broader community whenever there is hazardous air quality.

And in conclusion, I'd like to ask that the U.S. EPA made a commitment to work with our local air district. We'd like ARB to also make a similar commitment and to also help us find the resources to implement a more robust program.

CHAIRPERSON NICHOLS: If I could just ask you, on the sign-up sheet it indicates that you're opposed. But
it doesn't sound like you're really asking us not to approve the plan. You just want us to add some additional or make some commitments that would make it more from your perspective work better.

MR. OLMEDO: Our idea would be that Imperial County improve its rules, as we indicated the rules very extensively explained it in our letter.

CHAIRPERSON NICHOLS: Right.

MR. OLMEDO: But if that's not an outcome of this, we'd like to see a very strong commitment from ARB to work with our county to improve these rules.

CHAIRPERSON NICHOLS: That's a clarification. Appreciate it very much.

MR. OLMEDO: I'd like to thank you for allowing us to make our comments and for keeping a close eye and an audited watchful eye on Imperial County. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Any additional questions or comments from the Board? Yes.

BOARD MEMBER MITCHELL: Thank you, Madam Chair. I just want to comment that I serve on the regional counsel of SCAG. And I know from comments received at that regional counsel from our representatives from Imperial County that there is concern about this cross-border traffic. And in particular, the truck idling
at that border. And I want to thank our ARB staff for their attention to that problem and encourage them to keep working with Imperial County and working on those problems that result from our cross-border traffic. So thank you.

CHAIRPERSON NICHOLS: Any other questions? Comments?

Yes, Ms. Berg.

BOARD MEMBER BERG: I just want to also thank our witness for coming out. I know that it was a long trip for you to come up and I appreciate that. And nice to see you, Brad.

I think education and public outreach, which I know Imperial County also our local district has been working quite diligently and getting out education. Want to really encourage the continued education as well as certainly believe from ARB that there is a commitment to the Imperial County and whatever we can do to continue to help look at additional regulations that make sense, but also to educate people as to what has been done and what is being done and sharing data. So that we're all making decisions from a database that is kind of common knowledge and common practice. So thank you very much for your effort. Thank you for coming out and giving us a local perspective as well.

CHAIRPERSON NICHOLS: I'm actually pleased. I
was very pleased to hear Brad Poiriez's comments about ARB staff. Of course, it's always good to have our staff praised. But I was also struck by the fact that we actually have been investing more resources than I was aware of in helping to bring this plan to fruition. And I appreciate that fact. I think this place deserves it, given the complexities and difficulties of the air situation and the fact that it is one of the places in our state that has some of the greatest concentrations of poverty and unemployment, et cetera. We really need to be making an extra effort there.

I would like to say just personally that I think we should accept the request to continue to pay attention here and not just assume that once we passed the plan, that's the end of it, that it will all be self-implementing. And in particular, I also want to recognize the involvement of the local community and the Comite and helping to make sure that we don't forget about Imperial.

So with that, I think we can probably just go ahead and approve the plan.

Would you like to make a motion?

BOARD MEMBER BERG: I move.

BOARD MEMBER DE LA TORRE: Second.

CHAIRPERSON NICHOLS: All in favor, please say
(Unanimous aye vote.)

CHAIRPERSON NICHOLS: Any opposed?

Any abstentions? Very good. Thank you all.

Our next item is an update to the Board on international coordination. As a leader in addressing air quality and climate change issues, the Air Resources Board has a long history of working with foreign countries on these challenges. Now with the air quality crisis in China getting daily attention in the press, as well as increased worldwide attention on reducing greenhouse gas emissions, our interactions with foreign countries have become both more frequent and in many ways more substantive.

Working with other jurisdictions on climate change and air quality has been a real priority area for Governor Brown. He's recently signed Memoranda of Understanding, or MOUs, with China and Mexico and others, which then in turn need to be implemented and lead to further collaborative work on our part as well.

So it seemed like a good time to give the Board an update on what's going on within ARB with respect to international programs. And starting with the fact that we now have one person whose job it is just to coordinate all of our various international activities.
On a personal note, I recently attended a meeting in India. I've been going to various international meetings on climate, and I turned down ten for every one that I actually decide I need to go to. But this one was particularly interesting because it was what's called a track two climate dialogue, meaning an international diplomatic speak that it was a convening of policy leaders from India and the US who are not officials in the government, although there have been a few people who have come and gone from government positions during the time that this dialogue has gone on.

But one of the most interesting things about it was that I was invited to join, after this had been going on for more than a year, because there was a recognition in both by the US participants and the Indian that they really needed to include subnationals, as we're called, such as California. And that while national policy and commitment is critical, that there is a lot of opportunity at the subnational level to actually device and carry out programs that are going to have a big impact on the air and on the climate.

So this is one area in which California's presence I think is just going to be more in demand than it has been in the past.

So with that, I will turn it over to Mr. Corey.
I should also note that Edie Chang just got back from Lima where she represented ARB ably at the Conference of Parties. She swears her cold was there before she got there, but I think she paid the price for the trip.

Mr. Corey.

DEPUTY EXECUTIVE OFFICER COREY: Thank you, Chairman.

As you mentioned, ARB has a long history of working with foreign jurisdictions to exchange information, provide technical assistance, and learn from their programs as well. For many years, we've welcomed foreign delegations who have visited ARB to discuss air quality science and research, to learn about our vehicle emission control programs, as well as our climate change policies.

In collaborations with China and Mexico, as noted, recently become more formalized, ARB's work on the implementation of the MOUs has increased interaction between ARB and our counterparts in China and Mexico is leading to more specific projects than simply sharing information.

I've had the personal opportunity to visit and work with representatives from China as well as representatives from the non-governmental associations that are on the ground there. And it's clear that
California's leadership and demonstrated success is having a very real impact on actions in local jurisdictions to address both air quality issues as well as climate change. Margaret Minnick, International Liaison to the Chairman's office, will give the staff presentation. Joining Margaret at the staff table is Aimee Barnes, who is Cal/EPA's Deputy Secretary for Border and Inter-governmental Relations, as well as ARB staff engaged in the international work.

And with that, Margaret will give the presentation.

(Thereupon an overhead presentation was presented as follows.)

INTERNATIONAL LIAISON MINNICK: Good morning, Chairman Nichols and members of the Board.

As Mr. Corey noted, ARB has a long history of providing technical consultation and support to other jurisdictions that are developing air quality programs. And there has been a strong interest in California's climate programs since its inception in 2006.

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INTERNATIONAL LIAISON MINNICK: Now Governor Brown is positioning California as an example of the successful climate change program that others can emulate and he is showing that working from the bottom up by
making subnational agreements can be a successful way to achieve greenhouse gas reductions.

California's example demonstrates that action on climate change is consistent with a vibrant growing economy and improves the lives and health of our citizens. This can serve as a powerful impetus for states and countries around the world to take action on climate change.

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INTERNATIONAL LIAISON MINNICK: The Brown administration has signed Memoranda of Understanding, or MOUs, with subnational and national jurisdictions around the world that are interested in partnering with us to address climate change and air pollution.

As a result, ARB is building substantive and concrete partnerships with jurisdictions that are developing air quality and greenhouse gas reduction programs. This presentation will provide an update on these activities.

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INTERNATIONAL LIAISON MINNICK: Many foreign jurisdictions seek out California's expertise because of our history of success in addressing air pollution and climate change, but California also benefits from these interactions.
We are leveraging AB 32 to grow climate action, but we are also learning from our partners as they try new and innovative strategies to address our common challenges. As they do so, we can learn from them and apply new best practices that may emerge ourselves. And as we heard in the previous presentation by supporting the development of air quality programs in Mexico, we can improve air quality and public health in the border area and Imperial Valley through the reduction of emissions transported from Mexico.

Additionally, California's international climate and environment MOUs are often signed in conjunction with MOUs to promote trade to expand markets for California's businesses. Expanding global action to fight air pollution and climate change also expands markets for clean technology, which may bolster business for those companies in California developing clean energy products. And it helps to bring down the cost of these products globally and in California.

The Brown Administration opened the California-China Trade and Investment Office in Shanghai in 2013 and has launched an initiative to position California as the go-to state for seeking solutions to China's environmental challenges.

Finally, we all know the imperative to pricing
carbon and expanding the reach of carbon price signals throughout the world is probably the most important thing we can do to fight climate change.

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INTERNATIONAL LIAISON MINNICK: Agreements among national and subnational governments to collaborate on climate issues such as those that California has entered into reflect cooperation and progress in an area where it has been very difficult to find consensus at the national level. They also serve as a complement to and an example for agreements between nations and for the United Nations climate negotiations which are working towards a new emission reduction agreement in Paris in 2015.

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INTERNATIONAL LIAISON MINNICK: In the effort to support California's international environmental MOUs, ARB works in close collaboration with Cal/EPA, the Governor's office, and other state agencies.

For example, California's delegation, including Secretary Rodriguez, Deputy Secretary Aimee Barnes, and ARB's Edie Chang just returned from UNF CCC 20th Conference of the Parties in Lima, Peru, where they spoke at thematic events and engaged in bilateral conversations to share California's experience of success in reducing greenhouse gas emissions using a comprehensive suite of
INTERNATIONAL LIAISON MINNICK: Next, I will present further details on our air quality and climate change collaborations. For 45 years, the scientists and engineers at the Air Resources Board have been considered worldwide leaders in air pollution control. ARB's pioneering programs to reduce emissions of toxics and criteria pollutants have set the standard and have informed similar programs in other jurisdictions. As a result, ARB has a long history of engaging in scientific, technical, and policy discussions with other states and counties.

For decades, ARB has hosted foreign delegations in Sacramento and El Monte, participated in international conferences, and collaborated with bordering areas in Baja, California on shared air quality challenges. Over the past several years, as a result of the successful implementation of AB 32, governments around the world have come to regard ARB as climate experts.

INTERNATIONAL LIAISON MINNICK: Often, the initial reason that a foreign jurisdiction seeks to collaborate with us is because poor air quality has developed as their economy has grown due to their citizens
using more power, purchasing more goods that are moved by
large trucks, and buying more vehicles.

One of our partners, China, has been in the news
quite a bit during the past few years due to episodes of
extremely poor air quality in some of their largest
cities, such as Beijing, pictured here.

In 2013, California signed MOUs to cooperate on
air quality with China's Ministry of Environmental
Protection and the Beijing Environmental Protection
Bureau, as well as an MOU with the Chinese National
Development and Reform Commission, or NDRC, which oversees
China's efforts to address climate change and much of the
government's economic strategy. ARB supports these MOUs
through a continuing series of exchanges of in-depth
policy and technical information.

On the air pollution side, we are helping the
Chinese agencies tackle their top challenges, which
include a need to improve monitoring and information
gathering regarding the causes of air pollution and
insufficient resources and capacity at environmental
agencies.

ARB, along with Cal/EPA and the local air
districts, has been actively engaging with the Beijing
Environmental Production Bureau and the Ministry of
Environmental Protection on air pollution mitigation with
regular calls between experts and periodic visits taking place.

On vehicle emissions, Beijing is leading the way in China by adopting Beijing six, the most stringent vehicle emission standards in the country which are based in part on California's LEV III standards. ARB has an ongoing technical dialogue with Beijing EPB, including hosting engineers for several months last winter for an in-depth exchange on our vehicle emissions rulemaking process.

Through the relationship with Beijing EPB, and the China-US Zero Emission Vehicle Policy Lab that's been established in partnership with U.C. Davis and the China Automotive Technology and Research Center, ARB is influencing the future of clean cars in China by setting the stage for the cleanest technology deployment in much the same way we did here in California.

ARB is engaged in ongoing in-depth discussions with officials from China's NDRC regarding California's Cap and Trade Program and the seven Chinese provincial pilot emission trading systems with the goal of ensuring that reliable greenhouse gas reporting and verification protocols are incorporated into their programs.

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INTERNATIONAL LIAISON MINNICK: In July 2014, the
Governor led a trade and investment mission to Mexico that also included a significant focus on environmental cooperation. While in Mexico City, the Governor signed MOUs with Mexican National Government Ministries for collaboration on climate change, the environment, and clean energy.

As a result, ARB's ongoing work with several Mexican states is now moving into a collaboration at the national level. ARB is now participating in workshops with our Mexican counterparts on the topics of climate change, forest management, air quality, and clean vehicles.

The Clean Vehicles Work Group is focused on updating smog-forming and greenhouse gas emissions standards for Mexico's light- and heavy-duty vehicle programs, as well as developing improved inspection and maintenance programs, or Smog Check as the California program is called, for Northern Mexico and the state of Mexico.

The climate change work group is building on our existing relationship with Mexico, which has also grown in the past year. As the Mexican government implements their national climate change law, they have reached out to California to discuss the design of our climate programs, including cap and trade, and strategies to reduce
agricultural greenhouse gas emissions.

We have also begun a collaboration with Mexico on short-lived climate pollutants, which we kicked off at a side event at the UN Climate Negotiations in Lima, Perua earlier this month. The MOU also called for greater cooperation on ongoing air quality monitoring in Baja, California, which includes staff training and analytical laboratory services.

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INTERNATIONAL LIAISON MINNICK: India is another rapidly developing country with serious air pollution problems where California's expertise and success stories can help mitigate air pollution while promoting economic progress.

ARB is collaborating with U.C. San Diego, the Energy and Resources Institute of India, and the World Bank on the India-California Air Pollution Mitigation Program, or ICAMP. ICAMP is an initiative for mitigating air pollution from the transportation sector, including black carbon. The collaboration produced a report which makes twelve specific recommendations for immediate action, including a substantial improvement in India's air quality monitoring network. ICAMP is planning to move forward on all twelve action items, but the initial focus is on improving the air monitoring system by advising the
national government and several Indian states.

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INTERNATIONAL LIAISON MINNICK: One of our longstanding partners on climate change is Quebec. As you know, California and Quebec officially linked their Cap and Trade Programs beginning on January 1st, 2014, and the first joint auction of emissions allowances was held on November 25th. California and Quebec's linked Cap and Trade Programs provide a working model for other states and provinces that are seeking cost-effective approaches for enhancing economic growth and innovation, while reducing greenhouse gas emissions.

Quebec also has complementary climate change programs that are similar to California's, such as rebates and other incentives for transitioning to zero emission vehicles. Just last week in Lima, California and Quebec signed a Letter of Intent to cooperate in the coming two years to accelerate the deployment of electric drive vehicles.

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INTERNATIONAL LIAISON MINNICK: ARB is also engaged in efforts to preserve forests around the world as Carbon sinks. California helped create the Governor's Climate and Forest Task Force, or GCF, in 2008 as a forum for information and best practices exchange on developing
and enacting legal and policy structures to improve forest management.

The GCF is currently comprised of 26 subnational jurisdictions, including states and provinces in Brazil, Indonesia, and Mexico, covering more than 20 percent of the world's tropical forests.

Some jurisdictions are including or plan to include structures that allow the jurisdiction to issue sector-based offset credits. In 2010, California partnered with two other GCF members, Acre, Brazil, and Chiapas, Mexico, to encourage the development of the Redd offset working group, which developed a set of recommendations on how sector-based offset credits could be included.

And this September, California joined dozens of governments, some of the world's largest corporations, and many civil society and indigenous organizations in endorsing the New York Declaration on forests at the UN Climate Summit in New York. This agreement pledges to cut natural forest loss in half by 2020 and strive to end it by 2030.

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INTERNATIONAL LIAISON MINNICK: ARB is also involved in several multi-jurisdictional collaborations. The Pacific Coast Collaborative brings together west coast
jurisdictions to take collective action on climate change. On October 28th, 2013, PCC members, California, British Columbia, Oregon, and Washington signed the Pacific Coast Action Plan on climate and energy. The plan seeks to enhance cooperation through a range of activities, including taking steps to expand the use of zero emission vehicles and adopting and maintaining low carbon fuel standards in each jurisdiction.

ARB has also participated in meetings of the partnership for market readiness, a multi-lateral World Bank initiative that brings together developed and developing countries to build capacity for climate change mitigation efforts, particularly those using market instruments.

In November 2014, ARB became a technical partner of the PMR. At the UN Climate Summit in New York in September, ARB signed onto four agreements under the climate and clean air coalition to reduce short-lived climate pollutants along with national governments, NGOs, private sector companies, and other organizations.

The coalition is a group within the UN environment program that is the leading global body focused on SLCPs. The four agreements include pledges to work together to reduce greenhouse gas emissions from oil and gas, hydro fluorocarbons, municipal solid waste, and
INTERNATIONAL LIAISON MINNICK: As we move forward in these collaborations, California will continue to be a leader on the subnational level and will work to ensure that subnational activity is an element of the Paris agreement on climate change. And ARB will continue to actively seek partners to work together in the global effort against climate change.

We are also focused on ensuring that California benefits from these interactions. ARB's collaborations with other jurisdiction on zero emission vehicles serve as an example of this. As we work to harmonize regulations with China, Mexico, and others on zero emission vehicles, it will increase the market share of ZEVs, bringing down costs for Californians and enabling more to make the move to zero emission technology.

In summary, the Governor's focus on subnational collaborations on climate change and air quality has strengthened and deepened ARB's existing international relationships and forged new ones. These relationships are a critical component of reducing emissions of greenhouse gases and other pollutants worldwide.

As the Governor has said, California is pivotal in the great struggle to transform the world economy.
What happens here doesn't stay here. It goes all around the country and all around the world. Thank you. We'll take any questions.

CHAIRPERSON NICHOLS: Thanks, Margaret.

We have no witnesses who signed up on this. I thought it would be useful for the Board to hear this presentation because I suspect that you occasionally at least either get glimpses around the Office of Foreign Delegations who are visiting us or in case of a number of you also get called upon yourselves to participate in some of these activities. And I wanted you to see that there's a really serious effort underway to make these interactions as effective and cost effective and strategic as possible.

We know we have a role to play internationally. I think it was probably a year ago in the budget process that we faced a lot of questions about why we were spending any time on activities outside of California. And so since those activities have been increasing, not decreasing, I think it's a good thing for all of us to not only be aware of, but hopefully participate to the extent that it's possible.

Yes, Mr. Gioia.

BOARD MEMBER GIOIA: Thanks. That was a very useful presentation. In it you made some references to
some of the activities and meetings at the climate change conference in Peru. Can you just touch on what you consider to be the highlights that came out of the conference, both from the standpoint of California and generally? It sounds like a few of you went. So if you can touch on that.

DEPUTY EXECUTIVE OFFICER CHANG: Why don't I start, and then I'm going to pass it to Aimee Barnes. Aimee was sort of the leader of our delegation there.

I think from my perspective I never attended one of the international climate conferences. And I think it was -- it's always -- even though when you're in California and you hear, you see the delegations coming, I think it's pretty amazing to go to this international conference and have so many people want to know what's happening in California. And I think that the significance of the linkage that we have in our Cap and Trade Program with Quebec should not be lost on us here. We are the first jurisdiction to successfully link subnational programs across international borders and we're successfully running that program. I think that's a very significant outcome.

I think it's also really important as we go through and look at the climate programs, it's really built on the base line of the programs that we're
operating in California for climate and air quality in California. Folks are very, very interested in what we're doing on vehicle technology, particularly on zero emission vehicles as that technology is progressing. So it's very interesting as you sit in California and you're working on sort of the minutia of making sure all of these programs work, the world is really watching. And I think there is a growing movement of subnational jurisdictions that are working together and trying to motivate change from the bottom.

CHAIRPERSON NICHOLS: Aimee.

MS. BARNES: Sure. Thank you to ARB for the opportunity to be here today.

I think Edie's remarks are spot on. So I won't say too much more. But I do think we had a great presence from California in Lima. I think there was clear interest from everybody there, both those who were attending site events as well as the official negotiators, certainly the State department and others in what California is doing.

As Edie mentioned, I think there is a growing recognition of the important role that subnationals are playing in building momentum to a global outcome in 2015. I think California's presence in Lima this year was very successful in cementing California's role as the leader amongst subnational leaders on that issue.
So I think looking ahead to the year in front of us and the road to Paris, we have a great opportunity to continue to build that leadership role and really define the role that subnationals will play in this post-2015 agreement, which is so important to having a global solution to climate change.

Just a couple of other sort of things that I think were important achievements. We had a number of bilaterals. It's a great opportunity for Californian's representatives to meet with representatives from other jurisdictions, both with those that we already have existing relationships with. So we had an excellent meeting with our Chinese counterparts, but also with others that we might be looking to build relationships with.

As Edie and Margaret mentioned, we made a number of presentations about California's activities at side events. I think those were some of the best -- in some cases the best attended site events that we were at were the ones that were focused on the role of subnationals and subnational leadership. In fact, the New York Times had a piece at the end of last week that I think really did a nice job highlighting both the role of California and the role of other subnationals.

And again, I think we did a good job of cementing
California's leadership role. Secretary Rodriguez addressed the U.N. last Thursday and was given the opportunity to talk about both California's work and the broader context of subnational action.

So personally, I was very pleased with California's participation. I think having ARB there was incredibly important. Edie is able to talk to our partners with a great level of both breadth and depth in the work we're doing. That's invaluable. But I think this will certainly continue to be an area of priority for all of us, including the Governor's office in the year ahead.

CHAIRPERSON NICHOLS: Excuse me. I was just going to add one other thing. I see we do have one person who signed up to speak to us on this issue. That is I think I alluded to this before, but the President Pro Tem of our State Senate, Kevin De Leon, also accompanied the delegation. This is the first time I know of that we had a state Legislator as part of one of these missions. He was very much a part of the delegation. I think the fact that he was there shows for us a much greater level of interest and support from the legislative leadership in California's role here on the international scene. And so I think that was another important outcome that wasn't a plan, but as it turned out, was definitely great benefit
of having had the group in Lima.

So let me call on Louis Blumberg from the Nature Conservancy who's always at these Conferences of Parties and usually to be found organizing meetings around forestry.

MR. BLUMBERG: Thank you, Madam Chair. Good morning. I'm Louis Blumberg. I'm Director of the California Climate Change Program for the Nature Conservancy.

I'd like to commend the staff for the excellent report. It was quite impressive, especially that map. The breadth of the work that ARB is doing around the world to address climate change and air pollution. And I was in Lima and was very pleased to experience and attend some of the events the California folks participated in.

And I would say that as the eighth largest economy in the world and the twelfth largest emitter, California has a responsibility to act globally and is stepping up to that responsibility and exerting the leadership that's really essential. And as both Aimee and Edie had said, there was a lot of interest in California. There always is a lot of interest in what California is doing. And so the actions that you take, that your staff takes there, really get the word out about California's success story. I think that's a message that the world
really is heartened by, to learn that this program here is working and has a price on carbon and is a model for the rest of the world. So I just want to commend the staff for the report and the staff that went to Lima.

One of the outcomes there is a new database on subnational action that will be used to help drive the role for subnational action in Paris. Every year, the world understands more about the importance of action here in California and in other states.

And finally, just to add that we know that by taking additional action on forests, your Board can send a signal to jurisdictions in tropical forest countries that will really generate additional reductions, additional climate benefits that will have way beyond what the initial numbers that you can do here. So we encourage you to continue work down that path as well. Thank you.

CHAIRPERSON NICHOLS: Thank you very much.
Yes, Dr. Balmes.

BOARD MEMBER BALMES: Since there's been all this talk about subnational jurisdiction -- and I may have missed an update because I missed a couple Board meetings in a row there. But have we had an update about our coordination with other states in the U.S. lately? Because I would certainly like to hear whether our leadership in this realm has attracted support from other
states, which I think is really important.

