MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

CAL/EPA HEADQUARTERS

BYRON SHER AUDITORIUM

SECOND FLOOR

1001 I STREET

SACRAMENTO, CALIFORNIA 95814

THURSDAY, FEBRUARY 20, 2014

9:05 A.M.

TIFFANY C. KRAFT, CSR
CERTIFIED SHORTHAND REPORTER
LICENSE NUMBER 12277

APPEARANCES

BOARD MEMBERS

Ms. Mary Nichols, Chairperson

Dr. John Balmes

Ms. Sandra Berg

Mr. Hector De La Torre

Supervisor John Gioia

Mayor Judy Mitchell

Mrs. Barbara Riordan

Supervisor Ron Roberts

Supervisor Phil Serna

Dr. Daniel Sperling

STAFF

Mr. Richard Corey, Executive Officer

Mr. Alberto Ayala, Deputy Executive Officer

Ms. Edie Chang, Deputy Executive Officer

Ms. Lynn Terry, Deputy Executive Officer

Ms. Ellen Peter, Chief Counsel

Ms. La Ronda Bowen, Ombudsman

Mr. Steve Cliff, Assistant Chief, SSD

Mr. John DaMassa, Chief, Modeling and Meteorology Branch, AQPS

APPEARANCES (CONTINUED)

STAFF

Mr. Ajith Kaduwela, Staff Air Pollution Specialist, Modeling and Meteorological Branch

Ms. Karen Magliano, Assistant Chief, Air Quality Planning and Science Division

Ms. Cynthia Marvin, Chief, SSD

Ms. Marcelle Surovik, Air Pollution Specialist, Energy Section, Stationary Source Division

ALSO PRESENT

Mr. McKinley Addy, AdTra, Inc.

Ms. Adrienne Alvard, Union of Concerned Scientists

Mr. Anthony Andreoni, CMUA

Mr. Paul Baer, Ph.D., California and Western States Climate Economist

Ms. Susie Berlin, NCPA

Mr. Neil Black, California Bioenergy

Mr. Lewis Blumburg, California Climate Change Program, Nature Conservancy

Mr. Frank Caponi, LA County Sanitation Districts

Mr. Casey Creamer, CCGGA/WAPA

Ms. Sarah Deslauriers, California Wastewater Climate Change Group

Mr. Evan Edgar, California Compost Coalition

APPEARANCES (CONTINUED)

ALSO PRESENT

Ms. Sam Emmersen, GWAC

Mr. Mac Farrell, Environment California Research & Policy Center

Mr. James Garner, Dairy Cares

Ms. Claire Halbrook, PG&E

Mr. Frank Harris, Southern California Edison

Ms. Bonnie Holmes-Gen, American Lung Association

Mr. Steve Jones, Waste Industry

Ms. Larissa Koehler, Environmental Defense Fund

Mr. Kenneth Koyama, CAPCOA

Mr. Nick Lapis, Californians Against Waste

Ms. Julia Levin, Bioenergy Association of California

Mr. Gary Liss, Gary Liss & Associates

Mr. Bill Magavern, Coalition for Clean Air

Mr. Paul Mason, Pacific Forest Trust

Ms. Jerilyn Mendoza, Southern California Gas Company

Mr. Ken Nold, Turlock Irrigation District

Ms. Kathryn Phillips, Sierra Club

Ms. Dorothy Rothrock, CMTA/AB32IG

Ms. Mikhael Skvarla, CCEEB

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PROCEEDINGS

CHAIRPERSON NICHOLS: Want to welcome everybody to this meeting of the Air Resources Board. And we will begin with the Pledge of Allegiance. If you'll all please rise.

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

CHAIRPERSON NICHOLS: The Clerk will please call the roll.

BOARD CLERK JENSEN: Dr. Balmes?

BOARD MEMBER BALMES: Here.

BOARD CLERK JENSEN: Ms. Berg?

BOARD MEMBER BERG: Here.

BOARD CLERK JENSEN: Mr. De La Torre?

Mr. Eisenhut?

Supervisor Gioia?

BOARD MEMBER GIOIA: Here.

BOARD CLERK JENSEN: Mayor Mitchell?

BOARD MEMBER MITCHELL: Here.

BOARD CLERK JENSEN: Mrs. Riordan?

CHAIRPERSON NICHOLS: Here.

BOARD CLERK JENSEN: Supervisor Roberts?

BOARD MEMBER ROBERTS: Here.

BOARD CLERK JENSEN: Supervisor Serna?

BOARD MEMBER SERNA: Here.

BOARD CLERK JENSEN: Dr. Sherriffs?

Professor Sperling?

BOARD MEMBER SPERLING: Here.

BOARD CLERK JENSEN: Chairman Nichols?

CHAIRPERSON NICHOLS: Here.

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

CHAIRPERSON NICHOLS: Is there anybody in the audience who has never been to a meeting of the Air Resources Board? In that case, I'm going to read the entire script just for you.

Anyone who wishes to testify should fill out a request to speak card that's available in the lobby outside the boardroom. Please return it to a Board assistant or to the clerk of the Board seated down here in front prior to the commencement of your item. Also, speakers need to be aware that the Board will impose a three-minute time limit. Please state your full and last name when you come up to your podium. Put your testimony into your own words. It's easier for the Board to follow if you go straight to your main points. You do not need to read your written testimony since it will be entered into the record.

For safety reasons, please note the emergency exits to the rear and to my right and left side of the

room. In the event of a fire alarm, we're required to evacuate this room immediately and go down the stairs and out of the building until we hear the all-clear signal when we can return to the hearing room and resume the hearing.

Okay. That's it. Now our first item this morning is on consent. This is minor updates to the Yuba City-Marysville PM2.5 Maintenance Plan and redesignating request. It's a submittal for our State Implementation Plan. I'd like to ask the Clerk if any witnesses have signed up to testify on this. Nope, they have not.

Are there any Board members who would like to see this item removed from consent? If not, then I will close the record and ask if all the Board members have had an opportunity to review this item, if I could have a motion to approve.

BOARD MEMBER BERG: So moved.

BOARD MEMBER SERNA: Second.

BOARD MEMBER RIORDAN: Second.

CHAIRPERSON NICHOLS: All in favor please say Aye.

(Ayes)

CHAIRPERSON NICHOLS: Opposed?

Any abstentions? Great.

That's good news. We like this.

Our next item is the report from the Ombudsman. When we brought La Ronda Bowen to the Air Resources Board to revamp the Board's Office of the Ombudsman four years ago, she came with a vision of making this office one of the most effective in the nation in several ways:

First, by ensuring that the voices of California small business owners are heard early in our policy discussions often as regulations are being developed and that their perspective and expertise are more thoroughly integrated into the ARB's program.

Second, by increasing the opportunities for the Board to understand and provide the tools small businesses need to meet or exceed regulations.

And finally, by making the Ombudsman and other staff at all levels more proactive as well as responsive to issues that affect small businesses and other stakeholders.

La Ronda has touched every ARB program that has any way of dealing with small businesses and help them to think like small businesses. She works to identify opportunities for the Board to engage in small business assistance by listening and identifying new opportunities that may emerge from regulatory policy. And she's been instrumental in guiding small businesses through our processes and helping us to navigate some thorny issues.

She and her staff have been to every region of the state, reached out to other Cal/EPA departments and other state agencies, as well as local government, business, environmental, and NGOs. Always looking to find common ground and new ideas for strengthening California while achieving our clean air goals for our residents.

She also has worked and is known well beyond California's borders as an active member of a national group -- I want to call them a cabal, but that wouldn't be right -- small business advocates she's worked with for a number of years on our behalf.

In 2014, she's going to be focusing on leveraging these relationships that she's developed to help small businesses become more effective advocates and partners for reducing air pollution and greenhouse gas emissions while also helping them to identify new economic opportunities in these areas as well.

And with that, I will turn this over to Richard Corey.

DEPUTY EXECUTIVE OFFICER COREY: Thank you, Chairman Nichols.

I've had the pleasure to work with La Ronda during the development and implementation of several rules and regulations and found her knowledge of the Ombudsman's role and tools for thinking about regulations from a small

business perspective very useful. In fact, I began a working relationship with La Ronda about 20 years ago when she was Ombudsman with the South Coast Air Quality Management District. It's been a long and productive experience.

I'm encouraged by La Ronda's creative approach to problem solving. And one recent example is the assistance she's provided to small fleet owners required to comply with the truck and bus regulation.

Ms. Bowen and her staff continue to identify new ways to engage all of ARB's customers and to help us build bridges of mutual trust, understanding, and opportunity. In today's update, the Office of the Ombudsman will show how it continues to evolve into an important agency resource for demonstrating the connection between California's goals of clean air, lower greenhouse gas emissions, and a healthy economy.

And with that, I'll turn it to La Ronda.

OMBUDSMAN BOWEN: Thank you, Mr. Corey.

(Thereupon an overhead presentation was presented as follows.)

OMBUDSMAN BOWEN: As you know, the policies and regulations of the Air Resources Board are influential around the world, across the nation, but most immediately here in California as we shift to a low carbon economy.

The Chairman's Office of the Ombudsman serves to connect policy makers with policy implementers at every level. California's small businesses are key stakeholders in both arenas.

Today, I will give you a report on how we are working to meet our legal mandates for business assistance, outreach, stakeholder engagement, and problem investigation and resolution, and also share an exciting trend in our state, a trend that's bringing together California's AB 32 policy implementing agencies and also business organizations, funders, technology developers, and local and federal government partners. All are focusing on creating a healthier environment, a strong competitive economy, and equity for all. The Ombudsman is watching this development as it is supportive of the goals of the agency and directly affects our small business customers.

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OMBUDSMAN BOWEN: The Office of the Ombudsman connects ARB and small business interests. We are a public resource. We provide outreach. We work with international visitors and -- well, we serve anyone who comes to us. We proactively reach out to partners across the state and the nation to gain knowledge that can assist ARB in the development and implementation of its policies.

We seek resources to connect California's business owners to the tools they need to engage, understand, implement, and benefit from ARB policies. We're continually building new relationships while strengthening existing ones. We're a public resource for answers to questions that range from compliance to science to business opportunities in the green economy.