Chairperson Nichols: We have not. I think it's a good idea. I think we should put that on the schedule for early next year. This is timely because the Pacific Coast Collaborative is meeting even as we speak or has finished a meeting in Skamania. Virgil Welch from my office is there. We also had some very productive conversations with the other states that are the so-called 177 states that follow California's vehicle emissions standards and are working with them on a alliance and a set of projects.

So let's ask the staff -- Mr. Corey is nodding.

So I think he got the message.

Board Member Balmes: Good plan.

Chairperson Nichols: Yes.

Board Member Sperling: Thank you.

You know, I just want to add a little bit to this idea of our role as subnationals. And it is really important. So I'm involved in a number of these initiatives more through the university side. But these same initiatives.

And you know, kind of a simple idea is maybe to use Dr. Balmes' kind of analogy is we're hitting way above our weight in this area. But it really is crucial because being a subnational -- and I've seen this personally is
that we actually end up having a lot more effectiveness because of that. A lot of our work with China for instance. There's so much international tension -- political tension that they're really leery of getting involved with the White House and DOE and Washington. Whereas, we can go in there and they're very excited about working with us and learning from us and sharing with us. So we tend to have I think a lot more effectiveness because of that, being a subnational. So it's actually an advantage in many cases and in many situations. So we are very influential and I think we're very effective.

And to add onto what Margaret Minnick said, there are all kinds of benefits that come back to us. And she did a good job of listing them. I would list another one being that we get all kinds of free help and in-kind help from so many other entities. When we were doing the cap and trade, recall, we had delegations coming from Europe it seemed almost weekly to help us and advise us on putting together our Cap and Trade Program because of their experience in Europe. And that happens over and over again, that kind of free help that we keep getting.

Now, you know, we do need to be strategic. We can't do everything with everyone. But we really should be -- we really should be doing it. We do have a big effect that comes back and benefits us. And it also
benefits us because they see us as having this incredible scientific expertise, this culture of engagement which helps us in terms of everything we do. But they appreciate it in many ways. We have all this experience. So I'm really excited to be part -- to be a Californian and be part of ARB and having the kind of effectiveness and influence we're having.

CHAIRPERSON NICHOLS: Thank you. I would just add when I go abroad and meet with people from either NGOs or government agencies, the numbers of people who have been educated in California that you run across is also pretty remarkable. So another way in which we're having a world-wide effect and the air districts as well.

Ms. Mitchell.

BOARD MEMBER MITCHELL: Thank you, Madam Chair.

I just want to mention that as a member of this Board and a member of a local Air District Board, I often get the question of why is California working on climate change because no one else is. And I think that that -- this report from our staff helps us to answer that question. That, in fact, there are a lot of other nations in the world that are interested in what we are doing and listening to us. So for the skeptics of climate change and why we even venture into this area, I think this report is a good answer to that. Thank you, staff, for
all the work you do on this.

CHAIRPERSON NICHOLS: Excellent point.

Supervisor certain a.

BOARD MEMBER SERNA: Thank you, Chairman.

I want to echo everything my colleagues have mentioned and thank staff, especially Margaret, for an excellent report.

I feel a little bit remiss if I didn't ask the question when is the last time we've had or hosted an international conference of our own right here in Sacramento?

CHAIRPERSON NICHOLS: We have an excellent Convention Center here in Sacramento.

BOARD MEMBER SERNA: We do. I'm making a suggestion that perhaps given the amount of time and energy that our staff apply to certainly attending other international convenings and given the amount of activity we have in terms of individual international delegations that visit quite often, it seems to me we might want to give some thought if we haven't done that to perhaps doing our very own home grown international convening to kind of comprehensively maybe address everything that we're doing. I won't say piecemeal, but you know, frequently and maybe not as centralized to California as we have in the past.

CHAIRPERSON NICHOLS: I think I'm hearing an
offer of assistance in organizing this.

BOARD MEMBER SERNA: Very much so.

CHAIRPERSON NICHOLS: Thank you.

BOARD MEMBER GIOIA: Some of us believe we get
better turn out if we held it in the Bay Area.

CHAIRPERSON NICHOLS: I'm not going there. We'll
discuss this later. Venue can be discussed.

But the concept is one that we have not really
been working on, and it is something that we should put
into the mix for next year.

With that, I think we should move along and deal
with our next item, which is a little closer to home,
although it does have international implications, as
everything does. That is the technology assessment that's
part of our work in the direction of sustainable freight
strategy -- oh, we have cap and trade next. Sorry.

Proposed modifications to the cap and trade regulation.

And the right people came to the table, despite my
mistake. So good.

So the item we're going to be focusing on is a
set of proposed modifications to the cap and trade
regulation. These amendments come almost four years to
the week from when the Board first considered the cap and
trade regulation. Since that time, the regulation has
been periodically updated and many implementation
milestones have come to pass. Staff has been busy not only making refinements to the program, but also implementing the first economy-wide carbon market in the nation. Staff has continued to meet with stakeholders to ensure a continued efficient implementation of the program while we've also been busy sharing the lessons learned with other jurisdictions as well.

The successful implementation of this Cap and Trade Program establishes an important mechanism that can continue to reduce greenhouse gas emissions to 2020 and beyond as we work to develop a strategy for midterm targets on the way to our ultimate objective, ultimate as least as far as we're able to imagine of an 80 percent reduction by 2050.

Staff's presentation will provide an update on the implementation of this program, including our first joint auction with Quebec, which we just heard. Specifically, the Board will be considering today targeted amendments that will enhance the implementation of the compliance offset program, including the addition of a new offset protocol for rice cultivation and an update to the existing forestry protocol. The proposed amendments before us today represent movement in a positive direction in California's Cap and Trade Program and will ensure that our program continues to create a powerful economic
incentive for investment in cleaner, more advanced

 technologies, while also providing businesses with

 flexibility to choose the lowest cost approach to reducing

 emissions.

 So I think with that, I will ask Mr. Corey to

 introduce this item.

 Given all of the controversy that there has been

 in the last couple of days about various aspects of the

 protocols, I'm hoping that either you or someone is going

 to address specifically what is actually going to be acted

 on today.

 DEPUTY EXECUTIVE OFFICER COREY: Yes, Chairman.

 We'll be clear on that. I'll explain briefly the

 Resolution because the Board will not be voting on the reg

 item. They'll be returning to the Board.

 As you mentioned, today, staff will present the

 Board for consideration a set of proposed amendments to

 the cap and trade reg. These modifications will clarify

 implementation of the compliance offset program, address

 stakeholder concerns, respond to Board direction, and

 result in an increase in the supply of compliance

 instruments.

 This is consistent with previous Board

 Resolutions that directed staff to consider and propose

 new compliance offset protocols and periodically review
and update existing compliance offset protocols as well. Staff is requesting the Board vote to approve the Resolution directing staff to make additional modifications to the amendments and offset protocols as appropriate and make those changes available for public comment.

The Resolution also directs staff to continue to engage with stakeholders and the public about the modifications, evaluate all comments received and prepare written responses, including responses to environmental comments and prepare the final regulation to bring back to the Board with those responses for future hearing for consideration. And that will be a new months into about mid-2015, a few months from now.

The amendments proposed today and the additional work to be continued in the proposed 15-day process represents further progress in the implementation of the Cap and Trade Program.

Now I'm going to ask Greg Mayeur of our Climate Change Program Evaluation Branch to provide the staff presentation.

CHAIRPERSON NICHOLS: Thank you.

(Thereupon an overhead presentation was presented as follows.)

PROGRAM OPERATION SECTION MANAGER MAYEUR: Thank
you, Mr. Corey.

Good morning, Chairman Nichols and members of the Board.

This presentation will focus on proposed amendments to the California cap on greenhouse gas emissions and market-based compliance mechanisms regulation, otherwise known as the cap and trade regulation.

These targeted amendments include the addition of a compliance offset protocol for rice cultivation projects, an update to the compliance offset protocol for U.S. forest projects, and clarification for two definitions related to the implementation of the compliance offsets program.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: For this presentation, I will begin by providing background and updates on the Cap and Trade Program. I will also provide a brief overview of the cap and trade offset program and the focus of these proposed amendments.

The presentation also includes an overview of the environmental analysis prepared for the proposed amendments and offset protocols in accordance with the California Environmental Quality Act, or CEQA. And since this item will be brought back to the Board next year for
final consideration, I will also discuss the next steps in
the rulemaking process and the potential 15-day changes.
The final portion of this presentation will present
staff's recommendations for Board approval of the proposed
Resolution.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: AB 32, the Global Warming Solutions Act of 2006, requires the
state to reduce statewide greenhouse gas emission levels
to 1990 levels by 2020. AB 32 mandates that ARB develop a
Scoping Plan to lay out the path for achieving the
reductions necessary to meet the State's 2020 goal.

The Cap and Trade Program is a key component of
the suite of measures being implemented to achieve our
statewide goals. The cap and trade regulation was
developed over several years through an extensive
consultation process. The Board initially considered the
proposed regulation in 2010 and adopted the final
regulation order in 2011.

Since the initial adoption, the Board approved
amendments to the regulation in 2012, 2013, and earlier
this year to improve the implementation of the program,
add a mine methane capture offset protocol, update
existing offset protocols, and adjust allocation to select
covered entities. Most of these amendments were in
response to Board direction.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: The GHG mandatory reporting program supports the implementation of the Cap and Trade Program, in addition to the cost of implementation fee program. The 2013 reported and verified GHG emissions are the first emissions with a compliance obligation under the Cap and Trade Program.

In 2013, reported emissions were slightly lower than the 2012 with small increases in the cement, refining, and hydrogen sectors. The electricity sector saw the largest decrease in emissions in 2013. The overall slight decrease in emissions occurred during the same time we saw the state's gross domestic product grow by two percent.

As part of the commitments made in the Adaptive Management Plan, staff will be reviewing any facility-specific increases in greenhouse gas emissions to better understand the cause of the increase.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: As stated on the previous slide, greenhouse gas emissions from regulated entities have a compliance obligation under the Cap and Trade Program beginning in 2013.
Since we have last presented to the Board in September of this year, the Cap and Trade Program hit two new milestones. The first annual deadline for surrender of compliance instruments equal to 30 percent of 2013 emissions with a compliance obligation was this past month. 100 percent of the covered entities met their compliance obligation as required by the regulation.

Secondly, after holding eight California-only auctions since the start of the program, the first joint auction with Quebec was successfully held last month on November 25th. Looking forward, the next compliance instrument surrender deadline is November 1st, 2015, when entities will need to surrender compliance instruments equal to the remaining 70 percent of 2013 emissions and 100 percent of 2014 emissions.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: The cap and trade regulation includes elements designed to minimize compliance costs without compromising environmental integrity. Offset credits that are generated in accordance with ARB-approved protocols and meet strict monitoring and verification requirements may be used to meet up to eight percent of an entity's compliance obligation each compliance period. Allowing offsets increases the supply of compliance instruments in
the market, which reduces the overall costs of the program, making the offset program an integral cost containment mechanism under the Cap and Trade Program. Including offsets in the program also spurs voluntary emission reductions outside the capped sectors and supports the development of innovative technologies.

Since offset projects can be developed within the United States, the offset program provides an important incentive mechanism to encourage the spread of these clean low carbon technologies inside and outside California. The reductions achieved by offset projects provide important environmental, social, and economic benefits by reducing greenhouse gas emissions and supplying green jobs inside and outside of California. To date, ARB has issued over 13.5 million compliance offset credits.

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PROGRAM OPERATION SECTION MANAGER MAYEUR:

Emissions reductions achieved by offset projects must meet rigorous criteria to be approved as a valid compliance instrument. Offsets must be real, additional, permanent, quantifiable, verifiable, and enforceable. To ensure reductions credited as offsets are real and additional, offset credits cannot be issued for any reductions achieved in capped sectors. This could cause double counting of those reductions within the program.
In addition, only ARB can issue compliance offset credits under the approved offset protocols. All California issued offset credits in the program are created and tracked by ARB in its market tracking system called the compliance instrument tracking system service, or CITSS. ARB offsets credits are issued by ARB to projects developed using Board adopted compliance offset protocols. The Board has thus far approved five compliance offset programs listed here.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: Since the Board's initial consideration of the cap and trade regulation in 2010, the Board has issued three Resolutions directing staff to review compliance offset protocols and propose changes as needed. The Board direction is summarized on this slide. The majority of the amendments we will discuss today are a result of Board direction.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: Staff conducted an extensive public process to develop the proposed protocols, including public workshops, working group meetings, and a webinar on updates to the U.S. forest common practice values. Rice protocol workshop and working group topics focused on quantification, environmental impacts, and modeling.
U.S. forest protocol workshop topics included updates to common practice values, expansion into Alaska, clarification regarding eligibility of projects, and changes to the quantification methodologies previously approved by the Board.

Staff released discussion drafts of each proposed protocol and had two informal public comment periods prior to releasing the 45-day package. Staff's efforts to be transparent included posting supplemental resources and documentation on the official rulemaking web page.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: I will now walk through a summary of the proposed changes to the cap and trade regulation. Staff is proposing the sixth compliance offset protocol for rice cultivation projects and an update to the existing U.S. forest projects protocol. These protocols are incorporated by reference in the proposed amendments and are being considered by the Board as part of this rulemaking package. I will discuss these protocols further in the coming slides.

Staff is also proposing modifications to two definitions in the regulation related to offset program implementation. Staff is proposing an amendment to the definition of early action offset project to allow U.S. forest reforestation offset projects that have not been
issued early action offset credits to be considered an early action offset project.

Staff is also proposing an amendment to the definition of intentional reversal to exclude reversals that occur as a result of backfires intentionally set to protect forest lands from advancing wildfire. Back burn fires must be set by or at the request of a local, state, or federal fire protection agency to be excluded from the definition. These reversals would instead be treated as unintentional reversals.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: As I mentioned, staff is proposing a new compliance offset protocol for rice cultivation projects. This is the first crop-based offset protocol considered by ARB. Conventional rice cultivation practices with flooded rice patties serve ecological function as manmade wetlands but also generate anaerobic conditions that enhanced methane production and emissions. Methane is a potent short-lived climate pollutant. The proposed protocol uses the denitrification decomposition, or DNDC, model to quantify greenhouse gas emission reductions from changes in rice cultivation practices that maintain yields and prevent current associated ecological benefits. Staff estimates that potential greenhouse gas emission reductions range
from .5 to 3 million metric tons carbon dioxide equivalent through the year 2020.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: There are six major rice producing states including California, the Gulf Coasts of Louisiana and Texas and the Mississippi Delta, primarily in Arkansas, but also extending into Missouri and Mississippi.

Common rice cultivation practices different geographically. As such, it is important to tailor suitable compliance practices based on geographic location and business as usual farming practices.

With that in mind, staff identified two compliance practices for the California rice growing region: switching from wet-seeding to dry-seeding and early drainage and preparation for harvest. Staff is also proposing two compliance practices for the mid-south states, cyclical wetting and drying of the rice fields during the growing season and early drainage in preparation for harvest.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: ARB has identified several measures to help implement a rice cultivation project. First, staff is proposing conservative modeling options that greatly reduce the
computing time required to calculate emission reductions. Secondly, ARB has contracted with Michigan State University to develop a quantification tool for use by participating farmers that simplifies data input, quantifies emission reductions, and provides recordkeeping capabilities consistent with the protocol requirements.

And lastly, ARB is coordinating with the California Department of Food and Agriculture to implement a limited term pilot program to provide funding to cover the cost of verification. This will aid ARB's evaluation of the best methods for alternative less intensive verification of rice cultivation projects that would retain the existing level of rigor in the compliance offset programs verification process.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: The proposed updates to the existing U.S. forest protocol are technical updates that reflect the latest science. The first of these updates is to expand project eligibility to regions of Alaska for which data required for implementing projects is now available from the U.S. Department of Agricultural, Forest Service Forest Inventory and Analysis National Program.

Staff is also proposing updates to the common practice values in the assessment area data file used to
establish baselines for improved forest management
projects on private land also based on updated data from
the forest inventory and analysis program.

Staff originally proposed the updates to the
common practice values as part of the quantification
methodology updates considered by the Board in September.
Staff removed these updates from that rulemaking package,
and per Board Resolution 14-31 is proposing them again as
part of this package. The additional time was necessary
to ensure stakeholders unfamiliar with the rulemaking
process had ample opportunity to review and comment on
these proposed technical updates.

This version also includes a change to the
classification of high and low site class productivity
codes to bring them into alignment with the stratification
of site classes used in the updated common practice
values. Like the updated common practice values, staff is
proposing this change for the second time per Board
direction. As a result of stakeholder consultation and
lessons learned during the last few years of implementing
the forest protocol, staff has also included
clarifications and modifications to the protocol that
relate to project eligibility, greenhouse gas emissions
reduction quantification, and requirements for reporting
and verification. These changes are detailed further in
the staff report that was released in October.

Lastly, the protocol was reformatted to closely follow standard regulatory format.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: ARB prepared an environmental analysis, EA, for each of the proposed compliance offset protocols and are included in chapter three of the respective staff reports prepared for each protocol in appendices B and C. The EAs were prepared in accordance with the requirements of ARB's certified regulatory program under CEQA.

ARB used the CEQA environmental checklist, Appendix G from the CEQA guidelines to identify and evaluate environmental resource areas that may be impacted. The checklist includes criteria related to resource areas such as biological resources, cultural resources, geological and soil resources, and hazardous materials, among others.

ARB conducted a programmatic level environmental analysis which concluded no significant adverse impacts from the new rice cultivation protocol and the same types of impacts from the updated forest protocol that were found when the forestry protocol was first analyzed in 2010 as part of the environmental analysis included in the Appendix O for the cap and trade regulation referred to as
the functional equivalent document, but with extended
geographic scope of those impacts by expanding project
eligibility to areas of Alaska.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: Staff
plans to hold additional public workshops and/or technical
working group meetings for both the rice and forest
protocols in 2015. Staff expects to propose additional
modifications to the protocols based on stakeholder
comments, the full text of which will be made available
for a 15-day comment period. Some anticipated items to be
incorporated into the 15-day changes for the rice
cultivation protocol include finalizing the approach for
recognition of early adoption projects and updating to the
latest version of the DNDC model.

And for the U.S. forest protocol, some of the
anticipated changes include the results of an ARB contract
with California State PolyTech University San Luis Obispo
to develop a revised approach to establishing base lines
for improved forest management projects on public lands.
Including this approach will increase the likelihood for
projects to be implemented on public lands while still
ensuring projects meet AB 32 criteria.

Staff will also continue to work with
stakeholders to refine clarification to the even-aged
management requirements.

And lastly, staff is waiting on additional data for Alaska related to wood product classes and mill efficiencies.

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PROGRAM OPERATION SECTION MANAGER MAYEUR: In conclusion, staff recommends that the Board approve the Resolution before you. This Resolution directs staff to work with stakeholders to continue to develop and release potential 15-day changes as described in the presentation, to prepare responses to any comments received on the environmental analysis, and to return to the Board next year so that you may consider approval of the CEQA responses and the final rulemaking package.

Thank you for your consideration.

CHAIRPERSON NICHOLS: Thank you.

This is a multi-part proposal, and I've been working with the Clerk to try to organize the witness list in a way that would allow us to focus on one issue at a time, if at all possible. And I realize there may be people who want to talk about more than one thing. But I'm hoping that this will work, if I can divide it into three groups, which would be forestry, rice, and other. Forestry, rice, and everything else. And so if that works, we can start with the, as it happens -- the first
witnesses who signed up were all people that I'm pretty sure are primarily focused on forestry.

We can start off with a visitor to our state and someone I had an opportunity to meet last night, Sheri Buretta from the Chugach Alaska Corporation. Good morning.

MS. BURETTA: Hello. Good morning. Thank you for the opportunity to address the Board this morning and how wonderful it was to wake up to warmth and sunshine from the darkness and cold I woke up to yesterday.

And just for everybody's clarification, Alaska is not an island off the coast of California. We are actually connected above Canada.

My name is Sheri Buretta. I'm the Chairman of the Board for Chugach Alaska Corporation. My family is from the village of Tatitlek, which is in the Prince William Sound, Valdez Alaska. Our people have lived there for thousands of years. People may be familiar with Tatitlek, as it was three miles from the environmental disaster of the Exxon Valdez oil spill that happened in 1989.

So I wanted to just address the Board and ask you to consider removing the exclusion of Alaska so we can participate in the forest offset carbon market. So I'm a little bit nervous.
Chugach Alaska Corporation was one of the twelve regional organizations formed in the Alaskan Native Claims Settlement Act. And we have 2500 shareholders that are tribal members that were formed in a different way than the reservations of the lower 48. So part of what we received in the Settlement Act was approximately a million acres of surface and sub-surface state that encompasses the land within the Chugach National Forest. And so we have a significant amount of resources that would be eligible to participate in your carbon market. And we're very excited about the opportunity to consider those things.

The two largest forests are the Tongass National Forest of southeast Alaska and the Chugach National Forest. And removing the Alaska exclusion will give Chugach and other Alaska native corporations an alternative to timber harvest and will reward sustainable forest manager. Alaska carbon offset projects could generate millions of compliance offsets while achieving social, environmental, and economic benefits to our Alaska native populations.

And as you may know that the data was not available when the program first started, and now it is. So hopefully we will be able to ask you to consider this and that we would be able to participate. So thank you
very much.

CHAIRPERSON NICHOLS: Thank you for coming.
And yes, I think our exclusion of Alaska had nothing to do with the misunderstanding about where it's located. But it was based on the data availability at the time. And staff have assured me that they are very interested in finding ways to make it possible for there to be forestry projects in Alaska. So thanks for making the trip.

I have to say that we met a young man from the tribe who just recently graduated from school and who's working on these projects. And as we were leaving the building last night, I was bundled up in a coat, a scarf. It was cold out there. And this young man was wearing a t-shirt. He told me how warm he felt. It does make you appreciate the differences. So anyway, thank you for making the trip. Appreciate it.

Steve Brink from the California Forestry Association. We have it posted so you can see where you are in the lineup here.

MR. BRINK: Good morning, Board members and Chair Nichols.

I'm Steve Brink, Vice President of Public Resources at the California Forestry Association. We're a trade association of large and small land owners, saw
mills, veneer mills, and biomass power plants here in California.

I'm here only to discuss the proposed changes to the U.S. forest projects compliance offset protocol. I was also Forest Service Deputy Regional Forester in Alaska from 2001 to 2005. So I'm very familiar with the Chugach Corporation, Sea Alaska Corporation, and other entities including the village corporations in Alaska who are very interested in Alaska becoming part of the offsets program. And of course, I also know many forest land owners across the country interested in the offsets program.

Our association opposes the proposed compliance language in the protocol regarding buffer width and buffer retention for land owners that practice even age management. The language as written is substantially more restrictive than the implementing regulations of the California Forest Practices Act. Gary Rynearson, Ed Murphy and I met with the forest offset staff yesterday afternoon, Rajinder, Greg, Barb, Jessica and counsel. And we now understand the intent apparently was not to require anything other than the implementing regulations of the California Forest Practices Act. I believe that following the meeting yesterday the offset staff and we came away thinking a comprehensive frequently asked questions
document that would accompany the existing protocol would be a much better approach than trying to synthesize or simplify what the complicated California Forest Practices Act and its rules mean to land owners across the lower 48 and Alaska.