We support California's efforts to provide K through 16 education, as well as being a resource to facilitate ARB's International Visitors Program. Perhaps the easiest way to think of the Ombudsman is a place where timely connections of people, policy, and resources reduce problems and identify opportunities.

This presentation will walk through the highlights of 2013, provide a few examples of our work, and conclude with a look at what's ahead in 2014.

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OMBUDSMAN BOWEN: The Office of Ombudsman is organized by various regions. The overall benefits of addressing climate change touch every person in every part of our state. The Ombudsman staff is divided into these regions. And there are a few of them here. I'll ask them to stand. That's Anthony Moran for the north coast and Margaret Minnick, who does our international visitors program. Others are out in the lobby and one is at a

meeting today.

It just so happens the way we're divided into these regions roughly mirrors the focus of other statewide programs, including two I will discuss briefly as an example of how synergistic our state policies are becoming. Ombudsman staff are tracking these developments as part of their regional assignments. I believe President Obama laid the foundation for these programs that are synergistic in our state as part of his cross agency priority goals. He told the Cabinet, "We want to make sure every single agency, even as they're tending to their energy initiatives or providing transportation or defense that we're also thinking about how we're advancing the cause of giving small businesses and entrepreneurs opportunities to start creating the next Google, or the next innovative company that's going to create jobs and improve our economy." That was from the entrepreneurship and small business goals.

The two programs that I want to discuss are the California 2013 Economic Summit, which supervisor Gioia participated in and the growing network of innovation hubs that are now under the Governor's Office of Business and Economic Development. From these, we can see new and stronger collaborations and partnerships developing to foster the development, deployment, and manufacturing of

new technologies in areas like energy storage, water efficiency, and agricultural waste technologies. Entrepreneurs and small business owners are highly engaged statewide, and all of these things touch our goals.

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OMBUDSMAN BOWEN: California has -- I'll talk about the Summit now. In 2013, two important economic leadership organizations, California Forward and the California Stewardship Network, divided California into 16 regions and held Economic Summits with the goal of generating jobs, improving the ability of California regions to compete for new investment, and promotion of sustainable growth, all while honoring the triple bottom line of economy, equity, and environment.

Key areas of interest are infrastructure, including water system renewal and broadband, innovation, working with Go-Biz to develop advanced manufacturing I Hubs, Capital Cal Opps Round Table developed access to capital guidebook and is working with the California Endowment and other organizations to find new models for getting funding to small businesses. This is really important for us going forward.

There is a panel on regulations. They're working on CEQA documents. So again, we were very happy to have Supervisor Gioia there representing ARB at the Los Angeles

one.

The California Innovation Hub Initiative is a program designed to enhance the State's competitiveness on a national and global scale by stimulating partnerships, economic development, and job creation. The, I Hubs leverage assets such as research parks, technology incubators, universities, and federal research laboratories to provide an innovation platform for start-up companies. There are new 16 I Hubs statewide under the Governor's Office of Business and Economic Development. You can see in this map how these regions are developing with I Hub partnerships. And our staff is tracking them and participating to the extent that we can.

Just an example of what's going on in the I Hub arena because again it touches everything we're doing, everything from agricultural technology to energy use and new information technology. In the north coast, they have a focus on Agritech and food products, information technology broadband and Medtech. In the Sacramento region, Clean Tech led by the Sacramento Area Regional Transit Alliance is producing quite a few companies, including one called Atlas Disposal, which Supervisor Serna is aware of. And they were a previous winner of the Cool California award. So just also focused on waste to energy companies.

In the Bay Area they have IGate which focus includes green advanced transportation, demonstration, and advancement, very key to us. And the San Joaquin Valley has two I Hubs, including I Hub San Joaquin Valley, with a focus on Ag Tech and ways to develop useful products from waste and water cleanup. There are two hubs in the Kern and Ventura and Coachella and San Diego and Imperial Hubs include a focus on biofuels from algae.

These examples begin to show the many initiatives in our state that directly affect the success of ARB's efforts to move forward toward a lower carbon economy while ensuring healthy small business and reductions of criteria pollutants.

So there are many ways to define our small business customers. Those are the ones we focus on. We can use the Clean Air Act, the Small Business Administration, the Department of General Services. We can use ARB's own small fleet rule or we can use California Public Utility's definition. Or we can define them by the reasons they're in business, whether to pass the business on to a family, to have a job they control, or grow and divest.

But perhaps a more useful way to understand business owners and entrepreneurs may be by these common traits: Understanding these connect small businesses to

ARB policies and help explain why our outreach and engagement with them is so important. Small business owners, I've noticed, tend to be independent, which makes them less likely to be joiners and harder for us to reach. They tend to be innovative, which is one reason so many of the new innovations and technologies come from this sector, innovations we need to make our policies work. Can you imagine Apple, Google, each was a micro business not that long ago. Today, we can turn off the lights at home while waiting in line at the grocery store with an ap on our phone. Couldn't do that ten years ago.

And where would we be without the plethora of new green building materials from energy saving windows to water permeable recycled landscaping material. We work with San Joaquin Valley Recycling Group.

They're also careful risk takers. This is why they're so good at solving problems and the key reason we need to encourage them early in regulatory and policy planning. They're creative. Good at seeing the opportunity and problems. They're community-oriented as we've seen with the Cool California Small Business Award winners, and they have limited resource. These businesses have limited time and money to devote to regulatory issues, which is why we need to employ tools that make compliance easy, affordable, and accessible. We have some

of those tools, by the way: Peer mentoring, the State's Green Business Program, the Cool California website, hotlines. All these tools help. And we look forward to gaining more insight into how we can reduce the time and cost of compliance further with our Small Business Panel.

In 2013, we made quite a bit of progress against our goals. We identified financing resources, partners, and strategies that might be suitable for meeting some of the needs of California's small businesses and the entities that support them in emissions reduction.

We investigated crowd source funding, ways to buy down interest, and ways to help our customers become more credit worthy. We'll continue these efforts in the coming year.

The greatest financial need that we identified in 2013 was compliance with the 2014 truck deadline, as everyone knows, followed by technology demonstration money, followed by financial and technical assistance for green business programs and other programs that help us verify greenhouse gas emission reductions.

The Truck and Bus Rule became the biggest multi-stakeholder effort of the year with Ombudsman assisting Erik White's team and others in dispelling widespread rumors and myths, clarifying rule requirements, and communicating Board actions and rule flexibility to

callers and business groups. I will share a few metrics in a moment from this program, but you'll hear Mr. White's full report in April.

We implemented the Small Business Compliance Opportunities Advisory Panel and we will also discuss that. That was great.

And we did the first work to educate ourselves on small business and climate resiliency. We were fortunate to get a volunteer intern for five weeks in the summer of 2013 to begin an investigation into the role of small businesses in helping their communities recover from a climate disaster. We surveyed approximately 200 environmental award-winning small business owners and learned they see themselves as needing to get their business up and operating, and they want to be there for their customers. And they don't think of this in terms of climate.

The Ombudsman continued to build and strengthen networks with diffusion of ARB policy and regulatory objectives and to bring greater knowledge of our external customers in-house. For example, as a result of giving a talk at a water focused event, I learned about a climate model for water that the water agencies had developed. I was able to connect internal ARB modeling staff to the water modelers. Both expressed the value of the shared

knowledge enhancing their work. We're constantly able to make those kinds of connections. We're going to talk about the truck outreach.

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OMBUDSMAN BOWEN: This is an example of the extensive outreach performed by ARB and targeted at small businesses in the heavy-duty diesel compliance assistance effort. To assist callers more effectively for this year's compliance cycle, the Compliance Assistance and Outreach Branch implemented a greatly improved phone system which provided fact sheets and quick tips to callers. Those were often sufficient to answer the caller's questions without the assistance of an operator. Callers can now hold until the call is answered by the ARB staff person. And to supplement existing hotline staff, the team created a reserve team of staff throughout ARB who underwent in-depth training. This effort allowed ARB staff to answer as many as 600 live calls per day, and their highest day was 640 calls. That's a lot of people on the phone.

To illustrate this improvement when comparing it to 2012, in the 2012 time frame, ARB received approximately 45,000 calls on the hot line and had a call backlog of a month and a half. During the current compliance cycle, staff has received 65,000 calls, with a

voice mail backlog averaging less than one week. Great improvements.

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OMBUDSMAN BOWEN: In addition, the Compliance Assistance Outreach Branch directly engaged with stakeholders throughout California. Throughout 2013, this outreach included numerous trainings, workshops, field inspections, and Spanish and Punjabi outreach.

ARB held 177 diesel-related training classes and webinars with more than 5,000 attendees. To address the proposed amendments of the truck and bus rule, six workshops or meetings were held in South Coast, Central Valley, Sacramento, Redding, San Diego, and Imperial valley.

In collaboration with the Highway Patrol, Air Resources Board provided handout materials during monthly, week-long field enforcement events. This provided a chance to directly hand educational materials to truckers and answer their questions.

Working with the Public Information Office, these field enforcement events generated 20 television and printed news and media stories. Spanish language media, including Spanish language TV and newsprint, were also present at these events.

Additional compliance assistance targeted to the

Spanish-speaking community included three Spanish language trainings and attendance at numerous question and answer outreach events at the California/Mexico border, including at Otay Mesa and Calexico. These were conducted in cooperation with the local Chambers of Commerce and California Highway Patrol.

Outreach at the California/Mexico border has been critical to ensure a level playing field among all those affected by both the truck and bus rule, as well as the drayage regulation so our company don't have to compete on an uneven playing field.

Staff also attended several Punjabi events. Additionally, the staff attended more than 50 business events, such as conferences, outreach days, and other speaking engagements by request.

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OMBUDSMAN BOWEN: The Small Business Compliance Opportunities Panel, we implemented the Small Business Compliance Opportunities Panel which was authorized by CAPCOA and the Air Resources Board late in 2012. The 15 panel members represents a cross section of California small businesses, including the owner of a small newspaper, a farm, an auto dealership, a waste recycling company, an environmental consulting firm, and a trucking firm.

The group is co-Chaired by Larry Greene, the air Pollution Control Officer for the Sacramento Air District, and me. This is a volunteer group, and members have a long history of constructive relevant regulatory engagement.

The group will meet four times a year throughout the state, and all meetings will be accessible electronically. We'll look to the group for input on policy and regulations, outreach strategies and other small business issues. The input is advisory and staff will keep notes of all the meetings.

The first meeting was a teleconference with the scoping plan staff to obtain a small business perspective on the draft. Participants made comments on economic analysis, broadband fuels, and other items. And staff is considering these suggestions and ideas along with other comments received.

The Ombudsman will work with the scoping plan staff to schedule an additional update in March time frame. In addition to engaging on the scoping plan update, the next step for the group is to help them establish their short-term goals and to begin work on how we can better engage California small businesses with ARB's policies and regulations.

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OMBUDSMAN BOWEN: The Ombudsman is a public resource for answers. We get a lot of calls on our hotlines. The two busiest hotlines in the Air Resources Board are the 866-Diesel line and ARB's El Monte hotline. The diesel hotline is managed by the Mobile Source division and Ombudsman manages the El Monte and Sacramento hot line.

ARB's El Monte hotline is listed on the DMV website for any questions regarding vehicle aftermarket parts, anything about recalls, registration holds, smog complaints, questions about high occupancy stickers. In 2013, the two Ombudsman lines received 67 total calls compared to about 74,000 in 2012. We actually attribute that to improvement in the diesel line the fewer diesel calls.

Customers have a variety of questions, but most calls, about 16 percent, were associated with aftermarket parts. The next two issues were questions regarding recall assistance and the diesel regulation. We also handled about 13,000 Spanish calls.

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OMBUDSMAN BOWEN: The next slides are a couple of case studies for you.

CHAIRPERSON NICHOLS: Would you lift your microphone up a little bit? I may be the only one, but

your voice is very soft.

OMBUDSMAN BOWEN: Although the Ombudsman is focused on small business, we work to connect all interested stakeholders to the right solutions for their engagement with the Air Resources Board. The next few slides are examples of the various places where the Ombudsman, the public, and ARB policies intersect.

So we had a catalytic converter replacement challenge. A customer took his vehicle, which failed smog check, to the dealer and was told it would cost him about $1900 for a new catalytic converter. He called the ARB to see why the cost was so high. He felt there should be a better solution. After conforming the dealer price, staff informed the customer he could use a BAR certified repair facility and receive financial assistance, potentially up to $500, for the smog-related components of the repair. The BAR facility would be more likely to suggest an aftermarket part, if one was available.

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OMBUDSMAN BOWEN: ARB provides in partnership with NexTen and U.C. Berkeley ARB provides the Coolcalifornia.Org website. This AB 32 early action item has continued to grow in usefulness and popularity with small businesses, as well as cities, individuals, and schools. One of the Cool California benefits to small

businesses who use the website is the ability to compete for a Cool California award. Even though this is -- if you recognize the individual in there, might be Supervisor Roberts, even though this the 2013 retrospective report, I can't resist bragging on the 2014 awards which happened February 12th.

The 2014 awards was the first time we had a Board member participate in the inspection of a business. That was Supervisor Roberts. It was the first time that every single one of the 13 winners had either their state Senator or Assembly member represented. And it's the first time that seven of the winners had both their State Assembly and Senate represented. They attended either personally or sent a staff member. Many attended personally.

With Cool California, businesses save money. They educate each other, their customers, and their communities on ways to reduce greenhouse gas emissions. And they have become some of ARB's best ambassadors for green business practices. Small businesses are the common denominator between the State policies, regional and community level action, particularly on climate change.

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OMBUDSMAN BOWEN: Next is our education program. Under our Air Quality Education Program, ARB works with

educators, businesses, and other organizations to make the environment part of the normal thinking processes of today's youth who will be policy makers, business owners, and parents of the future.

As we do for businesses, we constantly track what is happening around the state on K through 16 science, technology, engineering, math, and I understand they've now added arts education. There is a growing interest statewide in the program called Linked Learning, which intends to connect high school students with work experience and technical training through internships with businesses prior to graduation from high school so that whether or not they chose college, they will have a skill and a pathway for employment. Many of the businesses they're connecting them to are green businesses.

We are happy to help students learn more about the environment and air issues in particular through activities like Sacramento Municipal Utility District's Youth Energy Summit, Cal/EPA Earth Day, Take Our Kids to Work Day, and State Scientist Day.

Through these events, students have hands-on opportunities to develop projects in green energy, energy conservation, and sustainability. And SMUD's Youth Energy Summit gives youth and teens an opportunity to present their projects to a panel of judges on the steps of the

State Capitol for a chance to one scholarships.

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OMBUDSMAN BOWEN: Sometimes we get requests from students -- this is just an example -- where a student asks us to help them with a particular project. The enthusiasm these students show for their science and environmental projects always amazes us.

The International Visitor Program is very important to Air Resources Board. ARB rules and policies have long attracted international interest. However, with the implementation of the Scoping Plan, the launch of cap and trade, and the Governor's MOU, Memorandum of Understanding with China, international interest in ARB is growing exponentially. In 2013, the number of delegations nearly doubled, going from 25 in 2012 delegations to 45 in 2013. Some delegations consist of one or two individuals, while others have ten or more. In 2013, China and South Korea sent 30 visitors each, followed by Mexico 21, Singapore with 17, and the Philippines with 13.

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OMBUDSMAN BOWEN: Clearly, combating climate change and reducing air pollution will require accelerated action on the parts of many governments. This map shows regions of the world who have expressed the greatest interest in ARB's policy, programs, and regulations.

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OMBUDSMAN BOWEN: As we go forward, achieving our 2020 climate goals and State and federal clean air policies, the many connections between small business innovation and ARB interests are noticeable. Thus, a key focus for Ombudsman in 2014 is working with the Small Business Advisory Panel and ARB professional staff to develop priorities for small business engagement. We want to know where are the best opportunities for synergy and productivity.

Ombudsman has been very focused on establishing and nurturing external partnerships in the past. In 2014, we intend to do more outreach to our internal customers without losing ground with our external stakeholders.

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OMBUDSMAN BOWEN: We are anticipating small business needs. There are a lot of challenges ahead, as I have presented, a lot of opportunities as the State continues to move forward with the Scoping Plan, California's Economic Summits, Sustainable Communities Strategies, I Hubs, Linked Learning. Our goal is to connect people with people and people with resources to maximize the environmental and economic benefits of collaborative efforts.

We have identified a few areas where we know

small businesses needs persist and where we realize we also have information needs. We will continue working to develop and discover answers in 2014.

We know our small business customers and often the organizes that serve them need help removing barriers to deploying cleaner technology and to help obtain affordable financing to meet or exceed regulations and to become stronger businesses. We will continue to identify and collaborate with others to make more progress in these areas.

On the climate side, we would like to better understand the role of small business in helping the well-planned cities of the future and the not-so-well-planned communities of the present bounce back from weather-related disasters. And we want to know if more sustainable business practices help the business itself return to normal operations sooner. Answers to these questions may lead to new sources of financing for green business practices that reduce emissions and possibly make aggressive on-site improvements more affordable.

I'm very excited about the direction California is going with the continued leadership of the Board and the support of our Chair and the continued support of our Executive Officer. I feel sure that 2014 will be a very

progressive year for the Air Resources Board and for California's small business owners. This concludes my presentation.

CHAIRPERSON NICHOLS: Thank you. You didn't mention how many staff and what other resources you have to work within this office.

OMBUDSMAN BOWEN: We have five professional staff in Sacramento, and we have four part-time staff on the hotlines. And we have one professional staff in El Monte. The L.A. representative, for those of you from L.A., retired in September of 2013. We have found a wonderful replacement for him. He was based in Sacramento. She will be based in Los Angeles and start on March 10th. She has great relationships with the air districts there and a long history in both criteria pollutants and also working with our programs. She's been a consultant for one of the best, in my opinion, small consulting firms in the state for 20 years.

CHAIRPERSON NICHOLS: Well, I asked you that question in order to illustrate the fact that all of those things you reported on were being done by a rather small number of people, although obviously with a lot of support and assistance from other parts of the organization. But considering the importance of small business to the state's economy and to our own work and, frankly, the role

they increasingly play, I think they may not be perhaps able or have it as a priority to come nd attend Air Resources Board meetings. But increasingly, they're active in their communities, as you said. And so we hear from them indirectly as well as directly through their elected representatives, through their Chambers of Commerce, et cetera.

The fact that we're now devoting at least a significant amount of our resources and attention to this community is obviously a step in the right direction. I think it's really something that we've had in theory for a long time, but I think we're now finally beginning to implement it in a much more effective way.

Are there Board members who would like to ask questions or comment on this item?

Yes, Supervisor.

BOARD MEMBER SERNA: Thank you, Madam Chair.

I just want to publicly thank LaRonda and all her limited staff for the great work that you do. In my brief time serving on this Board seem to be extremely responsive, even going as far as following folks out the chamber to make sure they have your card and make sure they understand there is an Ombudsman for this agency.

All the great work that staff does, all the substantive work, the scientists, the policy analysts,

that's kind of the guts of this organization. But the Ombudsman really is the face of it. And it really is what I think a lot of individuals, organizations, whether they be small business or other air districts or environmental justice organizations, they I think greatly appreciate the work that you and your staff do to make sure that they get explanations clarified.

I certainly want to specifically call out the fact that there's a high level of concern for making sure that what you do is done in various languages. That's extremely important, especially to the area that I specifically represent. So I just want to express my deep appreciation for all that you do.

CHAIRPERSON NICHOLS: Great. Thank you.

Supervisor Roberts.

BOARD MEMBER ROBERTS: Yeah, thank you.

I just want to say the efforts to hold the workshops and other things around the state have really helped people understand what we're trying to do is so important, because many people want to help if they know what to do. And the rules and regulations are extremely confusing. Maybe not to us, but to others. So it's really of great benefit. I know I'm surprised the number of calls is so low. I think rival some of those departments you have.