And because obviously you all know once it gets in rule language, you know, it can become a mess in a hurry. So we really think frequently asked questions document will work very well. In fact, we had five members as part of the Climate Action Reserve Forest Protocol Work Group which lead to the CAR Version 3.2. We would be more than happy to engage with the offset staff in writing that comprehensive frequently asked questions documents. We're sure other work group members from the CAR effort would be willing to help as well. And I'm sure CalFire and the Board of Forestry also would engage.

So in conclusion, we believe the proposed buffer language in the protocol should be removed. It would just be a complicating factor that would frankly we think the consequence would be nobody could register as it's currently written. And instead, starting in January, we develop a comprehensive frequently asked questions document to accompany the existing protocol.

CHAIRPERSON NICHOLS: Perfect. That's it. Thank you.
Roger Williams.

MR. WILLIAMS: Hi, everybody. I'm Roger Williams and I'm President of Blue Source. We've been a carbon market leader for the past 14 years and are the largest contributor of forest offsets to the ARB program, having registered 44 percent of total forest carbon credits issued to date.

We would like to acknowledge ARB staff for the considerable time and effort that's invested in this process. We broadly support the proposed regulatory review updates with a few important exceptions. As was emphasized in nearly 30 public comments prior to this meeting, the new 50 square foot minimum basil area retention limit is excessive and goes well beyond the requirements of the California Forest Practices Act. If adopted, this harvest constraint would require a drastic modification to the sustainable yield plan of almost any even-aged forest in California wishing the participate in the program and would likely preclude the participation of hardwood forests throughout the Easton Lake states as well.

The new proposed buffer system further constrains sound forest management in that 40-acre area harvested to a basil area below 50 square feet would require a buffer nearly nine times the size of the harvest. These
excessive buffers go far beyond prescriptions recommended by forest certification bodies by FSC and FSI. Our proposed solution is to maintain the existing protocol language. As was pointed out in the California Forestry Association's comment letter, the existing language was carefully developed over a five-year period by diverse group of expert stakeholders and should not be abandoned.

Our second area of concern is the modified method for establishing minimum base line levels for IFN projects. The new method proposed unjustifiably penalizes projects established on select highly stocked areas of larger forest ownerships. This runs counter to the program's climate goals as it disincentivizes land owners from pursuing forest projects or their most highly stocked and likely to be harvested acres.

In addition, for reasons outlined in detail in our and 14 other written public comments, this rule change will be impracticable for implementation, highly costly, and extremely difficult to verify. Our proposed solution is to maintain the existing protocols method of establishing minimum base line levels which already requires sustainable long-term harvest practices to be maintained on all land holdings controlled by a forest land owner.

Our third area of concern relates to the common
practice values update which has come up a lot in recent months. It's currently based exclusively on FIA data collected over a very brief window of time, 2006 to 2012, largely in the midst and wake of the recession when housing starts and associated timber demand were at historic lows. The effect of capturing common practice values during this time period constitutes an unrepresentative collection of high stocking levels for assessment areas across the country.

Just real briefly, our proposed solution would be to modify this over an extended time period, such as 25 years, the same length of time as a project crediting period, which takes into account timber market fluctuations and avoids disincentivizing projects during time when the motivation to harvest is the highest.

Thank you for letting me go a couple seconds over. Appreciate it.

CHAIRPERSON NICHOLS: I'm going to be a little bit more rigorous now since we've got such a long list of people who want to testify.

Mr. Strauss.

MR. STRAUSS: Hi. My name is Josh Strauss. I'm the Director of Forest Projects for Blue Source.

But today I'm here to speak on behalf of the International Emissions Trading Association, IETA.
IETA, a multi-sector group of over 140 businesses across California and globally is increasingly concerned about program and market impacts linked to ambiguous and inconsistent compliance language in the regulation and offset protocols. IETA fully supports ARB's effort to ensure that offsets are generated in full compliance with relevant regulations.

The recent clean harbors ODS investigation and determination brought to light a lack of clarity regarding several aspects of whether or not California offset projects sufficiently meet regulatory compliance requirements under California's regulation. This uncertainty makes it extremely difficult for market participants to establish the probability and magnitude of risks related to compliance with laws requirements.

If offsets are to continue to play an important cost containment role in California's program, it is critical that more specific language and clear boundaries on offset project activities and violation time lines be provided.

IETA has made the following specific suggestions on how to clarify the applicability regulation language to enable investments in the projects needed to make California's program a success. First, IETA recommends that the regulation and revised protocols clarify that
only activities in the offset project area designated to
increase removals of greenhouse gas emissions from the
atmosphere or reduce/prevent emissions could potentially
lead to an in validation.

Second, it remains unclear what exactly the
constitutes a violation. IETA believes it is extremely
important to ensure that violations unrelated to actual
offset project activities are not grounds for
invalidation. Protocol language should therefore clarify
only fully adjudicated violations which directly effect a
number of credits issued from a project can result in
potential invalidation.

Finally, IETA asked the ARB to provide
clarification specifying that only credits arising during
the period of an actual violation could potentially be
subjected to invalidation rather than all credits arising
during an entire reporting period.

Thank you for your time today and for this
opportunity to comment.

CHAIRPERSON NICHOLS: Thank you.

Ed Murphy.

MR. MURPHY: Good morning, Chairperson and
members of the Board. My name is Edward Murphy. I'm a
forester for Sierra Pacific Industries.

One of the things that I wanted to clarify and I
think it would be useful for you in your Board capacity to make sure and note in your Resolution that you're going to pass here says that it is really not your intention to try to do the Board of Forestry or the Department of Fish and Game or the Fish and Game Commission's job. And that while we did work for five years -- I was a member of the stakeholder work group, we did work for five years to bring forward the rules that you currently have. Twice in this process, once with CAR and once with this Board, we had to actually ask for them back to fix what got changed in the process of trying to take the complicated language and move it forward.

And I would recommend that you add a note there that it is not your intention to increase the forest practice rules of the state of California via carbon projects. And so that would really help to stabilize the issue that we ran into. I mean, we're sitting here and we have three -- or five projects actually in the hopper working towards offset generation. And within the time frame of submission to verification, we see a shuttering of the rule system that we're supposed to be working under. We're trying to make a promise to the people of the state and to the Air Board of a 100-year commitment to a certain level of carbon retention on the property or in fact increasing carbon on the property. And we have a
rule that changes the game rather dramatically.

And I don't believe it was intentionally done that way. I think it's that there is in addition to the many years of the stakeholder work group, there is a 35 year history of rulemaking in forestry in this state of California already. And that they are complicated and difficult.

So just in the context of approaching this rather than trying to make the protocol a carbon copy of the Forest Practices Act, it would be much better to do a frequently asked question guidance document for land owners who haven't had the joyful experience of working under the California Forest Practices Act for the last 30 years as well.

So I've just -- to me, that's a really important piece. And I think it was portrayed to us yesterday in the staff meeting. But it would be useful for the Board to actually add that to the Resolution so it was clear that the intent of the Board is to harmonize the protocol with the other state Commissions and Boards already existing regulations. That would help give us a lot more stability. I think from our perspective as a family-owned company, 100-year commitment its something we're willing to make. But it is scary this short into the process to find a rule change as dramatic as that. Thank you for
CHAIRPERSON NICHOLS: Thank you.

Alex Leumer.

MS. LEUMER: Good morning, Madam Chair and members of the Board. I'm Alex Leumer, Climate Change Policy Associate with the Nature Conservancy.

I'll be commenting on both the forest and rice protocols to save time.

In regards to the proposed amendments to the forest protocol, there number of clarifications and changes that the Nature Conservancy supports, including adjustment to common practice values and the inclusion of Alaska. We will note changes on even-aged management need more discussion. As currently written, it will have unintended consequences for good management, FSC certification and practices in deciduous forests on the east coast. We're happy to hear there will be additional workshops and we recommend a workshop to discuss the issue further.

The Nature Conservancy supports the rice cultivation project compliance offset protocol and recommends its approval. TNC shares ARB's goals of designing offset practices which avoid negative environmental impacts, and we commend ARB's significant investment of staff time and stakeholder engagement to
ensure that this protocol does not materially effect migratory birds and other wildlife.

The current version of the protocol includes numerous requirements which reflect safeguards against negative impacts and migratory birds. The rice growing regions included in the protocol provide critical habitat for migratory birds along North America's two largest flyways. It's essential that habitat it not effected by the practices proposed in the protocol.

We commend the excellent work of ARB staff as they developed this offset protocol and appreciate the opportunity to provide our support. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Gary Rynearson and then Sean Carney.

MR. RYNEARSON: Good morning, Chair Nichols and members of ARB. My name is Gary Rynearson. I'm a registered professional forester with Green Diamond Resource Company. And I'm also a former member of the California State Board of Forestry and Fire Protection, as well as a member of the Committee that put together the original CCAR forestry protocols, which are substantially the same protocols that you adopted for the U.S. forest projects.

First of all, I'd like to say I'm fully supportive of including Alaska. I've done a substantial
amount of work in Alaska. I've worked for the Sea Alaska Corporations and believe this provides a great deal of opportunity for forest land owners in Alaska, especially the native and village corporations.

However, I'm very concerned about the proposed changes to the even-age management standards, which would create a buffer that is inconsistent with the California Forest Practice Act and the enabling rules. This is substantially larger buffer and a substantially longer term buffer.

In comparison, the Forest Practice Acts requires a buffer of three to five years post-harvest of an even-aged unit. Our average age units for Green Diamond range from about 22 acres is the average. However, our opening size because of all the buffers is only about 15 acres. To demonstrate what this would do, a 20-acre unit would have a 106 acres of buffer, which you could not enter for 15 to 25 years. That is a substantial impact to the forest land owners and will have a chilling effect on participation of even-age managers.

This isn't -- when we think about this, I know we go immediately to clear cuts. This effects seed tree, shelter wood system, as well as sanitation, salvation, rehabilitation type harvests and the variable retention harvests that are commonly used on the coast also.
I request that the Board delay any action on this. And we're very supportive have working with staff to develop the frequently asked questions, keeping in mind these protocols were developed by Californians mostly for California. And now, we're essentially exporting them to other parts of the state and sometimes outside or other parts of the nation and outside of the nation. And I think it is important to have a series of frequently asked questions and some kind of a process that allows them to understand what the natural forest management goals and the standards of our forest practices are within these protocols.

Thank you. We look forward to working with you and staff to answer some of these questions.

CHAIRPERSON NICHOLS: Thank you.

Sean Carney.

MR. CARNEY: My name is Sean Carney. I'm President of Finite Carbon.

Finite carbon exclusively develops forest carbon offset projects for the California Cap and Trade Program. We are currently developing one-fourth of all improved forest management projects within the program.

We have submitted written comments on several specific issues, which we have identified in the proposed updated language for the protocol. As you may have
noticed, a few of these changes may have garnered a strong response from stakeholders.

One thing I'll note is that 14 of our 15 projects are outside of the state of California. The level, the threshold we're already asking them to come to is significantly higher than what are already in place in other states. So that's one thing about the good impact the protocols are having outside of the state.

I would like to take this time to commend the Air Resources Board for its published intention to more actively seek feedback from the stakeholder community as the current proposed language is reviewed and modified. ARB's forest staff is challenged with managing a very complicated protocol and to date has done an extraordinary job given the volume and difficulty of work they must perform.

However, as demonstrated by the backlog of early action projects awaiting approval and the unfilled positions posted for new hires, ARB's forest division has staffing workload challenges. ARB's intention to host technical workshops to discuss the proposed changes and seek wider stakeholder input during the development of new policy will promote more efficient use of staff resources.

ARB is a wide network of participants, including public, private, and nonprofit groups which we encourage
it to draw on earlier in the process as it considers future changes. Thank you for your time.

CHAIRPERSON NICHOLS: Thank you.

John Nickerson. And then Brian Shillinglaw. Mr. Nickerson here?

Mr. Shillinglaw, do you want to come up?

MR. SHILLINGLAW: Thank you for the opportunity to comment.

My name is Brian Shillinglaw. I'm Associate Director New Forests. And we manage slightly over two billion in capital for sustainable forestry and environmental market investment internationally.

We located an office in San Francisco in 2008 specifically because of the adoption of AB 32. And through multiple investment funds, we're currently financing and developing over 120,000 acres of projects for this system, including the first project registered under the compliance forest offset protocol, the Yurok Tribes forest carbon partners, improved forest management, a project which was recently featured in the L.A. Times and also the Round Valley Indian Tribes project, which is currently under review by ARB.

First, we want to thank ARB staff for their efforts in the forestry protocol and the Board for adopting land use offset protocols. The forestry protocol
has and will continue to have a significant impact on forest land use nationally. And many of the proposed updates to the forestry protocol will improve and clarify the protocol.

We would like to make a few brief comments related to the forest protocol.

First, the updates to the common practice values are, in our view, technically accurate and related to forest service science. And we urge adoption without further delay.

Second, we look forward to continued dialogue with ARB staff on issues related to base line revision and even aged management, which have been mentioned by other commentors, with the goal of making sure that there are strong rules and sustainable forest management without making the protocol more stringent than the California forest practice rules, which we view as a benchmark of sustainable forestry nationally.

Third, I'd like to few words about offset and validation. New forest supports the offsets and validation rules. It is the right policy to foster detailed due diligence of the offset supply chain. However, at present, the invalidation rules are too non-specific to enable market participants, including verifiers, to adequately diligence invalidation risk.
And we urge ARB staff to issue detailed guidance on invalidation related to the forest protocol that first specifies that only environmental health and safety violations that effect the actual forest carbon stocks can trigger violations, not an OSHA violation of a logger not wearing a hard hat or a culvert that's not up to Water Board regulations.

Also to clarify what constitutes an environmental health and safety violation. Excluding regulatory corrective action letters and specifying an actual civil judgment or criminal conviction or submission of wrong doing such that people can understand what to diligence in evaluating this risk.

And so thank you for the opportunity to comment.

I'll keep my comments brief and wanted to cover those three points.

CHAIRPERSON NICHOLS: Thank you. Very well done.

We omitted Mr. Nickerson. It looked like he was moving forward. Was it somebody else who was getting ready? In not, maybe he just isn't here.

Christie Pollet-Young and Alex Rau.

MS. POLLET-YOUNG: Hello. My name is Christie Pollet-Young. I'm the Director of Greenhouse Gas Verification Services with SCS Global Services. We have so far verified 75 percent of the forest compliance
projects and are currently undergoing the verification about half a dozen others.

We thank the Air Resources Board and their staff for their continued commitment to the cap and trade regulation and more importantly to working with us. We have found that we have developed a very good relationship working with them and we hope to continue to do so. In addition, we have found that it's been very helpful to work closely with offset project registry staff.

One thing we would like to encourage is continued collaboration and communication in hopes that we can provide continued service and continued integrity to the application of the regulation and protocols.

One thing that we would like to request is guidance documents or any sorts of FAQs that could help us provide written guidance to the projects we are verifying, their program staff, but also to provide consistency to the work that we are doing.

In addition, we would like you to look at our comments that we have provided and please feel free to reach out to us if you have any questions about verification.

One thing is that we know that we work for you guys. We are a third party body, but we know we're supporting the regulation, the protocols, and your law.
So we want to work closely with you on that, and we would like to speak to you about verification. It's a competitive environment. We want to do things efficiently and cost effectively, but we understand we need to work with the rules. We've seen a couple of proposed changes that might be a little bit difficult for us to maintain our place in the marketplace to be competitive. We'd like to work with you on that. But ultimately know that our job is to support the integrity of the system so we'd like to work with you.

One other thing is we would like more clarification about invalidation. That's one of the big bulks of what we do. And our concern is how much should we do and what is sufficient. So one thing we'd like to work with you is find guidance about the health and safety laws and what we need to be doing to ensure that we are doing our job competently and to your satisfaction.

I thank you for your time. And I look forward to continue working closely with you. And best wishes with everything.

CHAIRPERSON NICHOLS: Thanks. Thanks for the very comprehensive comments that you submitted in writing as well.

Alex Rau.

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

My name is Alex Rau. I'm a partner at Climate Wedge, LLC. And it's my pleasure to offer comments today in support of the proposed rice cultivation offset protocol.

By way of background, my firm is an investor in the carbon markets and clean energy sectors. We've been active here in the California carbon market in particular in connection with the development of the rice offset protocol being part of the technical working group.

Climate Wedge very much wants to see a successful rice cultivation rice offset protocol that can be viewed as a model for the future protocols that we hope will follow.

Our comments today come from the perspective of a potential investor in projects that would be generated under this protocol. We share a desire with the other proponents to see this protocol become adopted, but more importantly, really to be written in a way that will be successful in attracting investment and equally important in a widespread uptake across rice country.

So wanted to commend the Board and ARB staff for continuing to demonstrate leadership on the issue of climate change. Your work is vitally important, and we support ARB's efforts to adopt a world leading offset
protocol. We stand in support of that protocol, but we do have a concern about the current form that we've addressed with staff and we want to bring to your attention. Our concern is that the current protocol as drafted does not include post-harvest rice straw removal, also known as bailing as an eligible project activity. From an investor's perspective, we're concerned without the inclusion of bailing, it's very difficult to see how this protocol will achieve any real or meaningful scale of greenhouse gas emissions reduction. Certainly not in terms of what would be commensurate with the state's goals under AB 32.

As you're well aware, the primary cause of greenhouse gas emissions from the rice sector is from the rice straw that is broken down under anaerobic conditions when the straw is left on the fields typically after harvest, and those fields are flooded for the purpose of degrading that rice straw, a purpose that generates large amounts of methane emissions. And methane is a potent greenhouse gas emissions.

It's only logical that one of the most effective ways to reduce the methane emissions from the rice cultivation sector is to proactively remove the straw from the fields prior to flooding so there is less organic material to break down in first place under anaerobic
conditions. In our view, including bailing would not only materially improve the protocol's effectiveness in reducing greenhouse gas emissions, it would allow for significantly less water consumption in the sector.

We believe that bailing could be readily included into the protocol without causing a significant impact on the water fowl that rely on winter flooded fields for migratory habitats. We are submitting today a more detailed ecological and environmental analysis that has been previously shared with ARB staff. And we understand the time and considerations limited their ability to fully evaluate these recommendations.

So the bottom line is that we believe that bailing should be included as an eligible project activity. It's good for maximizing emission reductions. We have a specific request that the Board direct staff to reconsider including bailing in the coming months as a proposed eligible activity. Thank you very much for your time.

CHAIRPERSON NICHOLS: Thank you.

Robert Parkhurst.

MR. PARKHURST: Good morning. Thank you for the opportunity to speak with you today.

I'm Robert Parkhurst, Director of Agriculture Greenhouse Gas markets at the Environmental Defense Fund.
As I came in this morning, I looked out over the rice fields and reflected on the precedential nature of this meeting. As staff had noted, today you're considering the first land-based or crop-based offset protocol to be included in California's Cap and Trade Program. This protocol reduces the generation of methane, a short-lived climate pollutant, something which I know is of keen interest to the Board.

As a result of this rulemaking, almost two dozen growers have stepped up and are starting to process of creating and generating projects and verifying projects. This spring, we expect to see the first credits generated by project in California with more than 6700 tons. ARB staff, particularly Greg Mayeur and Yachun Chow have worked tirelessly to develop this protocol. As I stated, there's been two workshops, four technical working groups, and they vetted all of the potential growing practices to reduce emissions and the impacts of these practices.

What you have before you today represents the best available science. It maximizes both greenhouse gas reductions and water bird habitat. What is significant about this protocol is it allows multiple growers to report their information in a single group. This is critical, as GHG reductions on a land basis are small and on a per acre basis.
The ability to consolidate their data collection and recording reduces their paperwork and administrative costs. In addition to the protocol, the staff report includes a proposed pilot verification program whereby project implemented in the near future will be able to conduct two verifications. One is set forth in the current regulations, and the second which would identify an alternative and more cost effective verification project.

EDF supports this proposal as verification is approximately 50 percent of the cost of developing agriculture projects. Identifying these cost effective verification processes are critical to the success of growers participating in the Cap and Trade Program.

I encourage the Board to direct staff to review the written and oral comments and bring this proposal back before the Board before the growing season starts this spring. In addition, I would encourage the Board to direct staff to develop an offset protocol on nutrient management. We have learned through the development of the rice protocol can be leveraged to the development of a nutrient management protocol, and this protocol can generate significant near-term reductions.

In closing, I'd like to thank Paul Buttner of the California Rice Commission for their collaboration on this
project as well as grant funding from the Natural Resource Conservation Service for our ability to do work in this area. Thank you very much.

CHAIRPERSON NICHOLS: Thank you, Mr. Parkhurst.

I think it's fair to say that we would never have made it to this day without EDF's help and support. Thank you for all of that.

Mr. Buttner and then Mr. Gunasekara.

MR. BUTTNER: Thank you. Good morning, Chairman Nichols and members of the Board. It's a pleasure to be here to talk about -- offer the grower perspective on this issue. I'm manager of Environmental Affairs for the California Rice Commission.

First and foremost, I want to let you know we do support this proposal before you today. It does have its challenges, but so does just about every other program that we introduce initially. So I think it's important that we really move forward, we get this project started, and promote it as heavily as we can within the rice environment.

The California Rice Commission has a strong history of addressing environmental regulatory issues head on, and this was no exception. Shortly after AB 32 was passed, we looked hard at how we could become a part of the solution for climate change in California. Therefore,
it was about six or seven years ago we joined forces with
the Environmental Defense Fund. And as Robert mentioned,
two USDA grants have helped us learn a lot more about the
situation, our emissions, the potential for reductions, as
well as developing very significant technical tools that
we believe can be transferred to other agricultural
sectors.

We've heard a lot about the habitat of rice
fields and it's certainly something that the Rice
Commission holds dear. I joke around that really we
should be called the California Rice and Water Bird
Commission. We do provide half a million acres of
surrogate wetland habitat in the Central Valley here in a
state where 95 percent of our original wetlands are gone.
So these rice fields are now very essential. Sixty
percent of everything a duck eats comes out of rice
fields. If they weren't there, there would be 2.5 million
fewer ducks in the Sacramento Valley. We have modeling
for waterfowl to make those statements, but we can also
make very similar statements about shore birds, wading
birds, raptors, all the 230 species that reply on our rice
fields. Now our winter flooding program is very critical
for that habitat, and it does have methane emissions
associated with it.

The challenge that I see mostly with this
protocol is one of economics. The potential revenue per acre is quite modest, as we all know. Certainly, less than one percent of a grower's cost of production to do his primary business, which is to produce and sell rice. So for a grower to view this as significant, we're really going to have to make the program as efficient as possible in terms of its implementation and addressing administrative costs.

My letter to you is in the file. It does propose essentially four areas where I'm hopeful further progress can be made. I want to acknowledge Greg and his team for making progress in that area already. However, I'd like to use the next few months to seek if we can make some additional incremental progress towards simplifying the complexity of the modeling and the verification, as well as looking at the consolidated reporting for these projects.

CHAIRPERSON NICHOLS: Thank you. We have received your comments and appreciate them. Thank you.

MR. GUNASEKARA: Good morning, Chairman Nichols and members of the Board. My name is Ami Gunasekara, I'm advisor to Secretary Ross. For the record, I'm not the Secretary of Food and Ag. Thank you for this opportunity.

CHAIRPERSON NICHOLS: I thought something had happened.
MR. GUNASEKARA: No. No. I'm just representing. So thank you for the opportunity to make a few comments on behalf of Secretary Ross and the Department.

Back in May 2013, I sat with one of your staff, Edie Chang, on a joint legislative hearing of the Assembly Select Committee on Sustainable and Organic Agriculture the Assembly Select Committee on Agriculture and the Environment. We talked about climate change and ag issues.

And at that meeting, I recall stating that we had just begun the discussion on this rice ag offset protocol and it was not without its challenges. Those challenges included establishing implementation reporting and verification procedures that do not jeopardize the credibility of the Cap and Trade Program as State agencies and those who are working at the ground level to reduce greenhouse gases.

A new protocol proposed to the Board must be real, quantifiable and enforceable metrics, while at the same time not compromising yields for food production. As you know, agriculture is a dynamic system that requires much flexibility when developing while entering incentive programs. There was a lot of attention given to establishing the science behind this protocol, and I'm highly biased when I say this as Science Advisor to
Secretary Ross, it's always a good thing to have the science guide the development of this and similar incentive programs.

A little over one and a half years later after intensive and productive collaborations with your staff and stakeholders, the major challenges of the rice ag offset protocol have been addressed. The result is the first crop-based ag offset protocol for your consideration today as a staff proposal.

I want to talk a little bit about the fact that recently we established the concept of ecosystems services and agriculture to highlight and explain to a wide audience the many benefits afforded by farmers and ranchers this California. The Environmental Farming Acts Advisory Panel, which I'm liaison to in the department defined the ecosystem services and agriculture as, "The multiple benefits we gain from farming and ranching, including crop and livestock production. In addition to valuable open space and wildlife habitat, the management decisions and conservation practices of farmers and ranchers also enhance environmental quality."

These benefits in producing safe high quality food products while addressing air quality, including reducing greenhouse gases. We know this ag offset protocol will be well received by the early innovators in
rice production in this region. The same innovators are
the ones that led the charge to make rice fields available
for habitat for many birds that migrate to this region.

As you know, the cost of verifications for
project management for offset protocol can be expensive
and costly, which in turn might not provide an adequate
incentive to growers. We have discussed using different
technologies to enhance this protocol. For example, we've
talked about collecting images, and we have smart phones
and verified using satellite information.

CHAIRPERSON NICHOLS: Mr. Gunasekara, we perhaps
should have invited you to sit with the staff because you
represent another agency. But since you're testifying as
a member of the public, I have to hold you to the
three-minute time limit like everybody else. Sorry.

MR. GUNASEKARA: Okay. Thanks.

CHAIRPERSON NICHOLS: Thank you very much.

Adam Smith.

MR. SMITH: Hi. Good morning, Chairman Nichols
and Board members. My name is Adam Smith. I'm the
Program Manager of Climate Policy at Southern California
Edison.

As I think the first regulated entity testified
here today, I'd like to share with you a little bit of the
perspective from our side, as well as offer a clear and
firm support for the inclusion of the rice cultivation
offset protocol in the regulation.

Southern California Edison, I think you would see
a theme if you look at our comments on the offset market.
And it's trying to encourage as much as we can the supply
because we view in the long term and right now a robust
offset market is key to cost containment. And that even
gets more so as we come closer and closer to the year
2020.

I think the second point -- from that we're not
just coming up here saying that again and again. We've
actually gone to the market and had a successful RFO where
we've heard from many people in this room as well. And
one of the items -- and I think it was mentioned by a few
of the folks here earlier that it's constantly coming up
when we went through the RFO process, when we reached out
to project developers and the rest was invalidation risk
and how the definitions around invalidation, what
precisely it means, what things might trigger this, and
the rest, it does create problems not just for offset
project developers or for project registries, but for
entities, you are regulated under this rule because we're
frankly interested in precisely the same things that
everyone else is in this room, which is making sure the
offsets we're getting are real, verifiable, enforceable,
additional, and the rest of the list.

The second item, if I could transition quickly, is full and complete support for the inclusion of the rice offset present protocol. I think one of the great things that we have is Yachun Chow, who set up the technical working groups, which I think is also something that should continue if possible on the rest of -- as we look at additional offset protocols in the future. Basically, you know, it gave regulated entities like us a chance to see how the sausage was made. I think as we're talking about the invalidation risk and really under understanding what invalidation might look like in each of these protocols, getting a chance to look at the sausage was made like that was incredibly insightful for us. Not just clearing up those definitions about what invalidation is, but letting folks see how it's all put together.

With that, I'll yield the rest of my time. Thank you very much. Happy holidays.

CHAIRPERSON NICHOLS: Thank you. Thanks for your testimony.

MR. VESSELS: Thank you, Chair Nichols and the Board and staff for inviting me and giving me an opportunity to testify today on the mine methane capture protocol.

For one, I think -- and I've told my friends and
associates, I think your Cap and Trade Program is best in the world. I don't -- I'm not acquainted with all of them. But one reason I'm impressed with it is focused on the direct activity of greenhouse gas reduction.

    My focus is on mine methane capture in that field, and I'm here just to suggest that the staff work on clarifying some of the issues. And we've got the car now. We have mine methane capture. Now we're driving it. And so we're getting some experience with some of the issues we'd like to see clarified particularly with regard to invalidation and the validation regarding citations of violations, for instance.

    I wrote -- I did turn in a letter for me personally about just some anecdotal citations which I don't think would be appropriate to be considered as invalidating offsets. For instance, you have the requirement sometimes from different regulatory agencies for the same facility. And so times you have to actually work out an agreement between who's on, who's off. A well could be regulated by the oil and gas industry because it's -- gas is coming out of the well. And the mining regulatory authorities could still regulate it because methane coming out of a mine.

    Simple citations could include removing the requirement to remove a hazard that's in a walkway or
pathway. Somebody could trip or stumble over. So you should fix that or you get a citation for it. You get a citation for not having put a chalk behind the tire of the truck or vehicle to keep it from rolling backwards.

Cleanliness, permitted noise levels in certain areas. Of course, wearing safety gear, gloves, ear protection, eye protection, et cetera. Those are just a number. And they are regularly being cited, and there's numerous agencies that can send in a citation. But that also you want to have the right to that citation is just a citation. We can challenge it. So we don't think it's appropriate to have the offsets invalidated while we maybe have right of due process to challenge it. And then also a lot of these citations are simply an inspector coming by, the mine safety health administration officials saying, "Fix this."

Well, okay. So fix it. And so is that my three minutes.

CHAIRPERSON NICHOLS: Thank you. We did receive several letters on this topic, and I think the staff will be asked to address this topic in a moment.

Mr. Brunello.

MR. BRUNELLO: Hello. Thanks for the time. Tony Brunello representing CE2 Carbon Capitol.

I'll be very brief. We worked closely with the staff, Rajinder and Greg, Jessica, Ellen, others, Chair and a few other Board members specifically talking about
the invalidation issues. I think it's been addressed by Tom, IETA, a number of folks today.

The main thing that I think is being done and we've been told and reference it's just a matter of timing and specificity around this invalidation topic.

So my only comment today as the Board is there's great opportunity to provide more detail and specificity around the borders on this topic. Again, I think staff know full well of the issue. We just hope there can be some guidance in the near term. So anyway, that's all I have to say. Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Ms. Harrison. Mary Harrison from Green Action. Not here. Then Mark Krausse is our last witness.

MR. KRAUSSE: Madam Chair, members of the Board, Mark Krausse on behalf of PGE. Very brief just to support the adoption of these protocols and to encourage the development of additional protocols as we enter into the second compliance period in a much expanded market, the need for more control. And I think I beat Tony Brunello. Thank you.

CHAIRPERSON NICHOLS: I'm going to turn the gravel -- the nonexistent, the psychic gavel here over to my colleague, Mr. Serna, to handle the discussion around the Resolution. But I think we've had a good array of
testimony here this morning and probably just need a little bit more discussion on a couple of the items that were raised. Thanks.

ACTING CHAIRPERSON SERNA: Thank you, Chairman Nichols.

Again, I want to thank all the witnesses that took time and energy to submit written comments and to be here this morning. At this point, we will bring it back to the Board for any comments, questions of staff, suggestions for the language change.

BOARD MEMBER EISENHUT: On the rice, my comments are specific to the proposed rice protocol. I support this action. I think, as has been stated, it will provide a mechanism for the California crop agriculture to participate in the reduction of greenhouse gases. It will do so with minimum or no risk to production capability, provide some income, and maintain the rice industry's involvement with flyways.

I do have a couple additional comments in the context of Paul's comments about being sensitive to the rather minimal economic impacts. And I applaud staff for their work to date in minimizing the aggregation and verification issues. But whatever we can do to continue to streamline the process is encouraged.

I, at this time, have difficulty. I cannot
support the bailing option. I don't think there's enough technical data. It may be sound theoretically, but I don't believe we have technical data to support that option.

And lastly -- and this is somewhat of a leap. But it was mentioned a couple times today. Now that staff has developed this expertise, walked through this process, and has become involved in this kind of a learning process, I think it's time and I would encourage our look at whether we call it a nitrogen protocol or a nutrient protocol. I think it's time to at least take a look at that process. Thank you.

ACTING CHAIRPERSON SERNA: Mayor Mitchell.

BOARD MEMBER MITCHELL: Thank you, Supervisor.

Just a couple of items that seem to rise to the top of the list here. We heard some comments about the California Forest Practices Act and maybe inconsistency in our regulation with that Act. So I just would like staff to be working on it to make sure that we are not creating a monster where we have inconsistencies.

The other issue raised by Blue Source was this time frame from 2006 to 2012. Of course, that was sort of in the middle our economic downturn. So I think we want to take a look at that time frame. And it may extend that out so that we do have accurate representation of economic
conditions and other conditions during that period we're looking at.

And of course finally, this issue of violations and what kinds of violations will result in invalidation of the offset. That's critical I think. We've heard that from all -- not just rice, the proposed rice protocol, but from coal mine methane and from the forestry people as well. So what kinds of violations actually affect the integrity of the offset. I think that's going to be a thorny issue, but something that needs to be worked on. So those are my comments. Thank you.

CHAIRPERSON NICHOLS: Dr. Balmes.

BOARD MEMBER BALMES: I want to comment on the other category. Going back to the staff presentation on slide four, there was a bullet on adaptive management. As I think staff knows, I've been very interested in that for a long time. And I feel bad since I've already asked for an update on what we are doing in terms of cap and trade with other state jurisdictions, I'd also like an update about adaptive management in the near term. Doesn't have to be tomorrow. I realize holidays are coming, and I realize staff is overworked. But I would like to hear what we're doing in this regard.

DEPUTY EXECUTIVE OFFICER COREY: We'll see that happens, Dr. Balmes. I'm glad it's not tomorrow. Thank
ACTING CHAIRPERSON SERNA: Any other comments from Board members?

Ms. Berg.

BOARD MEMBER BERG: I just would like to follow up on couple of comments from my fellow Board members. One on -- I really want to echo Mayor Mitchell's comments, specifically on the invalidation and being a regulated company. I can testify to the types of citations one can get, keeping records, but not the records that one inspector wants, then five years later another inspector comes in and wants it a different way.

I do also understand it's a slippery slope because there are many regulations that critically protect the health of workers and the facility and the surrounding communities. And so somehow ARB does need to weed through the minutia of how do we protect the health and safety of not only workers and the surrounding communities, but protect the integrity of what these offsets would be.

I can't tell you how I believe it is not an easy job and it's a very slippery slope. But if we don't do that, what's going to be in front of Mr. Corey often is just a whole slough of possible invalidations. And all of a sudden we're going to be looking at citation by citation what is meaningful and what is not. So that's going to
take a little bit of time. And it might be worth getting some of our partners involved. So that if you were to talk with some of the other agencies, what really rises to the level of what should invalidate an offset, especially when it doesn't mean that the emission was invalidated.

It is real. It is verifiable. But we have this extended situation that should -- maybe we should get some other agency's involvement so we have some partnering in this. That's what I would suggest on that.

Also from the forestry testimony, I really would appreciate if staff can go back and look at the retention. It looks like there's some base issues. I'm sure you're working with them on that. But I would be in favor of us being in harmony. And I agree with the comment that -- and evidently it was your comment in a meeting that our goal isn't to do the job of other departments, but in fact, make sure we're in harmony with the rules and regulations of other departments.

The other thing from the rice protocol, I would be interested in additional data. And I've checked with my fellow Board member here and the additional data on bailing. It does seem that if this is going to be a successful protocol, we do need to find ways of capturing more emissions, and one of the emissions source is the second flooding. So it does seem that we should take an
active role in gathering that data and making a
determination based on scientific data and what the
benefits are that might outweigh some of the concerns.

And I think that that does it for me. Thank you
very much, Supervisor.

ACTING CHAIRPERSON SERNA: Great.

Any other comments? If not, Mr. Corey, this is a
Resolution that gives staff direction, including what
you've just heard in terms of these two protocols. Can
you briefly explain next steps?

DEPUTY EXECUTIVE OFFICER COREY: Yes. So next
steps by virtue of acting on the Resolution, it's
directing staff to really follow up on the Board
presentation and the number of discussions and work with
stakeholders in the terms of a 15-day change process.

So you called out a number of elements here,
including the forest practices and the consistency with
other State agencies. We would work through that process,
develop proposed language through a stakeholder process
including workshop engagement with stakeholders. That
would go out for public comment. We would get public
comments. We would prepare written responses to the
environmental related comments and collectively the whole
package, return to the Board, walk through the adjustments
that have been made based on the public process. That
would be the hearing where we would discuss action on the
proposed amendments.

To go through that whole process will take us
several months. This is going to be based on the comments
that you've heard through the engagement here and a number
of actually very I think important observations that were
made both on the rice and forestry protocol. But for us
at least what I'm taking note of the path in terms of
working with those stakeholders I think is relatively
clear. It's just we need some time to work through that
process and settle on specific language.

ACTING CHAIRPERSON SERNA: Very good.
With that, I'll entertain a motion.
BOARD MEMBER MITCHELL: I move adoption of the
Resolution.
BOARD MEMBER DE LA TORRE: Second.
ACTING CHAIRPERSON SERNA: It's been moved and
seconded.
All in favor?
(Unanimous aye vote.)

ACTING CHAIRPERSON SERNA: Opposed? Abstain?
Motion carries.

Before we continue, let me find out what the
pleasure of the Board is. We have a couple more items on
today's agenda. Do you want to press through? We do have
closed session. So break for lunch for -- what do you think, Ellen?

CHIEF COUNSEL PETER: The closed session can be completed in 15 minutes, depending on how many questions.

ACTING CHAIRPERSON SERNA: We'll round it up to 1:00. Gives us time to actually have some food.

With that, we stand in recess until 1:00.

(Whereupon a recess was taken from 12:10 p.m. to 1:06 p.m.)

ACTING CHAIRPERSON SERNA: I'm going to call to order the California Air Resources Board meeting for Thursday, December 18, 2014.

There was nothing to report. No action was taken in closed session.

With that, I'm going to forgo the usual eloquent preface that our Chair Nichols usually gives and ask Mr. Corey if he will introduce the item.

DEPUTY EXECUTIVE OFFICER COREY: Yes, thank you Chairman.

Before I get to the technology assessment, I wanted to touch on the sustainable freight strategy.

In January, the Board directed staff to start the development of the strategy with the goal of releasing a draft this month. Now, after extensive consultation and many -- actually hundreds of meetings, workshops with
stakeholders, we decided to modify the development which is why staff is not providing an update on the strategy today.

With all of our air quality and climate drivers, our goal is -- it's nothing short than to transform the freight sector to run with zero emissions everywhere possible and near zero emissions with renewable fuels everywhere else.

And in response, staff plans to develop an initial document over the next several months that describes ARB's vision and options towards zero or near zero emissions for each sector. It will also identify possible regulatory and voluntary levers to discuss with the Board.

So this document that we'll return to the Board with in the next few months will build on what we've been learning through the technology and fuels assessments and stakeholder input that we continue to receive.

So with that, now I'd like to transition to the technology assessment Board Item. Staff has been conducting an assessment of technologies and fuels that can provide criteria pollutant and greenhouse gas emission reductions from heavy duty motor vehicles, equipment, and vessels. To meet California's air quality standards and climate goals, we must deploy advanced mobile source
technologies and cleaner renewable fuels. Zero emission technology is fully commercialized in some applications and in pilot deployment or demonstration across multiple sectors. California can and should work to promote the development and deployment of zero and near zero emission equipment everywhere feasible and really work to achieve substantial reductions elsewhere.

So after this Board meeting, staff will be releasing a draft overview for public comment highlighting the work of the assessment so far. Over the next few months, staff will be releasing for public comment a series of sector reports for trucks, locomotives, marine, cargo handling, and aviation sources as they're completed.

So now I'd like to ask Renee Littaua of the Mobile Source Control Division to present the overview of the technology and fuel assessment work. Renee.

(Thereupon an overhead presentation was presented as follows.)

STAFF AIR POLLUTION SPECIALIST LITTAUA: Thank you, Mr. Corey.

Good afternoon, Chairman Nichols and members of the Board.

Today, I will present an overview and status update on the technology and fuels assessment. This is an informational update. And as we will be discussing, this
work is continuing.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: The presentation will discuss why we are conducting this assessment, highlight heavy-duty zero and near zero emission technologies, identify ways to maximize efficiencies from improved engine and vehicle designs and more efficient operations, and describe next steps to complete the assessment.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: California's mobile source programs have dramatically reduced emissions. Most of today's on- and off-road engines are 90 percent cleaner for NOx and PM than those produced a decade ago. Fleet rules and incentive programs have accelerated the use of these cleaner engines. ARB's programs, working in concert with air districts and industry efforts, are reducing emissions statewide and are providing focused reductions in disadvantaged communities, including a 70 percent reduction in diesel PM emissions at California's largest ports, and a 50 to 70 percent reduction in diesel PM at the highest risk rail yards.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Despite this substantial progress, more reductions are needed to
meet air quality and climate goals. Current modeling shows a 90 percent reduction in NOx will be necessary to achieve 2032 ambient ozone air quality standards in the South Coast, with substantial reductions also needed in the San Joaquin Valley and other non-attainment areas of the state.

A new federal proposal for a more health protective ozone standard will make attainment even more challenging. And while our programs are achieving substantial reductions in diesel PM exposure, risks are still high. Additional reductions are necessary to continue progress to minimize exposure to diesel PM, especially in disadvantaged communities.

Finally, an 80 percent reduction in greenhouse gas emissions is needed by 2050 to achieve our climate goals.

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STAFF AIR POLLUTION SPECIALIST LITTAUA:

Achieving these emissions reductions in all sectors will require integrated air quality and climate planning, and this is especially true in the mobile source sector. We are beginning to develop strategies to transition the mobile source sector to zero and near zero emission technologies.

Development of these strategies requires a full
understanding of these technologies. We have an established procedure for assessing technologies in the light-duty sector through the midterm review for advanced clean cars and zero emission vehicle programs. There was a need for a similar process in the heavy-duty sector, so we initiated this technology assessment.

The technology assessment we are discussing today focuses on heavy-duty vehicles and equipment. When completed, it will provide the technical foundation for current and future planning efforts, including the development of upcoming SIPs, updates to the Scoping Plan, California's integrated freight planning efforts, incentive funding plan development, and updates to the Governor's ZEV action plan.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: This technology and fuels assessment will help inform policy decisions that support technology development and bolster markets for near zero and zero emission technologies in the heavy-duty sector.

Given the wide range of engines and vehicle applications in the heavy-duty sector, achieving this transition may require several steps. In this assessment, we are evaluating not only zero and near-zero emission technologies, but also technologies like vehicle and
engine efficiencies, hybridization, and lower emission standards that provide near-term reductions and a pathway to development of zero and near-zero emission technologies.

The source categories covered in the assessment include trucks and buses, locomotives, marine, including oceangoing vessels and commercial harborcraft, off-road equipment, airport sources, including aircraft, ground support equipment, and shuttles and fuels.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Staff is developing this technology assessment in partnership with local air districts and state agencies. Staff is reviewing available reports and academic literature and consulting with a wide array of stakeholders, including engine and equipment manufacturers, fuel providers, environmental and community groups, fleet operators, and federal, state, and local governments.

Staff held workshops over three days in early September and is working to finalize sector-specific assessments.

Today's presentation provides an overview update on staff's work so far as well as preliminary observations. Staff is working to release a companion overview document of today's presentation within the next
several weeks. The detailed sector specific reports will
be released for public comment as they are completed over
the next several months.

Staff will incorporate comments and expects to
finalize the overview and sector reports in 2015. These
technology assessments will be updated periodically as
necessary to support air quality and climate planning.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: The
technology assessment focuses on several elements
including the uses of vehicles and equipment in each
sector, the current regulatory structure within the
sector, the development status and current and projected
cost of each assessed technology, emissions reduction
potential, and deployment opportunities and challenges.

Our goal is to understand not just the technology
options in each sector, but also the key factors relevant
to future policy framework development.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Staff is
evaluating multiple technologies in each sector, including
battery and fuel cell electric propulsion, very clean
combustion engines, and hybrids.

Staff is also evaluating technologies to improve
efficiency, as well as automation and communication
technologies that could increase efficiency and optimize use of current infrastructure.

Staff is also evaluating conventional, alternative, and renewable fuels, including electricity, hydrogen, natural gas, and diesel. Zero and near-zero emissions technologies achieve their greatest benefits when operated on renewable fuels. The sources of these fuels and fueling infrastructure are important to understand and consider in policy development.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: When comparing technologies for criteria pollutant emissions performance, tailpipe emissions are most important to consider.

Criteria pollutants like NOx and PM affect regional air quality and localized health risks, and the location of these emissions matter.

Greenhouse gas emissions, on the other hand, are global pollutants, and it is important to consider all emissions associated with a vehicle and fuel wherever they occur.

To compare technologies for greenhouse gas emissions performance, staff is developing fuel well to wheels life-cycle-based emission factors. These factors include both tailpipe emissions that account for vehicle
efficiencies and emissions standards and upstream emissions from fuel production and distribution.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Now moving on to zero and near-zero emission technologies.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Zero emission technologies are commercially available in some applications today where there is a business case for their use. Staff believes zero emission technologies are feasible in many heavy-duty applications, but developing these technologies is challenging. There are higher up-front costs associated with lower production volumes. These costs will decrease as production volumes increase.

Zero and near-zero emission technologies needs fueling infrastructure, and ARB will be working with other stakeholders and other government agencies to help make that happen.

While the range of today's vehicle is suitable in many applications today, ongoing efforts to extend this range will result in broader deployments in the future.

Zero-emission technologies have been generally demonstrated to have lower fuel and maintenance costs than their conventional counterparts, which improves competitiveness with conventional technology.
Demonstrations and incentives are being expanded to begin the process of moving zero-emission technologies to market in many heavy-duty applications.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Here are some examples of zero emission equipment that are commercially available today and are competing directly with conventional technology. These vehicles have been demonstrated and proven to work in their application and are being purchased where there is a business case for their use. For example, zero tailpipe emissions are particularly important for forklifts operated indoors and zero emission technologies are important at facilities with sensitive air quality impacts, including ports and airports.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Here are several examples of zero emission technologies that have recently been offered commercially. These vehicles have not yet achieved a substantial market share, but they are competing directly against conventional technologies. For example, both fuel cell and battery electric buses have been demonstrated and proven to meet the needs of their operators. And while they have higher upfront costs than conventional buses, several transit agencies are operating
these buses, which provide a full service replacement for conventional technologies in most applications.