CHAIRPERSON NICHOLS: How many were from you?

BOARD MEMBER ROBERTS: But I didn't realize at the time we went to visit the small business in San Diego that that was a first. I was sharing with the Chairwoman if everybody was as conscious of their activities as the couple in the business that we represented, we would not need an air Board in California. So maybe that's something to shoot for.

But thank you for everything you're doing. As a long time member of this Board, there is a significant difference from what we've seen in the past. Appreciate it.

CHAIRPERSON NICHOLS: Okay. Well, thank you. Thank you very much, LaRonda.

And we'll move next to something that is confusing to many people, which is the science of ozone and PM2.5 atmospheric chemistry and how it's used in the development of strategies for meeting air quality standards. This is at the core obviously of what we do. It's the technical and scientific basis for our regulations. And while I don't think we're going to get a science class here, we are going to get a pretty good summary I believe of what the issues are that go into those standard setting process.

But before I call on our Executive Officer to

introduce this item, I do want to mention that contrary to putting us out of business, although that could be a long-term goal, my objective is to keep us in business. And in order to do that, we need to have Board members who are confirmed by the Legislature. They have to be appointed and confirmed. So I need to mention to those who follow our work that we are delighted that two of our Board members received a vote in favor of confirmation yesterday from the Senate Rules Committee, and that would be Ms. Mitchell and Mr. Gioia. And last month, we failed to acknowledge that Mr. Serna also had gotten his confirmation vote. So we're batting -- whatever it is. We're batting a thousand. Thank you. We're doing as well as it's possible do on this front. I want to congratulate all of them.

I haven't had a chance to attend the hearings, but I get reports back, as you can imagine, both from our staff and from others who are following this process and, you know, you all were very impressive. I'm just delighted we're moving forward. Thanks.

Mr. Corey.

DEPUTY EXECUTIVE OFFICER COREY: Thank you, Chairman Nichols.

This is the second in a series of informational items staff will be providing on air quality and the State

Implementation Plan development.

During the January Board meeting, you heard about the significant air quality progress that we've achieved over the years. Today, staff will discuss the science of ozone and PM2.5 atmospheric chemistry and how it's used to develop control strategies to meet the federal ozone and PM2.5 standards.

The South Coast and San Joaquin Valley are the two regions that face the greatest challenges in meeting federal ambient air quality standards. Field studies, data analysis, and air quality modeling have provided a comprehensive scientific understanding of the chemistry of ozone and PM2.5 formation in these two regions.

In addition, much has been learned regarding the roles of NOx, VOCs, and other precursor pollutant reductions in reducing ozone and PM2.5 levels in these areas. So this will be a joint presentation by Ajith Kaduwela in our Modeling and Meteorological Branch and Karen Magliano, Assistant Chief of the Air Quality Planning and Science Division.

And with that, Ajith.

(Thereupon an overhead presentation was presented as follows.)

STAFF AIR POLLUTION SPECIALIST KADUWELA: Thank you, Mr. Corey. Good morning, Madam Chair and members of

the Board.

This is the second in a series of informational briefings on the development of the State Implementation Plan, or SIPs, for the most recent 8-hour ozone and annual PM2.5 standards which are due in 2016. The first was presented last month on air quality progress and the status of compliance with current standards. Ongoing control efforts have brought all areas of the state closer to meeting federal air quality standards. However, areas such as the South Coast, San Joaquin Valley, and Sacramento still face significant challenges. Designing effective attainment strategies for these regions requires decision making that is based on a robust scientific foundation.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: Today, we will present the scientific basis on which these SIPs will be built. We'll start with basic description of atmospheric chemistry and how that interferes with other atmospheric processes, such as emissions and meteorology. That would be followed by an overview of preliminary scientific findings for both the South Coast and San Joaquin Valley air basins.

Finally, Karen Magliano will describe how this scientific foundation is used to inform the development of

emission control strategies.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: ARB has a long history of strong investment in air quality research, conducted in collaboration with local air districts. Partnerships with academic institutions have also provided a valuable mechanism to leverage ARB resources and expand our expertise.

Over the years, a succession of field studies or data collection efforts have been conducted in both the South Coast and San Joaquin Valley. These studies have provided an understanding of the nature of air quality problems specific to each region. While there are aspects that are common to both areas, there are also unique characteristics that reflect differences in sources, topography, and meteorology.

The design of control strategies must therefore consider the most effective mix of statewide programs coupled with region-specific approaches that best address the needs of individual areas.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: California's regulatory programs have embodied the science driven approach for many decades. The Federal Clean Air Act amendments of 1990 emphasized control of volatile

organic compounds, or VOCs, for reduction of ozone levels based on the broad national understanding of ozone chemistry. However, early on ARB's research efforts demonstrated the importance of also controlling oxides of nitrogen, or NOx, given the nature of the ozone problems in the state. This multi-pollutant science-based approach has resulted in substantial air quality progress, even as federal standards have become more health protective over time.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The focus of this presentation is on the most recently adopted federal air quality standards. This includes an 8-hour ozone standard of 75 parts per billion and an annual average PM2.5 standard of 12 micrograms per cubic meter.

The SIPs for these two standards are due to the U.S. Environmental Protection Agency in 2016. Even as work is underway to address these standards, U.S. EPA is continuing their periodic review of the most recent health science. Their latest assessment, released just two weeks ago, recommends that the 8-hour ozone standard be lowered further to protect public health to a level between 60 and 70 PPB.

This initial proposal will be reviewed by the Clean Air Scientific Advisory Committee next month. EPA

is then expected to issue a proposed level by the end of 2014, with the final standard issued in 2015. Attainment deadlines and SIP time lines will be established after the new standard is promulgated.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: This next section of the presentation will begin with a basic description of atmospheric chemistry and its interactions with other atmospheric processes, followed by a discussion of the factors that influence how ambient pollutants respond to emissions reductions.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: There are many complex chemical reactions that govern the formation of both ozone and PM2.5 in the atmosphere. Shown in this slide is a very basic summary of those reactions. The first box shows that oxides of nitrogen, denoted here in blue as NOx, react in the presence of sunlight with volatile organic compounds, denoted here in red as VOC, to form ambient ozone.

Ozone is almost entirely produced in the atmosphere due to chemical reactions. In contrast, PM2.5 can be both directly emitted as well as formed in the atmosphere through chemical reactions of gaseous precursors, which is known as secondary PM2.5.

The second box shows these chemical reactions that form ammonium nitrate particles, ammonium sulfate particles, and secondary organic aerosols.

Please note here that the same precursors that were responsible for ozone formation, namely NOx and VOC, also appear in the PM2.5 reactions. Therefore, when designing emission control strategies, we must carefully evaluate the impacts of precursor reductions on both ozone and PM2.5.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: While these reactions may look straight forward atmospheric chemistry interacts with emissions and meteorology to make the atmosphere a very complex multi-pollutant system. Part of this complexity is due precursor emissions are not uniform in either space or time. Another is that meteorology moves emissions around, effecting the relationships between emissions sources and ambient pollute concentrations.

Also, chemical reactions occur over different time scales, some very fast and some very slow. This gives rise to a highly complex or non-linear response to emissions reductions.

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STAFF AIR POLLUTION SPECIALIST KADUWELA:

Fortunately, this complex atmospheric system obeys a few simple rules. For example, controlling common precursors provides the basis of an effective control strategy. However, due to the complex interactions within the system, the effectiveness of precursor reductions may vary by region or even within a region. It may also change over time depending on the relative rate of emissions reductions being implemented.

As a result, there can be differential rates of progress within some locations improving more quickly than others. However, the overall control strategy must ensure that all locations meet the federal standard by the specified deadlines.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: Therefore, it is important to understand these relationships in developing strategies to ensure ongoing air quality progress. Quantifying the benefits of precursor reductions require a methods that can integrate all these different phenomena in the atmosphere.

For this reason, we utilize an air quality modeling system that incorporates mathematical representations of the best understanding of these complex atmospheric processes.

Within this modeling system, emission processes

are estimated with both in-house and U.S. EPA methodologies. Meteorological processes are simulated with the weather, research, and forecast model, with the current industry standard. Finally, ambient concentrations are simulated with U.S. EPA's community multi-scale air quality model.

The picture on the bottom right shows the modeling regions or domains we routinely use for regulatory applications. The small red domain covers the South Coast air basin. The larger violet domain covers the central and northern California, including the San Joaquin Valley. The even larger blue domain covers the entire state.

Vertically, these domains extend to the lower stratosphere or approximately 50,000 feet high. Within these domains, the finest time scale, calculations are done on a second by second basis. Because of our commitment to strong science and long history applying these types of models, California has an internationally recognized air quality modeling program, combining the expertise of staff scientists with those in the university of California system.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: While each SIP is developed based on the best science available

at the time, we continue to carry out new research efforts to improve our knowledge base. To that end, ARB funds several SIP-relevant research projects each year. In addition, staff designs and participants in field studies to improve modeling databases. Listed here are recent field studies we have participated in. They clearly demonstrate researcher's love for acronyms. In 2010, 2 ARB participated in field study known as CalNex together with the National Oceanic Atmospheric Administration, or NOAA. Dr. David Parrish of NOAA will present a summary of the scientific findings of CalNex at an upcoming Board meeting.

The last study on the list, Discover AQ, was conducted by NASA in the San Joaquin Valley about a year ago. We are now in the data analysis and modeling stages of this program.

In addition to field studies, ARB also funds three biennial international conferences at the University of California at Davis. These conferences focus on atmospheric chemical mechanism methodologies to model particulate matter and weather modeling relevant to the complex terrain of California.