Electric transport refrigeration units and fuel cell forklifts are both examples of zero emission technologies competing in today's marketplace. Incentives and regulations can play a major role in the continued market expansion of these technologies.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Here are several examples of zero-emission technologies that are being demonstrated in heavy-duty applications. Demonstration scale technologies have been assembled in small volumes and are being deployed to demonstrate how the technology will function in use. Zero emission drayage trucks are being demonstrated at southern California ports and zero-emission delivery trucks are being demonstrated in large companies like UPS and Fed Ex. These technologies are well suited to regional applications that are within their range and allow return to base refueling.

Other technologies show the potential for providing additional benefits. Vehicle grid integration is being demonstrated in school buses. It allows the buses not only to receive power from the grid, but also to feed power back to the grid. The bus batteries could even
help provide backup power to school districts, and the revenue from the power fed back to the grid can also help offset the incremental capital costs of the bus.

Zero-emission switcher locomotives could help reduce emissions at rail yards in disadvantaged communities. The State's continue investment in demonstration funding is critical to expanding zero-emission technologies into new heavy-duty applications.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: In some applications, the development of zero emission technologies may require several steps. Hybrid technologies can provide fuel savings and emission benefits can also provide a pathway to commercialization of zero-emission technologies.

Hybrids that provide a zero-emission miles or activity capability help to commercialize batteries and other zero-emission componentry necessary in heavy-duty applications. Using hybrid technology to capture regenerative energy, especially in off-road equipment and in on-road vocational applications can allow for downsizing the main proposal to reduction savings. Staff believes these technologies show promise in many applications.
Beyond hybrids, there are other ways to reduce emissions by electrifying non-propulsion power uses while the vehicle is parked or at berth.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Here are examples of hybrid applications, all of which could provide some zero emissions operation. The picture on the top left is a hybrid electric van, which has a pure electric range of up to 40 miles.

The locomotive battery or fuel cell tender concept, shown on the right, could be applied to locomotives for providing zero emission track miles. Current locomotives are powered by diesel electric engines, but do not provide any all-electric range because they do not have batteries. A battery or fuel cell tender might be directly connected to a locomotive to provide an all-electric range and capture energy from dynamic braking. One manufacturer has suggested an all-electric range potential of up to 150 miles, which could provide substantial emissions reductions.

Staff see the battery or fuel cell tender concept as an important technology to demonstrate through incentive funding.

The picture on the lower left is a diesel electric ferry operating in the San Francisco Bay. It
uses energy from solar, wind, grid electric, and diesel
generators to power the vessel and can operate on
propulsion batteries alone for over an hour.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Current
ARB regulations require increasing use of both vessel
shore power, as well as plug-in transport refrigeration
units. Those technologies are pictured here on the right.

On the left are technologies that can reduce
aircraft emissions while on the ground, including jet
bridge and alternative taxiing technologies. These
technologies reduce exposure to diesel PM and particulate
exhaust at large transportation and freight hubs like
ports, distribution centers, and airports.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Staff
considers technologies that provide a 90 percent reduction
in NOx, such as those certified to the lowest optional NOx
standards, and operate on renewable fuels to be near-zero
emissions technologies.

ARB and the South Coast Air Quality Management
District have initiated programs with manufacturers and
researchers to develop low emission diesel and natural gas
on-road engines.

Staff expects natural gas engines meeting these
standards will be available in the near term and that
diesel engines will eventually meet this target. These
cleaner vehicles could be made eligible for enhanced
incentive funding.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: The
transition to zero and near-zero emissions technologies
will take time to accomplish. And while these
technologies continue to develop, staff see near-term
opportunities for reducing emission from conventional
technologies, as we shared with the Board in October in
Diamond Bar.

Improving existing testing and certification
requirements is a priority. Improvements in certification
test cycles not to exceed requirements, durability
requirements, and warrantee periods could all help ensure
in-use emission reductions.

Enhanced inspection and maintenance programs
present another opportunity to achieve in-use emission
benefits, especially for particulate matter and especially
in disadvantaged communities.

Finally, in the off-road, rail, and marine
sectors, some of the off-road engines meet certification
requirements without using aftertreatment. In these
applications, lower and broader certification standards
could effectively require use of aftertreatment and achieve lower in-use emissions.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Zero and near-zero emission technologies achieve their greatest benefits when operated on renewable fuels. These fuels are being encouraged through the low carbon fuel standard, the renewable portfolio standard, and SB 1505, which requires 33 percent of hydrogen to come from renewable sources.

Wind and solar and some other sources of renewable energy vary by time of day and time of year. So there is increasing interest in ways to store that renewable energy to better match supply with peak demand. Vehicle-grid integration and power-to-gas technologies provide a mechanism to store renewable energy when it is generated and to deliver it when it is needed.

These technologies are powerful tools, creating synergies between the electrical grid and zero and near-zero emission vehicles. They help balance electricity supply and demand and increase the value of the vehicles that operate on electricity, hydrogen, and synthetic methane.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Staff
also looked at ways to reduce emissions by maximizing efficiencies.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: Vehicle and engine technologies can provide 40 percent or more reduction in greenhouse gas emissions in most heavy-duty sectors. The technologies with the potential to provide these reductions vary by equipment type. In vocational and off-road applications, hybrid and shore power type technologies show promise. Whereas, in long-haul trucking and shipping operations, technology that improve engine and vehicle efficiencies, including aerodynamics, Cummins Peterbilt can provide substantial benefits. For example, the Cummins Peterbilt truck shown here has achieved a doubling of fuel economy in long-haul applications.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: While the super trucks are one of a kind prototypes, the truck and engine manufacturers are applying many of the lessons learned to assembly line new truck production. This slide shows some of the efficiency improving technologies being used in today's newer trucks. Many of these technologies will be integrated into trucks meeting future Phase 2 standards.

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Oceangoing vessels are another great example of how technologies can improve efficiency. Improved combustion technologies, engine controls, waste heat recovery, and advanced lubrication can improve engine efficiency. These engines may operate on diesel, natural gas, or in dual fuel applications.

Advanced fuel propeller designs and improved paints, coatings, and air lubrication systems reduce friction, allowing the vessel to move through water with less energy expended.

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Technologies are improving both aircraft efficiency and reducing emissions. Advanced engine technologies are being developed that provide better fuel economy and reduce NOx. Aircraft designs are improving, reducing weight and improving aerodynamics. Fuel cell auxiliary power units could replace conventional combustion auxiliary power units.

Finally, biofuels are being demonstrated in commercial and military applications, including operations at LAX. The combination of improved aircraft designs, lower criteria pollutant emissions, and biofuels can provide substantial emissions reductions to support air
quality and climate goals.

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STAFF AIR POLLUTION SPECIALIST LITTAUA:
Connected vehicles, automated vehicles, intelligent transportation systems are all technologies with the potential to provide more efficient trips and routes, smoother driving cycles, and improved safety through applications like collision avoidance and anti-lock braking. These technologies provide opportunities in the future for lighter vehicles and smaller engines.

A couple of examples of current applications covered in the technology and fuels assessment include terminal automation at distribution centers, warehouses, and port terminals, platooning, shown here in the picture which reduces drag and improves fuel economy for both trailing vehicles and the lead vehicle.

Vehicle to vehicle and vehicle to infrastructure communication technologies can enable both smoother driving conditions which reduce emissions and reduce travel times, which allows for more efficient use of existing infrastructure.

These technologies are also applicable to off-road applications like construction and agriculture where automation technologies can reduce the amount of work and therefore emissions necessary to complete a
STAFF AIR POLLUTION SPECIALIST LITTAUA: And now preliminary observations and next steps.

STAFF AIR POLLUTION SPECIALIST LITTAUA: As our technology assessment continues to gel, we believe zero and near-zero emission technologies can be effective in most heavy-duty applications. Some are commercially available today, while others are being developed through demonstrations.

In applications where zero emission technologies may not currently meet performance requirements, pathway technologies can be encouraged that move technologies towards zero emissions, while providing substantial reductions today.

Our assessment suggests there are many vehicle engine and operational improvements that could dramatically reduce greenhouse gas and criteria pollutant emissions. These technologies should be encouraged.

Finally, meeting climate goals will require renewable fuels and strategies to increase available volumes of these fuels are underway. As important, vehicle-grid integration and power to gas technologies suggest that synergistic relationship between renewable
electricity on the grid, electricity supply and demand management, and zero and near-zero technologies in the light and heavy-duty mobile source sector.

Zero and near-zero vehicles will be a key component of achieving greenhouse gas reduction targets not just in transportation, but in the broader energy sector.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: As we stated early in this presentation, we are beginning the process of developing new strategies and approaches to transition the mobile sector to zero and near-zero emission technologies. Advanced technology cost and performance need to be considered in the context of our air quality and climate goals, fleet operations, and economics.

Incentives and regulatory approaches will play a major role in these new strategies by supporting technology demonstrations and reducing upfront capital costs.

Regulations will also play an important role. For example, ARB's ZEV mandate and zero emission bus rule are leading the development of battery and fuel cell technologies. ARB and EPA's regulation of heavy-duty vehicle efficiency is leading to the development of
technologies that have the potential to dramatically increase heavy-duty truck freight efficiency.

Our assessment shows that deployment of zero and near-zero heavy duty vehicles and equipment, fueling infrastructure, and renewable fuels are all inter-related. An integrated and multi-fueling plan approach is needed to ensure infrastructure is available to support newly deployed technologies. To capitalize on the benefits of vehicle grid integration and to assure incentive dollars are invested to provide emissions reductions consistent with the State's long-term vision to achieve climate, air quality, and public health goals.

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STAFF AIR POLLUTION SPECIALIST LITTAUA: This technology assessment is being developed through a public process. We anticipate releasing an overview document for public comment in late December or early January. Sector-specific draft documents will be released for public comment early next year. We will work to finalize the overview and these draft documents in 2015 based on comments received and additional information. Results from these assessments will be integrated into upcoming planning efforts.

This concludes my presentation.

ACTING CHAIRPERSON SERNA: Thank you, Renee.
Mr. Gioia.

BOARD MEMBER GIOIA: Just a question. This obviously ties in very well with the freight strategy and just trying to understand the alignment of the time frame. As you point out in this presentation, this work is really designed to inform the policy discussion in other areas, including freight. So can you be a little more specific about some of the time frame and how you anticipate utilizing the work product here with our freight strategy issues?

TRANSPORTATION AND TOXICS DIVISION CHIEF MARVIN: Certainly. What we expect is that the staff that are working hard on the technology assessments will be simultaneously doing the detailed write-ups and supporting the internal discussions about these options that we see to move towards zero and near-zero emissions. So we believe that we can get a draft vision document on this out in the spring time frame probably about March, and then we are suggesting returning to the Board for a discussion of that document in April.

ACTING CHAIRPERSON SERNA: Any other questions of staff before we hear from our witnesses?

We'll have time for questions after the speakers. We have a list of 18 speakers, as you can see from the projector on the wall there. I'm going to respectfully
ask speakers to be aware of our three-minute limit. First up is Henry Hogo.

MR. HOGO: Good afternoon, Supervisor Serna and members of the Board.

For the record, I'm Henry Hogo, Assistant Deputy Executive Officer at the South Coast Air Quality Management District.

First, I'd like to thank staff for working closely with the South Coast AQMD staff in the technology assessments. We appreciate the staff's efforts to keep us informed on the progress throughout this effort and input from the air districts.

The technology assessments conducted are the most detailed and comprehensive to date. We believe the assessments will provide a strong foundation for the development of the sustainable freight strategy and the next round of matches needed for the upcoming 2016 SIP development.

As the assessments indicate, there are many advanced technologies that are currently being demonstrated and early commercialization is critical for the South Coast region to meet federal ozone air quality standards by not only 2032, but by 2023.

With only eight years to attain the federal ozone standards in 2023, there is a need to develop actions in
parallel to the completion of the technology assessments and sustainable freight strategies. These actions will send strong market signals to technology providers and engine manufacturers and provide certainty for end users as they replace their legacy vehicles.

We have provided formal comments on the need for early actions to staff and appreciate the recognition for such actions in the draft overview that was given today. We believe that there are additional avenues to pursue for early actions and look forward to working with your staff to completing the technology assessments and development of the sustainable freight strategy.

The sustainable freight strategy will set the tone for the future of sustainable freight movement. As such, it needs to be as aggressive as possible, recognizing the need to meet federal air quality standards and climate change goals and a vibrant economy.

And thank you for providing the opportunity to comment. I'll be happy to answer any questions.

ACTING CHAIRPERSON SERNA: Thank you, Henry. Chris Shimoda. And following Chris will be Angelo Logan.

MR. SHIMODA: Chris Shimoda, California Trucking Association.

I'd like to first thank ARB staff for their work
on these tech assessments and for acknowledging the major reductions made by the trucking industry to date. Thank you very much for that.

The CTA submitted some joint comments with the American Trucking Association on the tech assessments back in October for the record. But I'd like to simplify the message a bit here today. As seen in the slides, tomorrow's zero emission trucks will cost much more and do much less than today's diesel truck. That's going to be a major challenge.

While we're in the very early demo and prototype stages with several different zero and zero-emission approaches, we've yet to determine how these technologies will ultimately be viable or marketable for manufacturers, fuel suppliers, and the financing entities that the trucking industry relies on or the viability for the over 90 percent of the trucking market made up of small businesses. And ultimately whether or not getting those remaining emission reductions will be cost effective, how we're going to get that.

That being said, the CTA has supported multiple pieces of legislation in the past few sessions to secure funding for pilot projects of these advanced technologies and will continue working with along with other stakeholders to find fleet participants for these
demonstrations.

Completing the desired transformation is going to be a monumental undertaking. I think the Board understands that. A collaborative approach with the industry will be a key part of reaching these air quality goals, be they the criteria pollutant or the greenhouse gas reduction targets currently being discussed.

So we hope to continue working in this collaborative spirit with ARB. And thank you very much to the Board for the time today.

ACTING CHAIRPERSON SERNA: Angelo Logan. And following Mr. Logan will be Taylor Thomas.

MR. LOGAN: Hello, members of the Board. My name is Angelo Logan with East Yard Communities for Environmental Justice. Also here with the California Clean Air Freight Coalition.

Today, I'd like to comment specifically on the sustainable freight strategy related to this particular item. First, I just want to applaud and thank you and your staff for recognizing the importance of this issue and working hard to address it through this particular strategy.

Saying that, I think that it's really important to focus on some long-term and short-term strategies for addressing both the long-term zero-emission priorities but
also the localized hot spot impacts, such as rail yards
and others that have very localized hot spot impacts so
that there is near-term strategies as well as long-term
zero-emission strategies.

One of the things that I'm worried about
personally is that we are moving into an effort to make
this strategy more robust and working with other folks,
other agencies and whatnot. I think that's smart.

But the one thing that makes me nervous is that
this year effort turns into two, three, four, five years
down the road and we see very little progress.

So to that end, I'd like to recommend that the
Board and staff commit to a very specific time line that
lays out how we're going to accomplish specific goals,
near-term and long-term goals.

And with that, I want to thank you and also offer
our aid in working with you and your staff as we move
along with this project. Thank you.

ACTING CHAIRPERSON SERNA: Taylor Thomas. And
then Laura Baker.

MS. THOMAS: Good afternoon, honorable Board and
staff.

My name is Taylor Thomas. I'm with East Yard
Communities for Environmental Justice. And I'm a resident
of Long Beach. And this is my first time speaking here.
So please be gentle.

First, I want to praise the Board and the staff for all of your hard work towards a sustainable freight strategy. This is a positive move forward and a wonderful opportunity for you to be leaders in the nation.

I'll tell you a little bit about myself. I grew up near the I-710 freeway, Pacific Coast Highway, and the ICTF railyard. I was diagnosed with asthma at the age of seven as a result of living next to these pollution sources. Many people in my community also live with illnesses, such as asthma and cardiovascular disease. We experience high rates of cancer and asthma as well.

Earlier this year, when I moved into downtown Long Beach, I thought I had escaped this toxic soup. But I now live within a mile of the port of Long Beach. And as evidenced by the black dust that constantly coats my windowsills, I'm still in the middle of that toxic soup.

So I'm telling you all of this because I want to stress the importance and urgency of moving the strategy forward and moving expeditiously. There is a health crisis in my community, and the people living there are counting on you to address this as soon as possible.

Thank you.

ACTING CHAIRPERSON SERNA: Thank you.

Laura Baker.
MS. BAKER: Good morning. My name is Laura Baker. I'm with the Coalition for Clean Air. And I coordinate the California Clean Air Freight Coalition, of which you've already heard a few of our members speak today. And you'll hear several more. We're here with a group of 25 nonprofits of environmental, environmental justice, health, and science-based groups from around the entire state that are both impacted by and focused on the goods movement sector, which will be the focus of the statewide sustainable freight plan here.

So having spent the past year actively engaging with ARB staff in this process which the technology assessments will inform, we hoped that we'd have a draft today that we could comment on, which is why so many of us are here.

And you know, I think I'll let our able members address their specific early action measures that they see as necessary and specific hot spots that need to be addressed in that strategy. But what I hope you get a sense of above all else is just the mixed feelings that this shift in time line has evoked, both from support for an integrated approach, dismay at another delay, frustration for lack of specific enforceable commitments made to date, and also optimism that a future we all envision is still possible, a future where it's safe to
breathe near ports, rail yards, warehouses, and highways.

So we appreciate the Board's continued commitment to this goal, staff's dedication to moving forward, and we hope for a swifter progress moving us all forward in the coming months. Thank you.

ACTING CHAIRPERSON SERNA: Thank you.

Diane Bailey. Following Ms. Bailey will be Don Anair.

MS. BAILEY: Good afternoon, members of the Board and staff.

My name is Diane Bailey. I'm a scientist with the Natural Resources Defense Council and I'm also happy to be here with the California Clean Air Freight Coalition, which includes several dozen other groups from around the state. We're all working towards cleaning up the freight system and not making it more sustainable, but really moving our freight system off of dirty, polluting, and harmful fossil fuels.

I want to talk to you a little more about envisioning a post fossil fuel freight system today. Before I get into that, I just want to note that we strongly support the development of the sustainable freight strategy. It's imperative that we move forward with the sense of urgency to develop this plan. We're very grateful for all of the hard work that staff have put
into this plan and that's evident to date. They've done a
diligent job meeting with stakeholders and exploring all
of the new technologies, and we're area grateful for that.

We also strongly support moving forward with
early action measures in 2015. And we see that in the
overview supplied here today. That was one of the
commitments made in the Resolution adopted last January
that launched this process. We hope to see that move
forward as quickly as possible. Laura has noted the
delays and the frustration, but I know you all are working
hard.

So a couple notes on fossil fuels and why I'm
asking you to envision a post-fossil fuel freight system.
Fossil fuels are profoundly damaging in every step of the
way. From the time that they are mined or fracked or
pumped out of the ground to when they are transported and
we see the dangerous transport with the exploding cruel
oil trains over the past few years that have raised a lot
of concern. Fossil fuels are profoundly damaging when
they hit refineries. Fence line refinery communities have
long suffered from elevated cancer rates, asthma, and a
long list of other health impacts. And this continues
today with our freight system very dependant on fossil
fuels.

And finally in the context of freight movement,
communities surrounding freight hubs suffer much higher asthma rates and virtually the same health impacts of the refinery fence line communities. And although we've seen tremendous progress in reducing diesel pollution around the state, there are a lot of toxic hot spots that persist. And we really need to pay a lot of attention to those hot pots and to directing early action measures to provide relief to those hot spots.

I hope we will move with certainty and speed in the coming months to develop those early action measures to document these health impacts I'm talking about. Back in 2006, there was a wonderful health impact assessment that really put a fine point on the toll of the freight industry and pollution, and we really need renewed updated health impact assessment.

So I'm asking you as an agency to embrace a post-fossil fuel freight system as a goal as we move forward with the sustainable freight initiative. And we look forward to working with staff. Thank you very much.

ACTING CHAIRPERSON SERNA: Thank you.

Don Anair. Following Mr. Anair will be Jerilyn Lopez Mendoza.

MR. ANAIR: Good afternoon. My name is Don Anair, Research and Deputy Director of the Vehicles Program at the Union of Concerned Scientists.
Just a couple of brief comments today. I wanted to obviously thank the staff for their hard work in developing this technology assessment and looking forward to seeing the overview that will be released later today and the detailed sectorial assessments in the coming months.

Obviously, this is a critical step in developing the most robust strategies around freight and other sources, getting a really clear assessment of what's happening with technology today.

Echoing one of Diane's comments about the health assessment, I think that's another key piece of the puzzle that we need to have as soon as possible. We are hearing a lot of great news coming out of studies and measurements around the ports and other areas that are validating the work that the Board has done over the more than past decade on reducing diesel emissions. And that's very positive news. But I think it's really important to really understand what the health impacts are today. And we know that we need to go further, but we need to have that quantified in a way that will help inform the development of strategies going forward.

In the staff presentation, I was encouraged to hear the approach looking at the need for incentives, regulatory measures that both address advancing advanced
technology, zero-emission vehicle technologies, as well as technologies that can improve conventional vehicles. And I think this Board has proven the success of that multi-prong approach with light-duty vehicles and the success of the zero-emission vehicle program and the greenhouse gas standards, which are driving conventional technologies to be cleaner as well.

And I think the most near-term action on trucks, which this Board could help influence and be a part of, is the soon to be proposed federal greenhouse gas emissions standards for heavy-duty trucks and achieving a 40 percent emission reduction by 2025 with new trucks.

Finally, the last thing I want to mention and show to the Board is that USC is part of the California Clean Air Freight Coalition, and we've recently worked with our partners, the American Lung Association, Environmental Health Coalition, Regional Asthma Management Prevention, Comite Civico Del Valle, and organized the petition to support the effort to reduce emissions from the freight system. And we got over 5,000 signatures here supporting your efforts to basically have a very robust sustainable freight strategy that includes enforceable measures to clean up the air related to freight emissions.

So I wanted to give that -- I'll hand that to the Clerk so that you have it all. But I wanted to make sure
that you were aware of that. But it's not just a few of
us here speaking today, but thousands of Californians.

ACTING CHAIRPERSON SERNA: Thank you. We might
have a question here.

BOARD MEMBER SPERLING: Actually, it's a
recommendation to you, turning the tables. You know, we
just listened to you and Diane Bailey. You both represent
very large, influential, national organizations. I think
the real key for all these technologies that we're talking
about is scale. We need to get a lot because we're
talking about a lot of different types of vehicles and
technologies and California can't afford to go it alone.
There has to be a more demand, more market, bring the cost
down.

So my suggestion to you and NRDC and other
organizations is to help work with other companies and
governments to start increasing a demand in the
consumption of these technologies. I think here in
California we'll certainly take a lead. But this is a
case where scale counts for a lot. So that's my -- and
that's taken, you know, acknowledging what Chris from CTA
said. He's right that it's expensive. So we need really
to stay focused. So that's my suggestion to you.

MR. ANAIR: Thank you for the suggestion.

ACTING CHAIRPERSON SERNA: Thank you.
MS. LOPEZ MENDOZA: Good afternoon. Jerilyn Lopez Mendoza of SoCal Gas or Southern California Gas Company here to express my excitement about the technology assessments moving forward. We have been interacting a great deal with staff on the technology assessments, particularly as it relates to the natural gas industry. There's been a lot of questions factually about how the natural gas industry moves natural gas, how it's produced, how it's distributed, and what emissions may come from such operations.

And I want to thank the staff for engaging us and really doing a deep dive into our industry to find out the answers to these very complex and very difficult questions. So specifically I'm going to call out Todd Sax, who has really been instrumental in terms of bringing folks together and having the difficult conversations. Because even as you hear today from different stakeholders, from your own team, there's conflicts about the use of natural gas moving forward. It has been instrumental in terms of reducing criteria pollutants in a variety of uses. But moving forward, there's concern about greenhouse gas emissions. Putting it out there. We all know it. So we're aware of it. We're looking at ways to reduce greenhouse gas emissions, decarbonizing the
pipeline. You heard your staff refer to power to gas, which would produce synthetic methane from renewable sources, excess renewable sources, as well as the use of renewable natural gas. SoCal gas is very interested in pursuing all of those options. We see the future and where it's going, and we want to be part of it.

So I just wanted to commend staff and all their hard work. They've been working really hard. They've been taking a lot of tough questions from a lot of folks. Really appreciate their openness. And we look forward to continuing to work with you as we move forward with the sustainable freight strategy and the finalization of the sector technology assessments. And happy holidays to everyone.

ACTING CHAIRPERSON SERNA: Thank you. You, too.

Joy Williams.

MS. WILLIAMS: Good afternoon. I'm Joy Williams. I'm here representing Environmental Health Coalition, which is a nonprofit environmental health and justice organization in the San Diego Tijuana region. We're also a member organization of the California Clean Air Freight Coalition. We work in a number of the most freight impacted communities in the San Diego region, including the port side communities of Barrio Logan and National City, traffic-impacted communities such as City Heights,
and border communities such as San Ysidro. I'm here in favor of this sustainable freight strategy moving forward with some concern about the delays.

EHC supports an ambitious sustainable freight strategy, and we recognize the need to do this as a robust multi-agency overhauls of the freight system. We applaud the goals stated today of zero emissions and welcome the effort to bring other agencies in the process. All this will take more time than was initially planned for the sustainable freight strategy, and we acknowledge the value of taking more time.

However, in the interim, we urge ARB to continue to work on the shorter term actions for which we previously advocated, such as a facility-based strategy. San Diego is one example. The port is currently in the process of expanding both of its cargo terminals with the goal of bringing in more cargo thru-put. They are also hiring a new Executive Director who will have as its major charge to increase the revenue from maritime operations.

Expansions and cargo thru-put should be happening in lock step with plans to move to cleaner technologies. And yet, our port is approaching each increase in capacity on a case by case basis rather than a facility-wide strategy to shift to cleaner technologies and fuels.

We call on ARB to take the action listed in the
January 2014 Resolution to begin development of broad principles and criteria for new and expanded freight facilities as a tool for local land use decision makers and community residents. Further development of land use guidance is another urgent near-term measure which can include early actions to address hot spot communities, such as buffers, vegetative barriers, air filtration, and restricted truck routes.

Regarding technology development we're interested in options for reducing emissions from the car carrier ships that berth at the National City terminal. One in every ten imported cars on the road comes in through National City. And we know it's not cost effective to shore power those types of ships. So we see a need for other technology options or regulatory requirements to offset those emissions.

We look forward to seeing the initial document, and we're pleased to note it will include regulatory levers and will have a zero-emission freight system as its goal.

We thank you for that. Thank you for the opportunity to speak today and for the serious and sustained attention ARB is giving to development of California's freight system.

ACTING CHAIRPERSON SERNA: Thank you.
Thomas Helme. Following Mr. Helme will be Tim Carmichael.

MR. HELME: Hello. Thank you for having me today and allowing me to speak.

Like I said, my name is Tom Helme. I'm a member of an all-volunteer nonprofit in Modesto called Valley Improvement Projects and also a part of the California Clean Air Freight Coalition.

I know what a huge task this is, and I want to thank everybody for all your hard work that you've been putting into the sustainable freight strategy. Coming from Modesto, pretty working class area, I have been involved in many debates between cleaning up our environment and having room for job growth in the area. I have arguments with my friends that are truck drivers and myself, grew up in the middle of an almond, walnut orchard in Hughson, and so I know about the area, the culture of the area and what challenges there are.

So I just wanted to say that I'm very happy that you guys are taking this on. There was a little disappointment to hear that there's going to be some delaying in putting out some of the plans. It's very understandable. But something I have learned in just the last couple years of being involved in this type of advocacy is the weight that sometimes we feel that
industry may have when influencing decision makers as compared to just regular people.

I'm not an expert on a lot of the subjects that you've already heard about today. What I can tell you, I grew up in the Central Valley in Stanislaus County. When I was about 13, I was starting to develop acute asthma problems. About that time, my family moved up to Mendocino County and I spent about eleven years living up in that area. And basically my breathing problems had gone away. I moved back down here or in Modesto in about 2006, 2007. Fortunately, I haven't had these health problems come back or anything. But I was working -- I graduated with a journalism degree from Humboldt State. Wanted to move back to Modesto. Had a moderately good job as a radio DJ and a promotions director. And I basically gave all that up because I wanted to spend more time helping the community rather than being an on-air personality.

So I started substitute teaching as a way to get involved and still have a job. And while working in a lot of small schools on the west side of the county, I noticed how a lot of the classrooms had the lists of kids with asthma in the class. Kids that when we went out to do PE, you have to keep a special eye on them. Don't make them run as much. And just started to ask -- that was quick.
Just started to ask why that was. And that led me into kind of the path that I'm now in helping with CCFC.

And just wanted to advocate for the people who are out there breathing the air from the two highways, from the pesticides, from the one of three incinerators in California now with the building of these huge distribution centers with trucks coming in and out. And I just wanted to say thank you again for all of your work. Please keep it up. Please keep in mind the people that are living in those areas, with that, moving forward and more enforcement. I'll put that out there.

ACTING CHAIRPERSON SERNA: Thank you.

MR. HELME: Thank you. Sorry I went over.

ACTING CHAIRPERSON SERNA: Tim Carmichael. I'm going to apologize in advance. Following Mr. Carmichael will be Wafaa Aborashed.

MR. CARMICHAEL: Good afternoon, Supervisor Serna, members of the Board. Tim Carmichael with the California Natural Gas Vehicle Coalition.

First let me say this is a great effort that the staff is taking on. It is really a challenging scope that they have set out to do these tech assessments. Just the slide presentations were dozens and dozens of pages at the workshops, because it's so much information that they have been going through and assessing.
I wanted to make two -- just a couple comments. One on a slide that's in the presentation you saw today and a couple points that weren't in that presentation. The first is on the prospect for low NOx engines, especially natural gas heavy-duty truck low NOx engines. I'm personally and my members are very hopeful about this prospect in the near term, but not quite as hopeful as the staff. What we're hearing from the engine manufacturers are we're going to see some of those engines in 2017 and more in 2018 and 2019. So definitely within the bounds of what the staff's slide said, but not -- we don't think on the front end of that in this 2015 or 2016. There is a lot of work going into developing those engines, and we do believe they're coming this decade. But towards the end of this decade.

Two points that I want to make about information that came out in the workshops that was not included today. I assume it's coming. But I want to flag it because based on the conversation earlier, you may be called upon to make some decisions on incentives or other programs before these tech assessments are finalized.

Two issues. One, the Air Resources Board, along with other agencies, South Coast AQMD and others, supported in-use truck testing looking at trucks in the field. Most of the testing has been done is on the bench.
But in-use truck testing or in-use vehicle testing is very valuable. What they found was the diesel trucks and the hybrid trucks are emitting more than anticipated in the field, and the natural gas trucks are emitting less than anticipated in the field. That's significant and something to pay attention to going forward as you're thinking about what this agency needs to be supporting.

The second point is there were slides showing the timelines for the development phase of various technologies. Again, focusing on heavy duty trucks and heavier. And the staff's findings, at least initial findings, were for hybrids, for battery electrics, for fuel cells. We're looking at demonstration vehicles for at least 2030, 2035. So many more years where there is a lot of work to be done to develop those vehicles to make them commercially viable.

Obviously, there's opportunities to act before 2035. And the seed I want to plant is natural gas trucks, supporting natural gas trucks in the near-term supports the pathway to lower NOx engines for trucks and to renewable natural gas, which is one of the lowest carbon fuels the Air Board has identified.

Thank you very much for your time. And happy holidays.

ACTING CHAIRPERSON SERNA: Thank you.
Mr. Aborashed, and then next will be Jesse Marquez.

MS. ABORASHED: Good afternoon. My name is Wafaa Aborashed. I'm with the Bay Air Healthy 880 Communities and CCFC.

ACTING CHAIRPERSON SERNA: How do you pronounce your last name?

MS. ABORASHED: Aborashed. It's difficult, I know.

So I'm really happy to be here. And I'm very proud of the fact that in the last ten years we actually moved maybe four feet or five feet. We still have a long way to go to make sure that our fence line communities are healthy.

I would like to echo Diane Bailey's message to you. And I hope that you really look at those opportunities that we, as environmentalists, have been trying to help you get to where you are today. Ten years is a long time, and I hope that I don't have to wait ten more years to really have some healthy children in our neighborhood.

I want to make sure that we talk about the aviation industry. You've had a study that came from LAX, and it told you exactly what the health impacts are. Just the beginning of what we can actually look at the health
impacts that are impacting the fence line community specifically.

Sure, LAX did the study. But in the Bay Area, we have three international airports. So whatever you get out of LAX times three, that's what's happening here in the Bay Area. So I live on the fence line community here. I grew up on the airport. My father had a flight school there. So I'm very passion at aviation. But when it comes to the goods movement and having this aviation in there, we need to look at the impacts that are coming from these airports times three.

So at this point, I feel like, you know, we need more understanding specifically in San Leandro. We have a Highway 880 that has gridlocks three or four times a day. We are getting it from the aviation, from the freeways, from the trucks, all of that is happening in our area along the 880 corridor.

So I'd like you to look at the aviation industry and see how much we can minimize the impact. We did the goods movement. We know where the trucks are getting on the right pace right now. You still have more that you have to do. So right now, having you look at the aviation industry is what I'm asking you to do. Thank you very much.

ACTING CHAIRPERSON SERNA: Thank you.
Mr. Marquez. And following Mr. Marquez will be Cynthia Cory.

MR. MARQUEZ: Good afternoon. Thank you for the opportunity.

I'm Executive Director for the Coalition of a Safe Environmental. And also a member of the California Clean Freight Coalition, California Communities Against Toxics, and the Sierra Club Harbor Vision Task Force.

We are one of the leading environmental justice organizations researching and specializing in alternative technologies. And those are the things I'm going to focus on right now. Things that I'm going to mention are things that your staff are not looking at, that we request that they be included.

For example, what we seen so far failed to include alternative technologies to capture ship oceangoing vessel emissions. AMEX technology, advanced maritime emissions control technology, which is a color flyer I passed out that you all have, has already been tested on over 50 ships at the port of Long Beach. It has passed every CARB test protocol to date and there's only one more left to go.

Yet, it's not being recommended in any EIR by any port in the United States. It's been tested for six years now, and we ask that this be included. They all also have
a sister technology called ALEX, advanced locomotive emissions control system that has also been tested, but yet BNSF railroad and UP are not utilizing this technology, and they're not including it in any of their future projects and expansions.

Whenever you reference NOx PM reductions at the port, you must make it relevant to the public and the decision makers. Stating there's been a reduction is one thing. You have to state the truth, too. It's based on a 2000 year base line. 1999, 1998, and every year before that are still polluted. And then just because there is improvement in that category of air, remember we're only talking PM2.5 and PM10. You have not conducted any health impact assessment to show that there's been an improvement in public health. There is no document right now that exists that shows there is correlation proving that those reductions are improving public health. And HIA is the only assessment tool that can do that. The health assessment cannot do that.

Also not included in your report are zero emission freight transportation trains. Specifically, like a Maglev train. There are three companies in the United States who already have test demonstration tracks. Yet, that's not included. One of the companies, American Maglev Technologies, have offered to build a demonstration
track free at no cost to the Port of L.A. or Port of Long Beach or to the public, yet they have refused to allow it to happen. We asked that ARB step in. And when there are offers of demonstration projects such as that, that then you oversee that demonstration project. It does not have to be done at a port because those container storage yards that are off port property where it can be still applied and tested. So we ask that you do do that.

We have another problem in that CARB -- ports say, oh, a technology has not been certified. Vision Motor Corp. classic drayage truck was certified by CARB for sale in the state of California. Yet, the Port of L.A. and Port of Long Beach refused to include or even mention it in their environmental impact reports. We need you to intervene and say ones it's been certified by CARB, yes, it's Mandatory for you to include it.

ACTING CHAIRPERSON SERNA: Thank you.

Cynthia Cory.

MS. CORY: Supervisor Serna and members, Cynthia Cory, California Farm Bureau.

Good afternoon. I just want to take a few minutes. I first want to thank Heather Arias for reaching out to ag earlier this year and kind of approaching us about the sustainable freight initiative and our discussions. I was kind of surprised in September when
the concept paper came out and saw a little bit more
detail. There is a lot of things that seem feasible but a
lot of things that are very concerning.

I know today we're talking about the technology
assessment and the things that will be -- that we're doing
the assessment so they'll fit into the initiative. And
you've heard many folks here speaking about wanting to
move faster. I might be speaking from a different voice,
and I'm just saying take time, be deliberate, and do a
full analysis.

I think we all know that while we think about
what we're talking about here being just ports and rail
yards, I want -- and I know you know, especially the folks
from the valley that you don't get all of our wonderful
agricultural products off the farms and ranches onto your
plates without freight and without facilities. Our
almonds, our blackberries, our wine, our cheese, all those
things we all love and enjoy need freight and they need
facilities.

So while we might be thinking of ports and just
rail yards and large distribution centers, Heather would
not have reached out unless we're area a part of this. I
ask you to be deliberate and careful. We all lived
through the truck rule. You voted on it many, many times.
And let's just not have to relive that. Thanks very much.
ACTING CHAIRPERSON SERNA: Thank you.
Bill Magavern. Following Mr. Magavern will be Sean Edgar.

MR. MAGAVERN: Good afternoon, Board members. Bill Magavern with the Coalition for Clean Air and the California Clean Air Freight Coalition.
I thought the staff report was accurate. And we appreciate the outreach the staff have done, especially to the communities most effected by freight transport. We know that the burdens of freight transport are not distributed equally. They fall very heavily on certain communities that are almost all low income communities of color.

We also know from the work that ARB and the air districts have done on the vision for clean air that in order to reach not only our greenhouse gas emission targets, but the air quality standards, we need to get our freight system through a very major transformation to zero emission and near-zero emission equipment. And we know that will be quite a challenge.

And this Board took an important step in January by deciding to launch the sustainable freight strategy. A lot of work has been done since then. But a lot more needs to be done. And it really needs to come not just from ARB, but from the administration as a whole and to
include the transportation agency and CalTrans and the Energy Commission and Go Biz. And so we understand the need for more integrated effort here.

We at Coalition for Clean Air are aware of a number of small businesses, many of them home grown California companies that are working on technology that can reduce air pollution and greenhouse gas emissions developing, purchasing, and operating these technologies. And a lot of the people who own and work at these businesses are taking big financial risks because they're working on cutting edge technology. And we know them to be personally and professionally dedicated to success. And this is where your role is really important because through adopting regulations and SIP commitments, incentive funding and policy plans, ARB and the other agencies will play a key role in determining whether these businesses succeed and whether our most polluted communities will have healthy air to breathe.

We know that zero and near-zero emission freight technologies are evolving quickly. And with the right support, advancements will continue and future developments can assure that we'll be able to handle the demands of nearly every step of the logistics, supply, and distribution network with these advanced clean technologies.
Finally, I want to emphasize the importance of looking not just to the long term, but short term measures, early action measures that will help to reduce emissions very much including increased enforcement and strong inspections and maintenance programs. And let’s not forget those vehicles in the 8,000 to 15,000 pound category when we adopt those measures. Thank you very much.

ACTING CHAIRPERSON SERNA: Thank you.

Sean Edgar. And following Mr. Edgar will be Peter Okurowski.

MR. EDGAR: Supervisor Serna and Board members, I'm Sean Edgar, the Director of Cleanfleets.net. To borrow one of my favorite analogies baseball, it's déjà vu all over again. Fourteen years ago when I first came in front of the Board, the topic was the diesel risk reduction plan. This effort that you're embarking upon that staff has been very open and accessible to us feels a lot like the development of that plan.

I was pleased to be involved in the truck and bus regulation planning phase. We went through several hearings about the last eight years, and now we're in the implementation phase. So I have a few process comments, but a few things I wouldn't want to lose sight of. First of all, many fleets are struggling right now to implement
the truck and bus regulation. And obviously, that's going
to take long-term investments from them. They're making
decision as to the fuels that they'll be able to use based
on their needs. And we know that advanced technologies
significantly more expensive than the last trucks. So
some folks are just grappling with those decisions. And
we know that any major change is going to require a major
planning effort and also access to capital and the economy
will continue to guide that.

Having said that, a couple process-related
things. I'd like to give credit where credit is due to
your staff. We initially -- our group of member
companies, about 300 fleets running over 200,000 natural
gas vehicles. There is a little bit of concern we are
going to leap frog natural gas and go into batteries for
heavy-duty trucks. And we expressed that to staff and
staff clarified several things for us to our satisfaction.
So we're grateful to hear several times in today's
presentation that these advanced technologies really has
to be a business case for it and we also need a multi-fuel
approach. So we're grateful to hear that. Thank you very
much for staff for that.

We're also grateful to hear about fueling
infrastructure and realizing incentivizing may be needed
for that. Natural gas vehicles, it's a very heavy
investment. And there is nothing really to offset the
increased truck right now. There's some intermittent
incentives from the Energy Commission, and federally
there's discussion of some new incentives that are just
coming.

But most of the vehicles that have been purchased
over the last four or five years since the federal tax
credit disappeared have been done with the operators
stepping to the plate with an additional 30 to $50,000 on
top of what the diesel truck costs would have been.

So advanced technologies is going to take
advanced planning, and it's going to take a significant
amount of capital. And I was grateful for staff to
realize there has to be a business case for the operators
of these cleaner vehicles. The folks that we work for
that operate 2,000 natural gas vehicles have cut their
teeth on a lot of the technology inspection maintenance
issues.

I'll just close by saying Merry Christmas to you
all. Thank you for initiating the process. I'm happy to
hear that staff is going to be coming out with more things
to look at in a transparent public process. Thank you for
your time.

ACTING CHAIRPERSON SERNA: Thank you.

Mr. Okurowski and Frank Gallo.
MR. OKUROWSKI: Thank you, Board.

Really quickly, my name is Peter Okurowski on behalf of the Association of American Railroads. The railroads have really appreciated the opportunity to work with staff on the technology assessment and we're going to continue to do so. And since the tech assessment is going to support so much of the future discussions, we just encourage staff to release that as soon as possible. Thank you.

ACTING CHAIRPERSON SERNA: Thank you.

Frank Gallo. And then our last speaker will be Humberto Lugo.

MR. GALLO: My name is Frank Gallo. I'm a member of the Ditching Dirty Diesel Collaborative, which is also part of the California Clean Freight Coalition.

I'm encouraged by the work that's being done on the sustainable freight strategy and also the pursuing zero emission vehicles for the freight sector.

I attended the presentation earlier when the Board was discussing international coordination. And it would be very helpful to see ARB's multi-jurisdictional collaboration expanded to the level suggested by Dr. Sperling earlier.

If I may, I have two examples of why ARB's leadership is needed beyond providing guidance measures...
that may be bypassed or ignored at the local level. The first example involves the use of leaded aviation gas. The industry's been given a pass of 32 years on this. And the community's wondering how much longer we have to suffer from this toxicity. It continues to be used in piston-driven aircraft, despite extensive studies demonstrating the toxicity levels. And although this may not seem a major problem nationwide, it is of particular concern for residents living near general aviation municipal airports that have flight schools. The flight schools fly a consistent pattern at low altitude over homes, schools, and they practice endless takeoff and landings. So what results is you have a disproportionate impact on low income communities.

Someone earlier, Wafaa spoke earlier about the LAX study, and I won't go into detail about that. But it goes to show -- I want to tie that into the measures that the Board is considering for airports and urge the Board to look beyond the airports. The airports are doing laudable work, and those measures are already in place at LAX. And what I'm talking about is terminal power. So the aircraft don't have to use auxiliary power for air conditioning. They're using -- taxis that service the airport are using hybrid vehicles, or CNG. What's missing in the equation is the pressure on the aircraft
manufacturers.

And I've attended conferences and spoken with Praton Whitney and General Electric engineers. They all talked about the difficulty of achieving lower NOx emissions and that pressure needs to be mounted up to continue development in the -- for those engines because they are very long lead times in aviation. We're talking about 25 years or so before these reach the market, involves testing, certification. I'll conclude. Thank you.

ACTING CHAIRPERSON SERNA: Thank you.

Last speaker is up Humberto -- is it Lugo or Martinez?

MR. MARTINEZ: Humberto Lugo Martinez. I'm from Comite Civico Del Valle in Imperial Valley and a member of the Coalition for Clean Air.

And I'm here -- I was here earlier as well for the SIP adoption on Imperial County. And I just want to note that Imperial County continues to be a hot spot -- a toxic hot spot according to New York Daily CalEnviroscreen.

The analysis show that air quality has not improved in Imperial County and remains a toxic hot spot in some areas of the communities. Some areas of the communities the quality of air has improved, but for
increased pollution emissions from freight we continue to be burdened with the high rate of asthma and cancer. Children in Imperial County are three times more likely to be hospitalized compared to other regions in the state according to California Department of Public Health.

We need to move forward with the sustainable freight strategy in all of California. CARB should put more or work together with Air Pollution Control Districts in order to protect the public from all the harmful effects of air pollution and maintain air quality standards and implement effective programs that are designed to provide administrative ease for those early adopters of zero and near-zero emission trucks.

This progress should be developed in a way that provides incentive to use technologies that meet all state, federal, and county mandates, considering environmental and economic impacts.

And one more thing is someone mentioned earlier I think that enforcement on CARB all through the state should be implemented statewide. I came up with the thought simultaneously educate the truckers and the companies to move forward with the sustainable freight.

Thank you.

ACTING CHAIRPERSON SERNA: Great. Thank you.

All right. That concludes our list of witnesses.
on this item. Again, this is an informational item. I
think we have some Board members that may have questions
or comments. Ms. Berg, I don't know if you wanted to
start us out.

BOARD MEMBER BERG: Thank you, Supervisor Serna.
First, congratulations, staff. This was a
tremendous undertaking. I think I remember in the
comments in January as a few of us gulped thinking we
would be looking at sustainable freight, it is an
overwhelming task. And as we've heard from several
speakers who have acknowledged that from both sides, it's
not only overwhelming, it's absolutely needed for us to be
able to reach our air quality and greenhouse gas goals.

That said, I think what I'd like -- the points I
would like to make is -- and I think I made this point in
January. We need to set expectations. Expectations drive
whether people do get disappointed, whether they
understand what the process is going to look like. If
we're envisioning a future, then that future takes time to
do that.

And I would agree that there are near-term
actions that can be taken, but I also would submit that
not all near-term actions are going to be productive for
long-term actions. So there's always trade-offs and
always going to be lots of discussions.
What could help me on this particular assessment is do we have a definition -- a written definition of zero and near zero emission?