Finally, staff publishes important scientific findings relevant to SIPs in peer-reviewed international scientific journals.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The modeling system we just described can be used in three important ways to guide strategy development. As previously mentioned, it is used to assess the relative effectiveness of controlling different precursors. We also use this modeling system to identify the magnitude of precursor reductions needed to attain a given standard. In addition, we can use the modeling system to evaluate the impacts of emissions from different source sectors or subregions on ozone concentrations.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: I will now discuss findings from recent modeling for both South Coast and San Joaquin Valley conducted by ARB in collaboration with the air districts.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The most recent results from PM2.5 modeling were presented during the January 2013 Board meeting for the 24-hour PM2.5 SIPs for both San Joaquin Valley and the South Coast. This modeling work built upon previous research developed for SIPs for the annual average PM2.5 standard that were adopted in 2008 and has been documented in SIPs, presented at public workshops, and is now being published

in scientific journals.

This science identified that attainment of the 24-hour annual average PM2.5 standard requires reductions in both NOx and directly emitted PM2.5. This dual strategy provides regional benefits from NOx reductions, with reductions in directly emitted PM2.5 from sources such as wood burning and commercial cooking activities for addressing targeted localized attainment needs. We expect that a very similar strategy will also be needed to attain the current annual PM2.5 standard of twelve micrograms per cubic meter.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: As a result of these strategies, the South Coast has already attained the annual PM2.5 standard of 15 micrograms per cubic meter one year ahead of the 2014 attainment date. However, given the adverse meteorological conditions of this winter in the San Joaquin Valley, PM2.5 levels will have to be very low for the rest of the year for the valley to also attain.

The attainment dates for the 24-hour standard of 35 micrograms per cubic meter are 2014 for the South Coast and 2019 for the San Joaquin Valley. The focus of the remaining portion of the presentation will now turn to the longer-term ozone challenge.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The initial modeling is already underway for both the South Coast and the San Joaquin Valley ozone SIPs. The modeling continues to build upon the comprehensive work we have conducted in these regions for the previous SIPs. During this initial modeling, we have focused on evaluating responses to broad precursor reductions to understand relative ozone response.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: We start with a series of model runs where we reduce the emissions of one precursor at a time from 2012 emissions levels. For example, we reduce the emissions of either VOC or NOx, while keeping the other unchanged.

The benefits are then expressed as a percentage of ozone remaining with respect to 2012 levels. This allows us to compare the relative response of the precursors to each other. We also conduct model runs to examine the benefits of potential combinations of VOC and NOx reductions. These foundational assessments require many individual modeling runs on multiple computer systems. Through advances in computing speed and efficiency, we have greatly increased our capacity, allowing us to complete many more analyses.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The next series of slides will walk you through the results of individual precursor reductions in the San Joaquin Valley and South Coast. Starting with the valley, this figure shows the benefits of incremental NOx reductions, while keeping VOC emissions at 2012 levels. As the current control program will already provide a 50 percent reduction in NOx by 2032, the left bar begins with examining the impacts of 75 percent reduction. This level of NOx control would decrease ozone levels by approximately 20 percent. That is the remaining ozone is about 80 percent of the 2012 value.

As you can see, this highlights the highly non-linear nature of ozone chemistry. The right bar is then for a 90 percent NOx reduction, producing a nearly 35 percent ozone reduction, or roughly 65 percent of ozone remaining.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: Next is the VOC counterpart of the previous figure. We see here that a 75 percent reduction in VOC would only decrease ozone levels by four percent, with remaining ozone still at 96 percent of the 2012 levels. Further reductions up to 90 percent yield only a very small further benefit.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: To facilitate a comparison between the two precursors, this figure now combines the previous two figures into one. The left blue bars of each pair represent the NOx only reductions from the first chart, and the right, red bars, reflect the VOC only reductions.

As shown, reducing NOx in the San Joaquin Valley significantly more beneficial than VOC reductions. Given current ozone levels in the valley and the progress needed to meet the federal standard, NOx reductions provide the pathway to attainment. Note that this is also consistent with the effectiveness of NOx reductions for the PM2.5 attainment.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The final figure shows the benefit of precursor reductions for the South Coast. Again, each bar represents an individual precursor reduction from 2012 levels while keeping the other precursors unchanged. The precursor reductions are now 75, 80, and 90 percent to better highlight the progression in response that occurs in the South Coast.

In contrast to the San Joaquin Valley, a 75 percent reduction in VOC is more beneficial than a 75 percent reduction in NOx, though each provide about 15

percent reduction in ozone. At an 80 percent reduction, NOx becomes slightly more effective than VOCs. However, by 90 percent control, NOx reductions become significantly more beneficial than those of VOC. Thus, VOC reductions will be important of the early stages of the further precursor reductions, but deep NOx reductions on the order of the 90 percent shown here will be essential in meeting the standard.

These results, therefore, suggest that a combined strategy of VOC and NOx reductions will be necessary to ensure continue progress towards the ozone standard in the South Coast.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: In addition to looking at the effects of reducing emissions of various precursors, we can also evaluate various combinations to guide potential attainment strategies. These results can be displayed in map form for an entire region to understand the sub-regional progress as monitoring locations progressively come into attainment with increasing levels of control.

The map of the South Coast air basin on the left shows the measured 8-hour ozone levels in 2012. This is the same map we showed you last month during the air quality progress Board presentation. The area shown in

dark green already attains the current standard of 75 PPB. The light green area attains the previous 84 PPB ozone standard, but does not yet attain the current 75 PPB standard.

The areas shown in yellow and red are still significantly above the current standard. The map on the right illustrates modeling results for a potential precursor combination representing a 75 NOx reduction and 40 percent VOC reductions from 2012 levels. A much larger area would need the 75 PPB standard and the red area has disappeared. Maps such as these with other potential combinations provide a valuable tool in the SIP planning process.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: Models can also be used to identify ozone contributions from different source sectors or locations. Although we are just starting these types of model runs, there are other data sources that can provide an initial indication of what is occurring. For example, we can look at the distribution of NOx emissions throughout a region as well as the spacial patterns of ambient NOx measurements collected from satellite observations.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: The map

on the left shows the spacial distribution of NOx emissions in the South Coast in summer of 2012. On the right is a satellite picture of the ambient NOx concentrations that resulted from these emissions for the same period. Both illustrate that emissions and ambient concentrations of NOx are fairly uniformly distributed across the region. This suggests that NOx reductions will be needed to occur over wide areas and across many source categories.

We are also investigating the NOx distributions in the San Joaquin Valley. Although NOx emissions are more concentrated in discreet urban centers and along the I-5 and Highway 99 corridors, weather patterns mix these pollutants regionally.

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STAFF AIR POLLUTION SPECIALIST KADUWELA: As we continue with these modeling efforts, the next steps will be further detailed assessments of both NOx and VOC benefits. We will also be evaluating the contribution of natural sources of precursors and long-range transport into California.

Finally, additional modeling runs will be conducted to understand the impacts of individual source sectors and source regions.

I will now hand the presentation over to Karen.

ASSISTANT CHIEF MAGLIANO: Thank you.

In this last section of the presentation, I will describe how we use the scientific information to inform and guide the SIP strategy development process.

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ASSISTANT CHIEF MAGLIANO: The technical analysis and air quality modeling that Ajith described has demonstrated a number of important findings on the nature of PM2.5 and ozone in each region and the response to emission reductions.

In a multi-pollutant, multi-region framework, NOx reductions are essential to attaining both the ozone and PM2.5 standard in the South Coast and San Joaquin Valley.

Given the severity of current air quality and the stringency of the federal standards, very large NOx reductions will be required, spanning many source sectors. However, in addition to NOx, reductions in other precursors are also important to address individual area or pollutant needs. For example, achieving further NOx reductions will be essential in the South Coast in parallel for NOx in order to ensure ongoing air quality progress.

VOC reductions in the San Joaquin Valley, however, provide much smaller benefits. In addition, targeted reductions in directly emitted PM2.5 from sources

such as residential wood burning and commercial cooking are also beneficial for addressing remaining localized PM2.5 attainment needs.

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ASSISTANT CHIEF MAGLIANO: These key science findings identify what reductions are needed for attainment, with respect to which pollutants are most effective and the magnitude of reductions that are needed. The challenge of the SIP development process is then to take this information and define a specific attainment strategy.

As a first step, this means identifying the range of contributing sources where we can look to achieve reductions. Next is determining the actions and measures which will specify how those reductions can be achieved and who is responsible whether at the state, federal, or local level.

Finally, the strategy must specify when the reductions are needed in consideration of the range of attainment deadlines for multiple standards. For example, the 2016 SIPs will include PM2.5 attainment deadlines that range between 2021 and 2025 and ozone attainment dates through 2032. Our planning efforts will also need to consider our climate targets.

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ASSISTANT CHIEF MAGLIANO: The scale of reductions needed is large, with an estimated 90 percent reduction in NOx from today's levels necessary to meet the current 8-hour ozone standard by 2032 in the South Coast. As shown in the stacked bar chart, many different source sectors contribute. While on- and off-road mobile sources comprise approximately 80 percent of the emissions, they come from many different source types and technologies. As Ajith discussed, these emissions are distributed widely throughout the basin. As a result, we will need to look for broad reductions from almost all source sectors.

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ASSISTANT CHIEF MAGLIANO: Achieving this scale of reductions will require a long-term comprehensive approach as we transition to the cleanest possible solutions. Strategies will need to encompass advances in technology, fuels, energy efficiency, regional planning, and infrastructure.

The 2016 SIP process will be able to take advantage of several new methods to better inform strategy development. Tools such as the vision model provide a mechanism to understand the emission benefits of combined actions for both criteria pollutants and greenhouse gases through assessment of potential scenarios. In turn, air quality modeling can assess the air quality progress that

can be achieved through these various scenario options and provide feedback to the SIP strategy development process.

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ASSISTANT CHIEF MAGLIANO: Completing the foundational science work, as well as the strategy development, will be a significant undertaking over the next two years with the SIPs due in mid 2016. Given their scope and complexity, the SIPs will be a collaborative effort between ARB, the air districts, and U.S. EPA.

At an upcoming Board meeting, staff will provide a third informational briefing on the federal Clean Air Act requirements and how the SIP development process in California works within that framework. As we have highlighted for you today, the air quality modeling process is already underway, and we will continue to inform strategy development in an iterative manner.

Given the importance of the freight sector, development of the sustainable freight strategy will play an important role as it is developed in parallel with the SIP planning process.