ASSISTANT DIVISION CHIEF SAX: We do in the document we're going to be putting out have a definition for that. We're talking about zero emission tailpipe technology. We're talking about battery electric and fuel cell vehicles. For near-zero, we're talking about trucks that meet the lowest optional NOx standards, provide a 90 percent reduction of NOx in use, and that operate on renewable fuels.

BOARD MEMBER BERG: On both of those definitions, it's all tailpipe, none wheel to well?

ASSISTANT DIVISION CHIEF SAX: Well, when we look at zero emission vehicles, we obviously look at both tailpipe and well to wheel emissions. And we didn't spend much time talking about that today. But there are upstream emissions associated with zero emission technologies. Battery and fuel cell emissions benefits themselves are more efficient than the combustion engines. So they have lower well to wheel emissions than combustion technologies. But all of the technologies, whether zero or near zero, achieve their greatest greenhouse gas reductions when operated on renewable fuels, electricity, hydrogen, natural gas, or diesel.
BOARD MEMBER BERG: It does seem to me -- and this is probably going to be a philosophical conversation -- but when we have different criteria or different methodology for measuring things, then it feels to me that we might be picking winners and losers. So I think it's important that if we need to have a conversation on definitions that we do that up front and make sure that it's a level playing field across the board, would be my observation on that.

Again, congratulations.

The other thing I would just mention is that -- and we did have this speaker brought this up. When we're looking at time frames on some of this technology, it is a few years out. I mean, the technology that really would be game changers. Game-changing technology. Are we really looking at about 2030?

ASSISTANT DIVISION CHIEF SAX: It really is a question of the types of investments that we make. So for example, you know, the ZEV mandate has been really successful in leading to the development of battery and fuel cell technologies that allow us to be able to talk about those in the heavy-duty sector.

And like we said, there are some zero emission technologies that are commercialized today, primarily ground support equipment and forklifts and some lighter
applications like that.

The speed at which we're able to bring larger zero emission vehicles to market is going to be a function of the investments that we make and how we leverage those investments across not just what we do, but what the Department of Energy does, what the South Coast Air Quality Management District does and others.

So we are optimistic, I think. But it's hard to nail down a time frame because it's so dependent on how we do our job.

BOARD MEMBER BERG: On the ones that are commercially available, forklifts, things like the gantry cranes, do we have a feeling for the percent of the market they currently have? Like, what percent of the market do electric forklifts have?

ASSISTANT DIVISION CHIEF SAX: Electric forklifts have a fairly substantial part of the market. But fuel cell forklifts, for example, are a very small part of the market right now.

Most of these technologies we're talking about are very, very small part of the market. Part of our job as we look at applying the incentives is to try to find ways to expand those markets.

So that's particularly important to keep these companies and develop these technologies in business,
because often when they make the investments to develop the technologies, then there is a lag time between when they're offering the technologies and when people pick these technologies up. It's particularly important to help those companies through that transitionary period and markets develop. Otherwise, you get a lot of stranded investments in companies that hopefully later get picked up later. But how that -- you know, how those technologies roll out is often a challenge, I guess.

BOARD MEMBER BERG: So Mr. Corey, as we look at our next item is on incentives, how can information like today and from some of the research that is being done by various departments, like Cynthia Marvin's, how can we utilize this to help frame up our incentive programs?

DEPUTY EXECUTIVE OFFICER COREY: Ms. Berg, in fact, the way we're looking at the technology assessment is partly through that lens in terms of bisection, where the individual technologies sectors stand with respect to the characterization of zero emissions or near zero. What's the time frame? What's the costs? What are the potential levers to ultimately get us there?

That lever question to me is what roll is incentives going to have? What are the magnitude of those incentives?

One of the things, in fact, in the 14-15 AQIP
Plan, the Board when it considered the GGRF, the proceeds from cap and trade dollars, part of that allocation of those dollars included the recognition of the need for demonstration and pilot-scale projects with respect to the heavy-duty sector. So not only was the light-duty electrification under CVRP supported, there was about 85 million directive heavy-duty demonstration and pilot level applications.

The technology assessment, I see those things married in terms of providing some guidelines, some priorities, and also recognizing when we discussed the budget last year with the Board, there was recognition that the need on the heavy-duty side, thinking about NOx emissions, diesel PM emissions, and GHGs -- because the sector we're talking about is the source of all those. In fact, transportation represents 40 percent of GHG emissions, 80 percent of NOx, 95 percent diesel PM. There is a recognition of this is a start. And our expectation, even when we signaled that budget, was that as additional cap and trade proceeds, as one source became available, we saw a much greater need on the heavy-duty sector side. We see a marrying up with this technology assessment and helping it inform how to direct those dollars to really move us forward. And the sectors that are going to be significant with respect to NOx and diesel PM and GHG
reduction

BOARD MEMBER BERG: Thank you very much.

ACTING CHAIRPERSON SERNA: Mayor Mitchell, Dr. Balmes, and Supervisor Professor Sperling.

BOARD MEMBER MITCHELL: Thank you for the presentation. It's very good to see where you, are how far we've come, and what remains to be done.

I've attended a number of the meetings in Southern California on the sustainable freight strategy, and we have been asked in the course of those meetings what does sustainable mean. And it means to us zero emissions.

We recognize that there are challenges in getting there. And in particular, challenges with the heavy-duty sector. But there are a number of programs underway, demonstration programs, and so there is some light on the horizon for getting there.

I think the question that we're asking is how far out is that. And some of that is here now. It's just how do we get it into the market and commercialized into the market. And here we have the problem that Ms. Berg identified. We need to move forward so we have adaptation of those technologies in the market. But at the same time, we don't want -- we want to avoid the stranded investments that are happening with the programs we now
have in place.

So I think that it's important for us to give the most accurate signals that we can give to the market so they know what to expect in the future and they can plan for that. So that gets to what is available now in the near term that we should be pushing, incentivizing, and what is it that we can do long-term. And that will probably be some of that heavy-duty machinery that we can start planning for now so we get that -- our people adopting that and we can see -- make the changes that are needed so that that operates in the way we expect it to operate.

I think that for the South Coast region, this zero emission freight movement is incredibly important because we have, as everybody recognizes, almost insurmountable challenges to reduce our NOx emissions and ozone emissions. Those targets are 2023 and 2032.

But the sustainable freight strategy is a strategy that is really important to the whole state. Certainly important in the Bay Area and San Diego, in the Central Valley where we're moving a lot of trucks through the Central Valley. It's important everywhere for reducing emissions statewide.

And what that really means, the bottom line on that, is it's really to reduce the health impacts that
these emissions have on our population. And it's not
something that we can ignore.

You heard the testimony of the young woman from
Long Beach. That's a sorry I hear a lot because that's in
my district. But that came from Long Beach, but it exists
all over the state. And the reason we sit up here is to
improve the health of our population. And we must never
forget that's why we are here. And all of these
regulatory measures and incentives that we put in place
are to strive for the best outcomes that we can reach and
to make sure that we're ensuring the health of our
population.

So I want to thank in particular Cynthia Marvin,
who I have seen in operation. And she is terrific. And
all of our staff who has worked on this, on these
programs, and has traveled around the state to talk with
people, to do some public outreach, to hear from
stakeholders and to embrace their concerns and what the
issues are that they face because we need to help them
with overcoming hurdles as we get further along down this
road to clean freight, zero emission freight movement. So
we'll look forward to the report that comes out in April
and encourage you to keep talking to our stakeholders as
we move down that road. Thank you.

ACTING CHAIRPERSON SERNA: Supervisor Gioia.
BOARD MEMBER GIOIA: Thanks again for the presentation.

And I do want to get back to the understanding the alignment and time frame that I asked about earlier, because they're parallel tracks here, this study and then the development of the sustainable freight strategy. And it seems that those elements and -- obviously, the whole -- all elements of the study are really important. But those elements that are needed as we think through the freight strategy obviously should be done sooner. You talked about this being finished in April. Is that -- did I hear you correctly?

DIVISION CHIEF MARVIN: I was talking about putting out the -- I'll call it the visioning document in the March time frame for Board discussion in April.

BOARD MEMBER GIOIA: The visioning document, meaning -- just so I understand. What's different about that than the final sort of result of some of the assessments here? It's going to be an ongoing multi-year effort; right?

DIVISION CHIEF MARVIN: So we have a number of pieces in play here. We have the tech assessments that are providing the foundational knowledge about what is there today and informing our opinion where the data stop about what may be possible in the future when what are
those challenges going to be. What support do we need some our fellow agencies on the transportation and the energy side.

BOARD MEMBER GIOIA: Refresh my memory again of when we're expecting to have sort of the next iteration under the new time schedule for the freight strategy.

DIVISION CHIEF MARVIN: So we're talking about two different documents. The first document, which is the -- really that vision, the options to get to zero and near zero, the levers, regulatory and incentive, is March with the April Board discussion. The full plan is later in 2015 integrated with the transportation, the energy, and the business considerations that are really governed or led by other State agencies.

BOARD MEMBER GIOIA: I think I'm understanding now. Thanks.

DIVISION CHIEF MARVIN: All of that feeds into the SIPs of course, which will be moving forward later this year.

BOARD MEMBER GIOIA: Thanks.

ACTING CHAIRPERSON SERNA: Dr. Balmes.

BOARD MEMBER BALMES: Thank you. I have just two short comments.

First of all, I wanted to endorse the request from several of the witnesses about a careful assessment
of airport contribution to freight-related, goods-movement related emissions. I think we've done a fabulous job with the ports. And we do the best we can with railyards, given the fact that we can't really regulate the locomotives that go between railyards. But I think we haven't perhaps spent as much time on airports as we might. So I endorse that.

And then the second thing is -- and correct me if I'm wrong. At least one of the witnesses requested release of a new health impact assessment for the freight sector, which I think is going to be part of the clean freight report. I realize there are reasons to delay getting the final report out, not the least of which is getting buy-in from other State agencies and perhaps the Governor's office.

But maybe the health impact assessment is ready that could be an early action item that we could release. I've warned the environmental justice folks that there may be improvements with regard to health risks because we have improved the quality of air around ports, for example, and the diesel truck rule. But if that HII is ready, I think that's something we could release earlier than the full report. But I don't know if I'm speaking out of turn here.

DIVISION CHIEF MARVIN: Perhaps I can clarify.
Almost a year ago, the California Clean Air Freight Coalition had asked us for an update to the health impact statistics that we published back in 2006. So that was the estimate of the number of premature deaths, hospitalizations that are associated with exposure to pollution from freight. We committed to do that. We're almost done with that effort. And we expect that the March document will have an updated freight inventory and health statistics. I just want to note -- and I'm saying this to the expert here, that that is not a health impact assessment as that term is typically applied.

BOARD MEMBER BALMES: I'll accept that clarification, and I'm glad that there will be something released hopefully in March.

ACTING CHAIRPERSON SERNA: Professor Sperling.

BOARD MEMBER SPERLING: Thank you.

Let me offer some suggestions about how to organize this in a way that's compelling. And that is what we're talking about here now is a whole bunch of technologies that cost a whole bunch of money that we're going to do somewhere and we're going to find some incentive moneys to pay for.

We need a little more of a framework, a structure. So let me use just an analogy. So on the passenger vehicle side, we've got vehicles standards. We
have -- for both criteria pollutants and greenhouse gases. Same thing on the truck side.

What we have on the passenger side for the advanced technologies, which is what we're really talking about here, is a zero emission vehicle mandate. And that is targeted at a small number of major manufacturers that have deep pockets. We're basically getting them to bear most of the cost of launching this new technology and industry.

On the freight side, we don't have that situation. We have a lot more different types of products. We have a lot more different companies. So we need some way of getting our heads around this to figure out how are we going to do this. Because it's not just we are not going to come up with a pile of money that's going to make this happen. This pile of money would have to be so large that we'll have to get very creative, rob banks or something.

So there's two parts here. One is this process. We need to think this through a little better in terms of how do we create a framework to get these new technologies out there, even as pilot and demonstration projects -- you know, as a pilot and demonstration, okay, we can do that relatively low cost. But if we think about that, we're talking about a 20-year time frame before we really have
anything. I'm not sure that's exactly how we want to be thinking about this.

A lot of this technology is it's not a question of the technology being doable or commercializable. It's more which products make sense and which applications and how do we make that happen. So I think while we talk about pilots and demonstrations, we have to think about that pretty clearly. We could helter skelter and have it all over the place. It won't be very strategic and it won't be very efficient.

So I think we need to focus on which technologies are compelling and which applications. How are we going to make that happen? Who's going to bear the cost?

And one of the things I'd like to see is some kind of cost analysis of what is this cost premium that we're talking about to get to this, you know, vision that we have. Not the full vision, but you know, kind of the corresponding to the 2025 ZEV mandate. Think about it that way. How do we get to five or ten percent market penetration, which is when the market can hopefully possibly get a little more traction, so to speak.

And part of it is as the comment was made earlier, we can't go it alone either. We have to collaborate much more, interact much more with groups that are going to be buying this technology, creating the
market, the demand. And so it's both on a demand side and the supply side.

So I know this had a number of comments, but we've been spending a lot of time on this. A lot of people -- I shouldn't say we. A lot of people have been spending a lot of time on this. Just it's clear from all the testimony. And I think it's time to get more focused and come out with a real plan, which is -- I understand politics and everything else. But there's got to be some leadership. We have to take some chance and put some things out on the table.

ACTING CHAIRPERSON SERNA: Mr. De La Torre.

BOARD MEMBER DE LA TORRE: Thank you. I appreciate all of the effort that's gone into the sustainable freight initiative work throughout the year. But I need to echo what some of the folks said today. I'm very disappointed that at the end of this year we're not there. We don't have a strawman to even react to. This is something that was a priority for the year. And to get to the end of the year and not even have something that we can react to, I'm just very disappointed in.

So going forward, there cannot be a repetition of this thing slipping more and more and more. It just cannot happen. There's so much riding on this for me parochially down in southern California, but for the
state. This is really putting a marker down. And it's going to be tough. And people are going to be opposing it and angry, I'm sure, at some of the proposals and some of the ideas. And we'll get the usual pushback. But that's everything we do around here. And so I really want to emphasize how important it is that we put this thing together and have that dialogue among ourselves with the public and lead in this area, because people are expecting it. Thank you.

ACTING CHAIRPERSON SERNA: I would like to put a slightly finer point on that last remark, because I don't disagree with it. I think it's well placed. And it's not a condemnation of staff, by any means.

But to me, as a former project manager, there is a reason why you have budgets and why you have schedules. It's to kind of have a constant feedback loop about progress. And I, quite frankly, haven't felt about that way about the sustainable freight strategy to date.

I know we're talking about just one assessment today. But what I might suggest -- and I'll put it out there. I'm not going to get in the weeds with staff about it. But moving forward, perhaps something as simple as a Gantt chart that tells us what's left in front of us, measured in weeks hopefully -- maybe that's the appropriate measure of time moving forward -- about what
needs to happen by when. So that as Ms. Berg pointed out
earlier at the beginning of our comments, that
expectations are not only set for this Board and certainly
for staff, but equally if not more important for the
public and stakeholders.

Because this is not the first time we've heard
the concern expressed about why is it taking so long. So
I would just again put that out there. And maybe it's not
a Gantt chart. Maybe it's some other kind of scheduling
mechanism. But something that tells us what is in front
of us and when we can all expect that we're going to hit
some milestones. Because again, I just haven't felt like
I've been able to refer to something tangible that tells
us that. And so those would be my comments.

BOARD MEMBER SPERLING: I think that's exactly
right. That will provide the discipline to focus on what
don't we know that we do need to know and be able to get a
better grasp. This is just on the technology side. We
haven't even talked about the rest of the freight system,
which really gives me a headache thinking about it.

DEPUTY EXECUTIVE OFFICER COREY: Two follow up
comments. One, the Chair's comment about milestones, we
understand. We get the discussion happened. I actually
think that will be helpful. That is something we have
done internally, but I think from transparency standpoint,
giving something out in terms of the milestones that will
lead us to that report back to the Board is something
we'll work on.

I have a follow-up request actually. It's some
of the observations you made, Professor Sperling. It
would be very useful --

BOARD MEMBER SPERLING: You're going to tell me
what to do now.

DEPUTY EXECUTIVE OFFICER COREY: I was going to
look to the Chair to give you a homework assignment to
work with us going forward. I think as you pointed out,
technology is an aspect of what we're talking about. But
it's much broader than that. There's logistical. There's
mode shift related issues. There's other consultants we
need to bring in. The ability to consult with you on a
periodic basis going forward will be very helpful.

BOARD MEMBER SPERLING: Be happy to.

ACTING CHAIRPERSON SERNA: On that subject, I
would certainly agree with what Professor Sperling had to
say about technology and kind of the ambiguous nature of
it and the context of the sustainable freight strategy.

I can tell you having spoken with some
stakeholders recently, that seems to be a common almost
reflexive reaction by the freight stakeholders is that not
only is there not a market for these zero, near-zero
emission technologies, the technology they're telling me does not exist. So that's a problem. And if it doesn't exist, then again I think we need to understand if it doesn't exist today, there's other SIP says, is it by 2030? When can we kind of collectively understand that it either is going to be in the market at some point in the near future or not. So again, I just would like to underscore what Professor Sperling has said in that regard.

ACTING CHAIRPERSON SERNA: Supervisor Gioia.

BOARD MEMBER GIOIA: Given that there is a fair amount of cap and trade funding for clean transportation, which a lot of that is obviously for the freight system for clean freight, can you talk more about how the timing again of decisions with regard to the cap and trade revenues for this fiscal year and next fiscal year, which we would anticipate being similar amount for this category.

DIVISION CHIEF WHITE: I would be happy to.

One thing I wanted to add to Professor Sperling's remarks is what the Board and what we presented today was a high level overview. I think many of the questions you had in terms of when our technologies going to be available, what is their incremental cost, where are they going to be appropriate, where do we see where are there
gaps in terms of moving technologies forward. When we do
the detailed sector-specific reports that we'll release
early next year, I think a lot of those questions and a
lot of that framework, as you characterize it, should
start to come out and develop.

So I think that that will really help inform both
the freight strategy work that Cynthia's group will be
doing. And importantly, to Supervisor Gioia's question,
how we decide and how we propose to invest the upcoming
cap and trade funding as well. So that plan we'll be
taking to you in June for the fiscal year 15-16 funding
plan. And we are optimistic that we'll have a similar
amount of funding available to us next year as we did this
year.

So certainly investing in the types of technology
we talked about today for both demonstration and
deployment --

BOARD MEMBER GIOIA: It's all about aligning
these different efforts. And the sooner we can get the
sustainable freight strategy done, the more we can have a
clearer idea of how we want to make our cap and trade
investments, right. So it helps guide us in our decision
making.

DIVISION CHIEF WHITE: Agreed. As I think
consistent with as we prioritize freight investments in
this year's plan, we'll look to repeat that next year. Because there are many technologies that as you heard today are available and we can continue to invest in deployments of those. And there are many that we see are nearly commercialized or early in commercialization stages where investments will help grow those markets moving forward.

So I don't think that the completion of the technology assessments is going to be limiting in terms of identifying, especially for some near-term investments that we can make on the upcoming fiscal year where we expect those investments to pay significant benefits.

ACTING CHAIRPERSON Serna: Okay. Again, this was an informational item. Appreciate staff's hard work on this.

Next is an update and report to the Board on the joint Air Resources Board-California Air Pollution Control Officers' Association Assembly Bill 8 Carl Moyer Program Evaluation. And I'm going to ask Mr. Corey to introduce the item once he has all his staff assembled.

DEPUTY EXECUTIVE OFFICER COREY: Thank you, Chairman. I'll start while they're getting positioned. They should be ready by a time I'm done.

Carl Moyer program is an incentive program that produces credible emission reductions for the State
Implementation Plans. The Carl Moyer Program began in 1998 and has seen many subsequent legislative expansions over the years, including the addition of AB 923 in 2004. These programs played a critical role in cleaning up California's vehicles and equipment.

In 2013, AB 8 was reauthorized, the collection reauthorized the collection of fees, including some that support the Carl Moyer and AB 923 programs and directed ARB to collaborate with air districts to evaluate the goals of the Carl Moyer program, including opportunities for improvements.

As we reported to you in July, in implementing the provisions of AB 8, staff has worked in close cooperation with our air district partners to conduct the evaluation of the Carl Moyer program and AB 923 receiving valuable input from stakeholders all along the way.

ARB staff would like to acknowledge CAPCOA for their exceptional efforts in partnering with ARB on this project.

And here at the table with us -- I'm going to confirm -- is we have CAPCOA's President Alan Abbs, who is the Air Pollution Control Officer for Tehama County. He'll also say a few words after the staff presentation.

I'd also like to extend a personal appreciation and that of the agency to all the participants in the
Incentive Program Advisory Group, and especially Board Member Sandra Berg for her continued leadership on this critical program.

I'll now turn the presentation over to Jennifer Kozumplik representing the Mobile Source Control Division who will provide the report. Jennifer.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST KOZUMPLIK: Thank you, Mr. Corey.

Good afternoon, members of the Board.

Assembly Bill 8 required the Air Resources Board in consultation with the local air districts to evaluate the Carl Moyer program's long-term policies and goals. In July of this year, staff presented a preliminary update on our progress. At that hearing the Board requested a subsequent update on this effort. Today's presentation is in response to that request and describes the concepts for statutory changes that have been collaboratively developed by ARB and CAPCOA, called the air agencies for the purposes of this presentation.

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AIR POLLUTION SPECIALIST KOZUMPLIK: I'll begin with some background on Carl Moyer and related local programs funded by Assembly Bill 923 and our
accomplishments, then describe steps taken to evaluate the
programs, and conclude by describing the resulting
concepts for enhancement. Per the Board's direction from
this past July, I would also note that staff issued a
report this week providing additional detail on the
elements of today's presentation.

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AIR POLLUTION SPECIALIST KOZUMPLIK: The Carl
Moyer and AB 923 incentive programs provide funding to
clean up a wide variety of equipment, including
locomotives, trucks, construction, and agricultural
equipment, marine vessels, and school buses. As I'll
describe, these programs complement one another and
evaluation of the potential changes to Moyer must take
into account the effect on AB 923 as well.

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AIR POLLUTION SPECIALIST KOZUMPLIK: Moyer is
implemented through a partnership between ARB and every
air district in the state. Even the smallest districts
are eligible to receive funding every year. Projects must
provide surplus emission reductions that could be credited
to the State Implementation Plan and must fall below a
prescribed cost effectiveness cap.

The program has an annual budget of $69 million
and is funded through a six dollar new vehicle smog
abatement fee and a 75 cent fee on the sale of new tires. In addition, districts taking more than a minimum must provide match funding, which adds approximately $8 million annually.

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AIR POLLUTION SPECIALIST KOZUMPLIK: This funding is used for the purchase of cleaner than required engines and equipment. This means early and/or beyond what is required by any regulation. Funding levels are based on reductions of oxides of nitrogen, reactive organic gases, and particulate matter. Implementation is the responsibility of the air districts, which solicit, evaluate, select, fund, and monitor the projects in their areas. ARB's role is to develop the guidelines, protocols, and criteria for projects and cost effectiveness.