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ASSISTANT CHIEF MAGLIANO: To summarize the presentation's key messages, our current knowledge of air quality science provides a strong foundation for upcoming SIPs. This has been achieved through the expertise and

experience of ARB's staff in air quality modeling, analysis, and research, investment in comprehensive field studies and partnerships with academics institutions. This work has demonstrated that NOx reductions are fundamental to the attainment strategies for both PM2.5 and ozone. At the same time, ongoing VOC reductions will be important in maintaining progress in the South Coast.

Finally, as we noted at the beginning of the presentation, the health-based standards are continuing to become more stringent over time. As even greater emission reductions are needed, the role of a strong science-based foundation will become ever more important in the decision-making process.

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ASSISTANT CHIEF MAGLIANO: In conclusion, California's longstanding approach to developing air quality policy through sound science has resulted in the significant air quality progress we have achieved over the last 40 years. As other countries such as China and India look to California's programs, it will be important to communicate that role that a science-based strategy process has played in our success.

Solutions to air quality problems must reflect the individual nature of air quality in the country or region and how that may change over time through

progressive implementation of the control programs. The ability to understand and adapt to this evolution is the fundamental basis of an effective program.

Thank you. And that concludes the presentation. And we would be happy to answer any questions you might have.

CHAIRPERSON NICHOLS: Thank you. That is an excellent presentation that covered a large amount of information.

Any questions from Board members?

Dr. Balmes.

BOARD MEMBER BALMES: First of all, I want to say that was probably the most succinct and most clear presentation in atmospheric chemistry I've ever heard. I want to congratulate the staff for that.

I have a specific question about slide ten, which was the use of model as required for SIPs. And you showed the three different scale maps. There's the South Coast. And then a larger regional map that included the coast as well as the Central Valley.

And I wanted to ask staff to sort of justify that scale for the second map. South Coast, it's clear to me. And I realize as a Bay Area resident that our pollution gets into the Central Valley. I'm very aware of that. But I do think that the topography of that large region is

pretty varied.

And the San Joaquin Valley has particular air pollution issues, because it does get Bay Area pollution as well as its own. And so I just wanted to ask if wouldn't it be reasonable also to have a model that's really the valley as opposed to the coast as well?

CHIEF DA MASSA: Excellent question.

The choice of the domain that included central and northern California is based on a longstanding amount of work that we've done looking at source receptor relationships showing where different emissions within the state and up looking at three dimensional transport.

And so the domain is intended to kind of address two issues. Number one, it does include the significant source receptor relationships of the Bay Area to Sacramento and the San Joaquin and also San Joaquin in the other directions as well.

It's also a compromise in terms of a computational requirements. Even though computing resources have improved significantly over time, these model runs take significant amounts of time on the order of days or weeks to complete. So once again, the domain that includes central and northern California is intended to capture the essential source receptor relationships while allowing us to do the numbers of runs that we need

to help inform the control strategy development process.

DEPUTY EXECUTIVE OFFICER TERRY: Just a point of clarification. I'm not just we quite got at your question of scale. John may want to add something about the concept of the nested modeling analysis that we do within the broader domain and the size of the grid cells, which are identical in South Coast and San Joaquin. So there is a different issues of scale, as we are very detailed down to the emission sources within the valley, the same way we are in the urban areas of southern California. So I wanted to be clear on that.

ASSISTANT CHIEF MAGLIANO: I just wanted to add, for example, when we look at PM2.5, which tends to occur on a smaller scale and under much more stagnant conditions, we do have a much more focused modeling domain that covers just the valley.

BOARD MEMBER BALMES: Thanks.

CHAIRPERSON NICHOLS: But for legal purposes, when you submit a SIP, there is a requirement as to what scale of model you use for an attainment demonstration. And just clarify what that is.

ASSISTANT CHIEF MAGLIANO: That's correct. The community multi-scale air quality model that we use is the EPA recommended and required model for SIP modeling purposes.

CHAIRPERSON NICHOLS: And that is broader. It covers the whole region.

ASSISTANT CHIEF MAGLIANO: It's a model you can apply to multiple scales. It can be the entire state of California or it could be down to a very small region within. So it really depends on the nature of the problem and how you want to best apply it to capture the phenomena that are going on.

BOARD MEMBER BALMES: I appreciate staff's explanation. I understand that compromise that John spoke about.

CHIEF DA MASSA: Just to follow along with Lynn's is suggestion, just give you some information on scale. Each of the little tiny grid cells in each of the maps is four kilometers on each side. So there are literally thousands and thousands of grid cells that we simulate both horizontally and virtually.

In terms of the nested nature that Lynn referred to, we normally start with the very largest domain on the map, which is not up there now. And that information is then used to feed the inner domains so we're able to capture boundary conditions and the effects of emissions from areas outside of the modeling domains that we're looking at. So it's a larger domain feeding information into the smaller domains.

CHAIRPERSON NICHOLS: Dr. Sperling.

BOARD MEMBER SPERLING: I do want to acknowledge this roe of science. I remember back and Chairman Nichols I'm sure remembers also back in the 1970s the way these ambient standards were first developed is we said, okay, the pollution is at this level. We need to reduce it this much. We're going to reduce emissions by the same percent, the old roll back model. And it was so unsophisticated, so inaccurate, that it boggles the mind. We've made so much progress since then. And it's so -- I mean, this science is so important. And I think the observation that it becomes more important as we make these reductions is right on and partly because the cost of making these last reductions keeps going up.

So along those lines, I was really intrigued. So there is a few of us nerds here on the Board that are really interested in this. There was two slides that really got my attention, 19 and 20, where it was this summary of looking at the effects of NOx and VOC reduction on ozone.

So in this one for San Joaquin, we see as it was mentioned that if you reduce the VOCs, you have almost no effect on ozone. That was eye opening to me. So I guess my first question is to what extent are strategies in the San Joaquin Valley really being adapted and adopted to

reflect this? I mean, in other words, it doesn't even make sense to do hardly any VOC reduction in San Joaquin, if I understand this correctly. Is that really translating into actual policies and actions and rules?

DEPUTY EXECUTIVE OFFICER TERRY: It is. And we have known this. The original field studies SECO studies 1990 again in 2000 we learned that NOx was essential to ozone control. And the San Joaquin Valley, the local control program for stationary sources, had lagged compared to South Coast with respect to NOx. So we really pushed hard to get those NOx controls in the 1990 SIPs in the valley. When they started to be implemented in the early 2000s, we begin really finally to turn the corner on progress on ozone in the Central Valley.

So yes, the strategies were focused. Clearly, for VOCs, we have statewide programs like consumer products that are important for multiple reasons that we continue to pursue on a statewide basis. But we also in terms of consumer products, South Coast has the ability to go beyond what we do and what is needed at a statewide level for VOC control. That is reflected in the programs.

From the ARB standpoint, our mobile source program is focused so heavily on NOx for both pollutants. And the Central Valley, the local program has focused very heavily on stationary source NOx in the past two decades

really.

BOARD MEMBER SPERLING: It seems like if we were so clever and effective at being able to tailor our strategies to local areas, some of these statewide rules we might do differently. I probably shouldn't go very far.

CHAIRPERSON NICHOLS: I was about to say since you alluded to some of our history, I lived through the ozone wars of the '80s when we were fighting over the question of whether it made any sense to control NOx because in the near region it had a dis-beneficial effect. And the fight that we had -- and it centered in the South Coast and it involved particularly the electric utility industry but also other sources was over why we couldn't just focus on VOCs and ignore that pesky and expensive NOx control.

So it took -- none of this happened easily. I think the investment that was made over the years to improve the science and to tailor the strategies has been obviously very large.

I think what's sobering -- there are many things about this presentation that are worthy of further conversation. It's kind of like laying the groundwork for things that we're going to be getting into as we start looking at the new SIPs. But the amount of additional

control that's needed to meet the health-based standards is just extraordinary. And it may be that we are unique in California. We think of ourselves as unique in a lot of good ways. But we also know more about our atmosphere, and we face tougher challenges than anyone else does in trying to reach the air quality standards.

I wish we could find the same thing was true in Kansas just because it would be politically convenient if some other places had to go through what we have to go through. But it is going to challenge us. And partly for the reasons that you suggest, which is that one would like to tailor strategies to not have to take on things that aren't absolutely essential. But right now, it's looking like pretty much everything you can do is going to have to be done.

BOARD MEMBER SPERLING: So one follow up on that is that these reductions, these -- I assume these reductions are for the emissions in that region. And to go back what Dr. Balmes was alluding to earlier, how much emissions are floating in from elsewhere. So in the case of San Joaquin, a lot of it comes from the Bay Area. That's one we're dealing with the Bay Area as well.

But what about emissions that are coming in from Mexico or other sources or sources we can't control, some maritime? How much -- I guess I could have gone back to

that bar chart. But because I see that, if you go to -- I mean, it's really interesting. There's a pretty big drop when you go from 80 percent to 90 percent reduction in emission, you get a big reduction in ozone, which is really impressive and gratifying. But is there another 10 or 15 percent there we can't even touch for other reasons? So how much additional is there?

DEPUTY EXECUTIVE OFFICER TERRY: We're not going to be able to answer that question today. But I want to say a couple things before I ask Karen and others to jump in.

One is interesting point that was made in the new policy document for the ozone maps, which discusses background ozone international transport. And so it depends on the question you're asking.

On the violation days at the higher concentrations, the background and the transport are not terribly important. At the lower levels, they become more important. So it's a very complex question to look at.

BOARD MEMBER SPERLING: So these numbers are all for the third worst day hours or something like that; right?

CHAIRPERSON NICHOLS: You nodded your head. You have to say "yes" if you want the court reporter to pick it up.

ASSISTANT CHIEF MAGLIANO: Right. One of the things I think we walked through during the air quality presentation last month was the concept of the form of the standard and how we determine whether you're in compliance. You're correct, you look at the fourth highest concentration every year. And you average them over a three-year period. These are, indeed, at the very high end of the distribution.

CHAIRPERSON NICHOLS: Ms. Mitchell.