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AIR POLLUTION SPECIALIST KOZUMPLIK: Districts also have the option of implementing a local two dollar vehicle registration fee authorized by AB 923. With the notable exception of Lake County, which is in attainment with all local and federal ambient air quality standards, all air districts have the ability to collect those fees, although at the present time, only about half of the air districts do so.
Air districts can choose to use AB 923 funds for light-duty scrap, agricultural assistance, and lower emission school bus programs projects, as well as for Carl Moyer projects.

In many districts, these funds are the source of their Moyer match. For this reason, AB 923 must be taken into account when evaluating potential changes to Moyer.

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AIR POLLUTION SPECIALIST KOZUMPLIK: It is also important to consider that the program is guided by statutory requirements as well as administrative guidelines. Statute requires projects to meet a cost effectiveness limit and to be surplus. Statute also limits leveraging of funds and specifies which project types are eligible.

Additionally, statute allows the program to pay for reductions in NOx, ROG, and PM but restricts considering other pollutants such as greenhouse gases. The guidelines set forth how the cost effectiveness limit is adjusted for inflation. They also establish how surplus is determined and the eligibility of projects.

Over the years, the Board has modified the guidelines numerous times to reflect advances in technologies, the effect of changing regulations, and changes in policy needs. However, ultimately statute has
established limits on what can be adjusted.

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AIR POLLUTION SPECIALIST KOZUMPLIK: Overall, the program has been very effective in the 16 years it has been in existence. Over $980 million in state and local funding has cleaned up more than 46,000 engines. Approximately 174,000 tons of NOx and ROG and 6400 tons of PM have been reduced at an average cost effectiveness of approximately $10,000 per weighted ton. Staff estimates the program helps avoid approximately 40 premature deaths each year. Additional information in response to requests in July from Board Members Sherriffs and Sperling is provided in the report released by staff earlier this week.

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AIR POLLUTION SPECIALIST KOZUMPLIK: As we've seen, Carl Moyer has been successful. The passage and signing of Assembly Bill 8 in 2013, which reauthorized funding through 2023, validated this success.

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AIR POLLUTION SPECIALIST KOZUMPLIK: AB 8 provides the opportunity to strengthen the program to successfully meet current and future needs. Thus, AB 8 included a requirement for ARB in consultation with the air districts to evaluate the policies and goals contained
in the Moyer program.

Partnering in this effort, ARB and CAPCOA executed a Memorandum of Agreement to ensure coordination and ensure that the end result reflects our mutual goals. At that time, the agencies identified near-term administrative changes that could be implemented under current statute.

And earlier this year, the Board approved those changes to the guidelines which streamlined program implementation and expended the potential project pool for project categories. For longer-term changes, we convened meetings of the Incentives Program Advisory Group. The IPAG meetings, which are open to the public, have long been an essential forum to get suggestions and feedback from all parties affected by the incentive programs.

These meetings draw industry, energy, government, and environmental stakeholders. In July, after the first IPAG meeting, the air agencies presented an update to the Board. Since that time, a follow up IPAG meeting was held to further refine how the program could be made even more successful.

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AIR POLLUTION SPECIALIST KOZUMPLIK: From the beginning, the air agency and stakeholders all recognized the program should remain true to its core and that any
changes should not shift the program's fundamental mission
to provide reductions in NOx, ROG, and PM, but rather
should build on our current successes to do more.

To better position the program for the future,
what were called five pillars for change were identified.
These pillars cover many aspects of the program, including
cost effectiveness, greenhouse gas, leveraging funding
from multiple sources, expanding project types, and
streamlining for greater efficiency.

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AIR POLLUTION SPECIALIST KOZUMPLIK: With these
two pillars, the air agencies have developed
recommendations for legislative enhancements which I will
now describe.

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AIR POLLUTION SPECIALIST KOZUMPLIK: The first
item is the cost effectiveness limit. In 2004, the
statute established the current cost effectiveness limit
at $13,600 per ton with annual adjustments for inflation,
raising it to 17,720 today.

The program's overall cost effectiveness is about
$10,000 per ton. While that is significantly below the
current limit, the air agencies believe that this only
tells part of the story. Changes in the cost of emission
controls have outpaced inflation. Additionally, as in-use
fleet rules are implemented, there are fewer opportunities for surplus reductions, while at the same time there is increased interest for funding.

As technologies get cleaner, they often result in only a small absolute emission reduction, which limits the amount of meaningful funding Moyer can provide. One example is a truck certified to the optional low NOx standard. Under the current limit, an optional low NOx truck would get the most only $5,000 more than a conventional diesel truck, even though the purchase price can be as much as $50,000 more. This presents a barrier to incentivizing the significantly cleaner technologies needed to meet the future air quality and climate targets.

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AIR POLLUTION SPECIALIST KOZUMPLIK: The second critical enhancement is to recognize and encourage the reduction of greenhouse gases. In 1988, when the program was first developed, the state had not formed clear climate change goals. Since that time, the need to coordinate GHG reductions with other programs has become apparent.

Earlier this year, the AB 32 Scoping Plan update specifically identified the need to leverage funds to foster greater reductions. Although many Moyer projects have resulted in GHG co-benefits, particularly projects
such as shore power and agricultural pump electrification, the program cannot provide an additional incentive for those projects that reduce both GHG and criteria pollutants.

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AIR POLLUTION SPECIALIST KOZUMPLIK: As we integrated GHG into the program, there are several considerations to keep in mind. First, we wanted to allow districts to ability to prioritize GHG, but only if they chose to do so.

Also, we must retain our core objective of criteria pollutant reductions but still promote the adoption of advanced technologies. The air agencies are exploring options to accomplish this without including GHG directly. This approach is being pursued because directly including GHG could diminish the program's focus on criteria and toxic reductions.

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AIR POLLUTION SPECIALIST KOZUMPLIK: One strategy being considered is a two-tiered cost effectiveness model. The first tear would encompass the current range of projects that provide NOx, ROG, and PM benefits only.

The second tier would be an additional consideration for projects that also provide significant...
GHG benefits. Under this scenario, the Board could set the second tier cap and establish a minimum level of GHG reductions sufficient to qualify. This mechanism would also be used to extend additional funding to projects that provide other ancillary benefits, such as those that significantly reduce toxic exposure to sensitive populations.

A major advantage to this concept is that it retains the program's focus on criteria emission reductions, while enabling greater options and maximizing the ability to leverage GHG funding without the risk of double counting benefits.

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AIR POLLUTION SPECIALIST KOZUMPLIK: This brings us to the third major concept for enhancement, leveraging. That is, combining multiple funding sources to accomplish program and project goals.

Current statute specifies that most other governmental funding sources must be considered in cost effectiveness and the allowable grant amount. This makes the funding of larger longer-term projects difficult or impossible for Moyer.

This is especially true in projects involving locomotives and marine shore power. In some cases, it forces an applicant to select one source of funds over
another, thereby foregoing the cleanest choice. Greater allowance to leverage funds from multiple sources would allow applicants to increase total incentive opportunities, encourage the deployment of near-zero technologies, simplify cofunding of large projects, and increase the ability to fund public agency projects.

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AIR POLLUTION SPECIALIST KOZUMPLIK: It's clear that the leveraging restrictions in statute were originally put in place to prevent situations like overpayment or double counting of reductions. Safeguards to prevent these possibilities must be retained. However, because this is a complex issue and because available funding and new technologies are always evolving, statute should allow for the guidelines to specify leveraging of funds.

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AIR POLLUTION SPECIALIST KOZUMPLIK: The fourth pillar or concept for enhancement is an expansion of allowable project times. As we noted earlier, eligible project types are described in the statute. Historically, expansion of the list has occurred legislatively. For example, the ability to fund truck replacements was added after the program's inception and is now a major part of Moyer, not only providing reductions, but also supporting
implementation of truck and bus rule.

Stakeholders have expressed particular interest in funding new technologies and infrastructure to support them. Early commercialized technologies need support to build volume. Fueling infrastructure has been specifically called out as a deployment challenge. Therefore, although statute provides some flexibility for ARB to add categories, greater clarity is needed on the ability to use Moyer funding for infrastructure and various other projects.

Broadening the types of projects available will not only provide short-term emission reductions, but will help the State and local air districts move towards zero and near-zero technologies to provide longer-term reductions.

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AIR POLLUTION SPECIALIST KOZUMPLIK: The final element is program streamlining. Throughout the review process, the need to simplify implementation came up frequently. Through implementation over the last 16 years, we have learned that some statutory requirements can hamper effort to be efficient and responsive to applicants. Among other items, we believe there is an opportunity to harmonize spending targets, simplify reallocation, and enhance district resources for
disadvantaged communities.

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AIR POLLUTION SPECIALIST KOZUMPLIK: This concludes the recommended legislative enhancements that were identified. Enabling these enhancements will ensure a successful future for the Moyer program.

Moving forward, CAPCOA in coordination with ARB is actively developing statutory language to reflect the five pillars discussed today for introduction in the current legislative session. The air agency partners will continue to work with stakeholders to build support for these changes.

This completes my presentation. Now CAPCOA President Alan Abbs will say a few words on behalf of CAPCOA and the air districts.

ACTING CHAIRPERSON SERNA: Thank you.

CAPCOA PRESIDENT ABBS: Thanks, Jennifer and members of the Board.

My name is Alan Abbs. I'm the Air Pollution Control Officer for Tehema County and also the President of the California Air Pollution Control Officers Association.

Today's kind of a bittersweet day for me because I wasn't an Air Pollution Control Officer for very long when Jen Kozumpliz became my Moyer liaison. She helped me
out of a jam when we were first getting the program up to speed again in Tehema County. We had given up our Moyer funds for a couple years. Jen helped us get the program back on track, and she followed me up to Lassen County when I was doing some work up in Lassen County to get their program back on track for some problems they're running into.

So I think this is the last thing she's going to be doing on behalf of the Moyer program before she goes to Prop. 1B. I'm going to miss her and I think the lot of the rural counties in California are going to miss the work she's done. So thank you, Jen.

I'd also like to thank the rest of the Moyer staff that have been an integral part of this collaborative work that we've done over the past several years. It started with the AB 8 legislation that passed and then continued with the IPAG meetings. And for starters, I'd like to recognize Board Member Berg for some significant work that she did in facilitating the IPAG meetings and working with the air districts, with ARB staff, and the various stakeholders to come to some common ground on how we are going to make this program better. So thank you for all the work you put in to do that.

And also I'd like to thank the other Moyer staff, Erik White for work that he's done, as well as Kathy
Garrison and also Scott Rowland. Their work with us has been appreciated as well.

As you probably gathered from the presentation that the Carl Moyer Program is one of those programs I think that unites not only small rural air districts, but the large air districts as well. It's probably the one program we have here in California that we can all agree on has provided some clear benefits across the state. Whether it's doing work in the ports, in the urban cities, or in my case helping out a prune farmer replacing a 40-year old tractor with a new Tier 3 or Tier 4 tractor for his farm.

The program has been so successful that Tehema County opted into the 923 program to get extra funds from the DMV through vehicle registration so that we can provide a match and get additional funding and make our money go further in Tehema County. And the money that we received that we didn't spend on Moyer matches, we've also been using as Moyer for Moyer-like projects and increasing the benefits that we get in Tehema County even more.

So this program yields tremendous benefits and it's something that I think even our local residents that don't like paying taxes can agree that it's providing significant benefits for everyone.

So as I mentioned before, the IPAG process has
been a multi-year process. We got air districts, ARB staff, stakeholders together, held various meetings. We came up with these five pillars that Jen presented to the Board. CAPCOA highly supports the work that's been done on behalf of this, supports the five pillars that have been presented. I believe we have some specific districts that will be showing up to testify on various aspects of that.

But I'm pleased with the progress that we've made so far. And CAPCOA looks forward to continuing to work with staff to improve the program and make it better. Thanks.

ACTING CHAIRPERSON SERNA: Thank you. It's obvious we're a dwindling bunch at this point. So I think what I'd suggest is we take our one and only speaker that's signed up Bonnie Holmes-Gen. Sorry to put you on the spot.

MS. HOLMES-GEN: I thought I would stick around to the end. Maybe everyone would want to hear about our tremendous support for this program.

I always jump at the chance to talk about the AB 8 and 923 programs and how these investments have dramatically reduced pollution and related health emergencies. So I'm so proud these programs have been implemented with broad stakeholder support and a clear
focus on health and air quality benefits.

And I want to also thank Board Member Berg for her leadership over the past few years. It's been so important bringing people together and the relationship between the air districts and the ARB in making this program work successfully has been so important. And we support -- I basically wanted to say we support the program, this program review process, and these pillars for changes that have been brought forward.

The program has evolved a lot over the life of this program and important ways in moving beyond NOx to PM and now it's moving forward to embrace greenhouse gas. This is so important, this alignment with the overall focus to move forward and look to zero emission and to achieve our long-term greenhouse gas goals.

We wanted to say a couple quick things. Number one, we really appreciate the leadership of ARB and the districts.

Number two, we'll be working with you in this current legislative session as we work on ironing out the details here.

Did want to suggest that there is an important piece here that needs to happen, an outreach and education piece with the Legislature to help them understand why these changes need to be made, how they will heighten the
effectiveness and the ability to maximize our short- and long-term benefits and how we've been thinking about how we can better coordinate all these pots of funding, because there is a lot of talk about all this money that's out there. We need the some help. Everyone understands it's not a lot of money. It's actually a little money. But we have figured out how to better coordinate and leverage it to maximize the benefits to the state and to communities that are breathing dirty air.

Do want to mention the point about the synergy between the incentive funding and the sustainable freight program. That was a great discussion. I want to make sure we're using this funding as much as we can to help push those small scale demonstration projects and keep us moving forward.

And also want to mention school buses. That's going to important focus of our Lung Association for a long time. I just want to make sure we're looking at what more needs to be done on school bus upgrades and replacements and how we can channel these funds in that direction. Overall, this is a key element to coordinate our work on smog, soot, and climate. And we appreciate your hard work on this. Thanks.

ACTING CHAIRPERSON SERNA: Thank you, Bonnie.

Questions of staff? Supervisor Gioia.
BOARD MEMBER GIOIA: So under the sort of expanded program, districts can opt into prioritizing projects with GHG benefits if they wish.

Just as a -- I'm not familiar. Can a district prioritize projects if it wished it would also decrease toxics? Is there that flexibility or is that within the flexibility of a local district?

INCENTIVES AND TECHNOLOGY ADVANCEMENT BRANCH

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

Currently, the program is very much a locally directed program. An individual district can, for instance, chose to prioritize PM reduction and select projects that do that. In fact, it is also possible under current statute full disclosure for a district to prioritize projects that reduce GHG. What is not possible is for them to provide any additional funding towards those projects, which obviously creates some disincentives for an applicant.

BOARD MEMBER GIOIA: With additional funding, yeah. Right. I see what you're saying. Thanks.

ACTING CHAIRPERSON SERNA: Any other questions? Ms. Berg and then Mayor Mitchell.

BOARD MEMBER BERG: You can take Mayor Mitchell first.
BOARD MEMBER MITCHELL: I just want to say we are in strong support of the concepts here for changes to this program. As we've seen, the requirements have been more stringent. It becomes harder and harder for applicants to meet that criteria because you have to have something that -- to improve your vehicle beyond what is already required. That becomes harder and harder. So I think this is a good step in the right direction.

The other part of this that I think is a really good addition is that you can expand infrastructure. And as we're moving into electric vehicles, fuel cell vehicles, we will need to expand that infrastructure.

We talked on the last item about how we can begin to incentivize and fund some of the clean technologies we expect in the freight movement sector. And this can be one of those pieces. We need to -- as Dr. Sperling mentioned, we need to find some structure for how we move forward with this.

But I think some of these pieces of funding and incentives that we are looking for are going to be part of that structure as we move forward. So very strongly in support of this program. We use it, as you all know, quite a lot in the South Coast District, and we have additional funding through the DMV funds in the South Coast district. So it's really been a -- I would say a...
notable addition to our toolbox of how to clean up the
emissions in the South Coast. So thank you.

               ACTING CHAIRPERSON SERNA: Ms. Berg.
               BOARD MEMBER BERG: Thank you.
               I'd just like to make the closing comment of this
has been a remarkable process. When we look at the seven,
eight years that the Incentive Advisory Committee has been
at work, this really is the culmination of all that hard
work. And CAPCOA and ARB has done yoman's work and along
with our fellow stakeholders to getting us to this point.
As we started out re-envisioning our incentive moneys and
what that would look like, we've come a long way.

               Our last IPAG meeting was hosted by South Coast
Air Quality Management District, and we had a first. And
that first was we had a remote offsite. So about 100 of
us were at South Coast. But there was a strong group that
was here in Sacramento. And for the first time, we
actually held that remote group as if they were in the
room. And they participated as if they were in the room.
And that was also very exciting.

               But I personally wanted to thank and recognize
Fred Minassian. And he has recently been promoted, a very
well-earned promotion, is now the Assistant Deputy
Executive Officer. We will miss him. But we won't let
him go too far. We are part of that incentive family. We
are going to count on you being around still.

But we wanted to thank you for your hospitality
at the last IPAG meeting. It was really very, very
exciting.

So congratulations, staff. Erik, you and your
team have been nothing but outstanding. Thank you very
much, Alan, for the leadership of CAPCOA. It's really
been a lot of fun. Congratulations.

ACTING CHAIRPERSON SERNA: I know you wanted the
last word, but I'll take it as the Chair today. And just
extend our thanks on behalf of the Board and certainly on
behalf of Mary for keeping your thumb on the pulse of this
program.

And you know, we have a Board that obviously by
its composition has its specialities, whether it be public
health or otherwise. And Ms. Berg, to use her term, has
done a woman's job from the Board's perspective working
with staff and CAPCOA and others to make sure that the
policies being implemented as it should be and enhanced as
it should be. So we want to thank you for all that
support.

That is an informational item as well.

Next on the agenda is an opportunity for members
of the Board to comment on matters of interest.

I will just make note of an opportunity I had
last week to join others in the fine community of West Sacramento just across the river to commemorate the opening of this state's tenth hydrogen fuel station, public fuel station. And the only negative comment I had to say is it's too bad it's on that side of the river. We want to see the 11, 12th, 13th and more certainly throughout the state.

It was a delight to be part of an acknowledgement of all the parties, including the California Fuel Cell Partnership and others, Ramus Oil, Indy North America that made that possible. So now consumers here in Northern California, specifically Sacramento region, have an opportunity to fuel their fuel cell vehicles. And hopefully that's really enhances consumer preference for alternative fuel.

So next on our agenda is the public's opportunity to address this Board on items not on the agenda. We do have three individuals that have signed up to speak. Before I call their names, I'm going to remind them and us that we cannot deliberate, nor can we act on items that are not on our agenda.

So with that, I'm going to call John Larrea, the California League of Food Processors.

MR. LARREA: Thank you, members. John Larrea with the California League of Food Processors.
First of all, I want to wish everybody the 
happiest of holidays. I know it's been a long year and 
we're all looking forward to a rest the end of this year. 

What brings me here today is benchmarking. The 
food processors for the first time this year, we 
implemented a product-based benchmark. And I can happily 
report that we are for the most part quite satisfied with 
the outcome of that. 

But as with everything, you know, after it goes 
for a while, we tend to find some flaws or some unintended 
consequences that will need to be cleaned up. I'm not 
going to go into the details of this. I want to let the 
staff know that the facilities that are going to be 
impacted are going to be sending you a letter issuing the 
details associated with this. We're going to look forward 
to working with you all to fix that. 

By the way, I also wanted to -- I didn't want to 
forget. I wanted to thank the verification unit and the 
benchmarking unit for their extraordinary efforts during 
the implementation of this benchmark. It was kind of a 
rocky start. And we were in the middle of our season, the 
beginning of our season actually, so there was some 
questions there as to how we were going to be able to get 
this done. And the staff really did a good job by staying 
on top of that.
What brings me here today though is that in terms of the issue associated with the benchmark, we feel there's probably going to be requiring the regulation to be reopened in order to be able to correct the flaws associated with that. And while we are more than happy to find alternative methods if that's available, it sounds like the Board's year is going to be quite busy. And we don't want you to kind of lose focus on the cap and trade itself and on the regulations and moving forward. You do have over 600 industries out there or companies out there subject to this. As we progress through the years, there's going to be changes that are going to need to be made in order to meet the economic changes that are occurring also.

So we would just hope that you would consider it a priority to make sure the cap and trade regulation is moving smoothly and that it is not unduly burdening any industry that is subject to that. And that you'll work with us to help get this done this year so that we can make sure that we can progress into the next one. Thank you very much.

ACTING CHAIRPERSON SERNA: Thank you.

Bud Caldwell.

MR. CALDWELL: Good afternoon. I'm Bud Caldwell, Alliance for California Businesses. Three minutes.
When we started this process, we looked at this Board and realized it's comprised of some exceptional hard-working people that are really intelligent. And we thank you for your service.

But saying that, we believe that there is a lot of information that may not be in front of you. Things like the current trucks with DPFs that are igniting all over the state. In my letter to the member at large, we included those. And if you did nothing else and we provided each one of you a CD of that letter and if you would just look at those, and I'd leave it in your good and capable hands as to what to do and think about those pictures. But it is a serious situation in the state.

A year ago, I told you right here that the DPFs were dangerous, extremely expensive, and they didn't work. And today, I say they are extremely dangerous. They're unsafe and they frequently don't work. So I think with that I'll leave it alone and leave it up to you. But please, if you would, take a look at those pictures.

ACTING CHAIRPERSON SERNA: Thank you.

Hank de Carbonel.

MR. DE CARBONEL: I'd like to just echo what Bud said. We've included on those disks a number of photographs and some video of number of trucks on fire on the highways of California. But as many of you know, we
knew have these emissions devices, not just retrofits but OEMs all across the United States. This is a problem that's going on not just in California, but everywhere.

And I should also remind you that it's not just freight trucks or those types of vehicles. It's also school buses and motor coaches. So school buses are subject to fire. We had one in Southern California just this last week. We had a freight truck on fire on 580 in Livermore on Monday. We three trucks destroyed, 49 truck stop just Thanksgiving and another one just up the road in Dunnigan while fueling was burned to the ground as well.

This is a serious problem. We as civilians don't really have access to all the information. All we can get is anecdotal. What we see is a growing problem with these fires.

We also know that the insurance industry now is taking a look at this because they're seeing a rapidly increasing incidences of fires on these trucks and with these devices, and they're uncomfortable with that.

So something needs to be done before we do have a fatality or fatalities. And you guys are directly responsible for this. As Bud says, I think some of you know I've been here quite a while talking about these filters and problems with them. And everybody just wants to think it's going to go away or it's not that serious.
Well, it's serious now. It's serious right now today, and that's why we took the time to be here all day.

We appreciate being the last guys, and I know everybody wants to go home. But this is a serious, serious problem. And we're talking about lives, not just some fancy truck or something. But it's going on and on and it all started right here in this building. So there's no ducking or dodging it or saying we're going to do a study. These things have to be suspended until we really know what we're talking about and what we're dealing with. I'm not -- as I say, this is not just the retrofits. This is the OEM equipment as well, and it goes across all brands. So thank you very much.

ACTING CHAIRPERSON SERNA: Thank you. Okay.

That completes our agenda today. Before we adjourn, I want to wish my colleagues happy holidays, Merry Christmas, happy New Years. Same the staff. We look forward to 2015.

So with that, we are adjourned.

(Whereupon the Air Resources Board meeting adjourned at 3:39 PM)
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 5nd day of January, 2015.

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