BOARD MEMBER MITCHELL: Thank you.

Well, I'm not a science nerd and I cannot compete with Dr. Sperling on some of these questions. I'm more of a boots-on-the-ground person. And I'm really quite -- well, not surprised but just it's remarkable what we see in slide 28, which is the identification of the sources that contribute to oxides of nitrogen.

And, of course, we know after it's been stated here several times the kind of reductions that will be needed in the South Coast region. And some of these reductions are near term. I mean, we're looking at a 2016 State Implementation Plan. And the sources of the NOx emissions are almost all mobile sources over which this Air Resources Board does have control.

And it points up the need for a sustainable freight strategy because you see in this that many of

those emission sources are trucks, heavy duty, light duty. And some of them are ships, and all of those are involved in freight movement. So it's really daunting, this challenge before us. I don't know how we do it. I hope you know how we do it.

But I think it means really substantial effort is needed for our Board and our staff to be working with South Coast district as well as San Joaquin to meet these deadlines. What is the penalty if we cannot -- we know one of the penalties is no transportation moneys. What are the other consequences that could happen if we don't meet these deadlines with the State Implementation Plan?

DEPUTY EXECUTIVE OFFICER TERRY: Well, there's consequences if we don't do the planning process and submit a federally approvable plan. And I think that's what you're alluding to, some of the sanctions. So that's why California works so hard to comply with these SIP planning processes, is essential not only to solve the problem, but to avoid the penalties. And so far we've done a good job of that.

Now, when we get close to attainment and we don't quite hit the mark, then the Clean Air Act essentially triggers another process of coming back to EPA and saying here's what we're going to do to close the remaining gap. So I think the good news from the sanctions aspect of the

Act is that it forces us continue to keep an eye on the ball. If you don't quite make it, you just stop and give up. You keep going.

BOARD MEMBER MITCHELL: I know in South Coast region we're talking about zero emission freight movement and I think that's the goal. And that will be in our planning process, I hope and assume. So anyway, I look forward to our staff working with South Coast District to try to accomplish this daunting task.

CHAIRPERSON NICHOLS: We're taking advantage of the relative calm of the moment just to go over some of the basic science and structure that we're dealing with. But, yes, this is going to be an adventure. No doubt about it.

Okay. Thank you very much, staff, for that presentation. We have one more major informational item here today. That is the updated scoping plan.

I'll give the staff a minute to change places here. We are planning on an executive session, I believe, also today; is that correct?

CHIEF COUNSEL PETER: Yes.

CHAIRPERSON NICHOLS: Yes, we do. Okay. So we will break after this item and go to the executive session and then report back out. Things are getting brutal here.

This next item -- and it's the last item for

today -- is a presentation on the updated climate change scoping plan. As I think everyone knows, our first scoping plan was presented to the Board in 2008. AB 32 requires the plan to be updated every five years. So we're a little bit late, but not very. And we have a good reason for it, which is that we had a lot of work to do on the update.

What we're dealing with here is our first update to the initial Scoping Plan. The draft of this was released for public comment in October of 2013. As you will recall, we have a discussion on it at the October Board meeting. The revised version of the proposal was released earlier this month, but we are not going to be taking action today because we have additional work to do before we can legally take action on the plan because of the requirement to obviously to follow the Environmental Quality Act and make sure that we have done all the necessary analyses on the plan. So this is an almost final or hopefully closer to final but not yet final document.

While fully realizing the goals of the Scoping Plan will require substantial reductions in greenhouse gas emissions from all sectors, I'd like to highlight for a moment here today how we're attaining some momentum in the heavy duty sector. And this follows nicely on

Ms. Mitchell's comment.

Two days ago, President Obama announced the federal government is going to be moving forward with work on a further round of fuel efficiency standards for heavy duty trucks and directed the EPA and the National Highway Traffic Safety Administration to propose new standards by March of next year.

California is also a partner in this effort as we were with the light duty standards. And our staff has already been working with the federal partners on the Phase 2 standard. We're going to be moving forward on this in the confidence that the next generation of standards for heavy duty vehicles will be in place in time to make a significant contribution to our climate goals. So this is a great example I think of both a federal/state relationship, which we've been working on for some time now, but which is really bearing fruit and also on the synergy between our air quality and climate goals.

So with that, since everybody is now in place, Mr. Corey, do you want to introduce this item?

DEPUTY EXECUTIVE OFFICER COREY: Yes, thank you, Chairman Nichols.

With the development of the initial Scoping Plan, California became the first state in the nation with a comprehensive set greenhouse gas emission strategies

involving every sector of the economy. The Scoping Plan stimulated a long list of successful state and local initiatives, including several ARB measures such as the Low Carbon Fuel Standard, Advanced Clean Cars, and the Cap and Trade Regulation. This proposed update to the Scoping Plan identifies the next steps for California's leadership on climate change. It builds upon the successful framework established by the initial Scoping Plan by outlining priorities and recommendations for the state to achieve its long-term climate objectives.

The unified approach in the plan describes actions for California to undertake to ensure it continues on a path toward a cleaner more sustainable and prosperous future. This approach is designed to ensure the state is able to meet its long-term climate objectives in the most cost effective ways while simultaneously supporting a range of economic, environmental, and public health priorities.

After considering the comments submitted following the October discussion with the Board as well as the comments at the hearing, staff released a revised proposed update earlier this month. And today's staff presentation will highlight the changes made to the update since the October version. We intend to present a proposed Scoping Plan update to the Board for

consideration and approval in May when we'll be returning, as noted.

I'll now ask Marcelle Surovik of the Stationary Source Division to begin the presentation.

(Thereupon an overhead presentation was presented as follows.)

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

Good morning, Madam Chairman and members of the Board.

Today, I will be discussing staff's proposed first update to the Climate Change Scoping Plan.

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AIR POLLUTION SPECIALIST SUROVIK: The initial Scoping Plan outlined the State's strategy to meet 2020 greenhouse gas emissions limit and set a path to reduce emissions to meet California's long-term climate goals. The initial Scoping Plan was built on the principle that a mixed balance of strategies is the best way to cut emissions and grow the economy in a clean and sustainable way. The initial Scoping Plan was developed by ARB as required by AB 32.

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AIR POLLUTION SPECIALIST SUROVIK: The Scoping Plan must be updated at least every five years per AB 32.

The proposed update builds upon the successful framework of the initial Scoping Plan by outlining priorities and recommendations for the state to achieve its longer-term climate objectives.

The update details progress toward meeting the 2020 limit. The state has steadily implemented a set of actions that are driving down greenhouse gas emissions, cleaning the air, diversifying the energy and fuels that power our society, and spurring innovation in a range of advanced technologies. These efforts have put California on course to achieve the near-term 2020 emissions limit.

The update also lays out a set of new actions that will move the state farther along the path to a low carbon sustainable future. Some of the actions are near term, while others are focused on longer terms efforts that will provide major benefits well into the future.

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AIR POLLUTION SPECIALIST SUROVIK: ARB released a discussion draft of the update for public comment on October 1, 2013, and presented the draft to the Board later that month. Staff considered comments received on the draft and recommendations from business, environmental, environmental justice, and community-based organizations when developing the proposed update. In addition, ARB collaborated with several agency partners

during this process. The proposed update was released for public comment earlier this month.

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AIR POLLUTION SPECIALIST SUROVIK: The final proposed update will be presented to the Board for consideration in late spring.

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AIR POLLUTION SPECIALIST SUROVIK: There are several key differences between the discussion draft and the proposed update.

For example, the proposed update includes a more in-depth discussion of climate change science, reflecting the inter-governmental panel on climate change's recently released fifth assessment. The revised discussion also includes input from a distinguished team of scientific experts, similar to input received on the update by the economic advisors and the Environmental Justice Advisory Committee.

The proposed update includes restructured sector discussions. The discussion draft separated the progress of implementing the initial Scoping Plan measures from the sector-specific longer-term recommended action items. These discussions have been merged in the proposed update and recommended actions are now identified for additional key sector areas, green buildings, and short-lived climate

pollutants.

Sector discussions now include more specific recommendations and deliverables, including the identification of lead agencies and anticipated completion dates.

The update also moves up the timing of ARB's short-lived climate pollutant strategy to 2015. The proposed update places a greater emphasis on the need for establishing a mid-term statewide GHG emissions limit. This limit, that will be informed by climate science, will be critical in helping to frame the additional suite of policy measures, regulations, planning efforts, and investments in clean technologies that are needed to continue driving down emissions.

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AIR POLLUTION SPECIALIST SUROVIK: Climate change is a great unifier. It presents an unprecedented set of challenges and opportunities for California. It is already prodding us to be more energy efficient, to achieve various goals more quickly and effectively, and generally allows us to provide a more streamlined government.

It provides us an opportunity to further integrate climate thinking and sustainable programming into the range of actions we take to grow the economy,

protect the environment and public health, and plan for the future.

It pulls together planning and investments that were otherwise separate and at times working at cross purposes and allows us to cut emissions that can also deliver a range of other benefits, such as cleaner air and better water management.

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AIR POLLUTION SPECIALIST SUROVIK: Every sector in the state must play an increasing role in our cross-cutting effort to reduce greenhouse gases. Success will require the creation of new policies in some sectors, and expanding and refining existing policies in others.

The proposed update identifies eight key sectors for ongoing action. These include: Energy, transportation, agriculture, water, waste management, natural and working lands, short-lived climate pollutants such as methane and chlorinated gases like refrigerants, and green buildings.

The proposed update identifies specific recommended actions for each sector, including deliverables, lead agency assignments, and expected due dates. Some of the actions are near term and others focus on longer term efforts. For brevity, I'll be presenting a high level characterization of them in the next few

slides.

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AIR POLLUTION SPECIALIST SUROVIK: Before getting into individual sectors, I want to point out the update identifies several overarching recommendations for all sectors. These include establishing a statewide midterm limit as well as sector specific midterm targets; aligning the sector's recommended strategies with air quality and climate change objectives; avoiding disproportional impacts to disadvantaged communities, and planning for zero and near zero emissions in all sectors by 2050. In addition, the update calls for the Cap and Trade program to continue to reduce emissions to help us meet our midterm and long-term climate goals.

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AIR POLLUTION SPECIALIST SUROVIK: Reducing energy sector emissions to near zero over the long term will require wholesale changes to the state's current electricity and natural gas systems. To achieve this, recommendations for the energy sector include the development of a comprehensive greenhouse gas reduction program for the state's electric and energy utilities by 2016. This approach will enable California to pull together and coordinate a range of policies, technologies, and investments needed to achieve the most cost effective

emission reductions across the sector, in line with meeting midterm and long-term statewide targets. It will also give utilities, electric providers, and a range of other businesses the flexibility and the right incentives to pursue the most innovative strategies to cut emissions.

In addition, the state will need to increase energy efficiency, distributed generation, and combined heat and power, demand response, and integrated low carbon energy supply.

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AIR POLLUTION SPECIALIST SUROVIK: California already has many of the elements necessary for an effective framework to address transportation emissions. The recommendations identified for the transportation sector representing policies including targeted investments, strategic market support, and coordinated planning for more sustainable development.

The recommendations include: Reducing light-duty and heavy-duty GHG emissions five percent per year to continue progress toward a near zero emissions by 2050, enhancing and strengthening the low carbon fuel standard, developing a sustainable freight strategy that will define what is necessary to move California toward a sustainable freight system, and leverage investments to achieve both GHG emission reductions and air quality goals.

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AIR POLLUTION SPECIALIST SUROVIK: The agriculture sector is very complex due to factors such as the variability of agricultural operations throughout the state and the number of potential GHG sources at each operation. To address this complexity, the recommendations identified for the agriculture sector include: Convening an interagency work group to establish midterm and long-term planning targets; provide tools and calculators for GHG emission reduction best practices, and recommend strategies to reduce GHG emissions associated with energy in agricultural water use.

In addition, recommendations for methane capture standards should be developed by the inter-agency dairy digester group, and technical assistance and associated incentives should be strengthened to help agricultural operators develop carbon plans and implement GHG emission reduction practices.

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AIR POLLUTION SPECIALIST SUROVIK: Greenhouse gas emissions from the water sector come primarily from the energy used to pump, convey, treat, and heat water. The primary mechanisms to reduce water-related energy use are energy efficiency and water conservation strategies. Recommendations for the water sector address new policy

and regulatory frameworks that account for water supply, water and energy use, water quality standards with regional flexibility and funding and effective data collection and analysis.

The recommendations include: Convening an inter-agency work group to guide adoption of GHG emission reducing policies for water sector investments, including water conservation measures and regulations; identifying and incenting implementation of rate structures that reflect economic, social, and environmental value of water in California; and developing comprehensive groundwater management strategies.

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AIR POLLUTION SPECIALIST SUROVIK: Determining the best way of recycling alternatives, examining ways to increase the use of collected wastes and expanding their potential markets, providing funds to building and infrastructure, and undertaking additional research are primary mechanisms for reducing waste-related GHG emissions.

The recommendations for waste sector include: Develop programs to eliminate disposal of organic waste at landfills, and maximizing recycling, composting and anaerobic digester; explore opportunities for additional methane control at landfills; and increased utilization of

captured methane; and implement financing or incentive mechanisms for in-state infrastructure development.

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AIR POLLUTION SPECIALIST SUROVIK: Enhancing protection and conservation of natural and working lands in California can result in important climate benefits and lead to a more resilient California that is better prepared for severe wild fires, changing water availability, and stressors on species and natural communities.

The recommendations for the natural and working lands sector include: Convening an inter-agency work group to develop a forest carbon plan that establishes quantitative midterm and long-term planning targets, developing a coordinated local land use program; expanding urban forestry, green infrastructure and investments; strengthening, refining, and implementing actions for use of forest biomass; and convening a climate investment working group to outline funding needs and priorities for forest, wetlands, and range lands.

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AIR POLLUTION SPECIALIST SUROVIK: Mitigation of short-lived climate pollutants which include black carbon, methane, and hydrofluorocarbons produces immediate climate benefits. Many short-lived climate pollutants are already

regulated by ARB. For example, black carbon levels in California will be reduced by 95 percent from historical levels primarily due to diesel controls and burning restrictions.

ARB is continuing to develop additional short-lived climate pollutant control measures, such as ARB's development of a proposed measure to reduce methane from oil and gas production.

Recommendations for short-lived climate pollutants include ARB's developing a comprehensive short-lived climate pollutant strategy in 2015 that will include an inventory of sources and emissions, the identification of additional research needs, and a plan for developing necessary control measures.

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AIR POLLUTION SPECIALIST SUROVIK: Green building programs offer a comprehensive approach to support California's climate change goals by addressing energy, water, waste, and transportation impacts associated with buildings, while protecting the environment and public health.

By supporting current initiatives and expanding the long-term focus toward zero carbon buildings, green buildings represent a fundamental shift toward a cross-sector and integrated climate policy framework.

The recommendations for the green building sector include the development of a comprehensive greenhouse gas emission reduction program for California's buildings by 2017, including new construction, existing building retrofits, and operation and maintenance of certified green buildings.

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AIR POLLUTION SPECIALIST SUROVIK: On to our next steps. Staff will publish the draft environmental analysis of the proposed update for a 45-day public review and comment period in mid-March. Staff will also publish the remaining appendices to the proposed update at that time.

For consistency, the comment period for the proposed update, the draft environmental analysis, and the additional appendices will all have the same closing date, which is expected to be in late April. Written responses to comments received on the draft environmental analysis will be posted to the Scoping Plan update website in late spring.

Staff will present the final environmental analysis, staff's written responses to comments received on the environmental analysis, and the proposed update for Board consideration in late spring.

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AIR POLLUTION SPECIALIST SUROVIK: Climate change will require California to continue to lead the world in pioneering effective strategies toward a cleaner more sustainable economy. It will require us to continue sharing our successful approaches to climate policy with others, including continuing to partner and collaborate with other State, national, and global leaders as we work toward common goals.

And it will require a further engaging California's citizens and businesses to continue building a state that provides low carbon, high quality life styles. By building on the framework of the initial Scoping Plan with the set of actions outlined in the proposed update, we can continue to drive down emissions, spur innovation across a range of clean and advanced technology sectors, improve the air we breathe, and create more livable opportunities.

That concludes my presentation. Thank you.

CHAIRPERSON NICHOLS: Thank you very much. We have a number of witnesses who have signed up to speak. Recognizing of course, that we're still in an information gathering mode and not making a decision here today, but I realize a lot of people have input they'd like to give to the Board and we're here to hear it. So unless the Board members have any initial questions or comments, I think we

should just get started. And there is a list out there and Ken Koyama knows he's number one. There he is at the podium. Good morning.

MR. KOYAMA: Good morning. Thank you very much. I'm Ken Koyama with the California Air Pollution Control Officers Association.

I'm here to express CAPCOA's appreciation to ARB and staff for their leadership in climate change and especially in reaching out to us to provide input for updating the Scoping Plan.

The CAPCOA Board has made it a priority to provide support to ARB in this effort, and I can clearly state that the APCOs are not shy about offering a lot of ideas.

We look forward to continuing to work with you in moving forward with the updated Scoping Plan. Thank you very much.

CHAIRPERSON NICHOLS: Thank you. That's a great start to this.

Jerilyn Mendoza.

MS. MENDOZA: Good morning. Jerilyn Lopez Mendoza here on behalf of the Southern California Gas Company.

Good morning, members. Good morning, Madam Chair, and thank you for the opportunity to comment this

morning.

I should say right off the bat, Southern California Gas very much appreciates the ARB's new Scoping Plan for AB 32 as it replaces most of the electricity-specific language with technology neutral language. We've always supported a technology neutral approach to emissions reductions and believe the best and most cost effective way to achieve mid- and long-term GHG reduction targets will be realized by letting the market decide the mix of future energy technologies.

We believe setting carbon-based standards and goals is a much better approach than technology mandates and will allow a broader array of low carbon energy resources to contribute to the state's mix of carbon-reducing energy strategies.

We also appreciate the approach towards setting a midterm target that will help the state integrate greenhouse gas reduction efforts with criteria pollutant reduction efforts. But while the revised draft is a more technology neutral one than the previous draft, ultimately the vision for 2050 communicated in the plan relies primarily on a vision for electrification of most energy end uses that is not yet realized.

Southern California Gas believes there are important natural gas pathways that help us achieve the

2050 GHG reduction goals faster and more economically. We are focused on decarbonizing the pipeline. Just as CARB is focused on decarbonizing electric generation. Decarbonizing our natural gas delivery systems helps keep intact the inherent energy efficiency of natural gas at a lower carbon content without creating the dramatic increase in electric demands in cost which makes decarbonizing electric generation a challenge.

How do we accomplish this? By pursuing new gas technologies in the transportation sector. I believe you have before you a one-page document has a blue top and it's called, "The Pathways to Near Zero Emission for Natural Gas Heavy-Duty Vehicles." This is a one-page summary of a white paper prepared by Gladstein, Anders, and Associates and goes into great detail as to how we see the heavy-duty sector being positively impacted by the use of natural gas.

We also plan to do this by developing smaller scaleable electric generating technologies to integrate with renewables, evening out their delivery to the grid, by pursuing distributed generation with fuel cells and microturbans and state-of-the-art combined heat and power systems, and by increasing the efficiency of all of our natural gas technology. Most everyone relies on -- everyone in this room relies on for water and space

heating and cooking and for commercial and industrial processes that grow our economy. We accomplish this -- may I finish this last point?

CHAIRPERSON NICHOLS: Yes.

MS. MENDOZA: We accomplish this by focusing on biomass and hydrogen reformation and production. We move from geologic methane toward biomethane, synthetic methane and hydrogen blends. Thank you very much.

CHAIRPERSON NICHOLS: Thank you. We will also review the paper. Thanks very much.

Frank Caponi.

MR. CAPONI: Good morning, Madam Chair, members of the Board.

My name is Frank Caponi with Los Angeles County Sanitation Districts.

I'm just here today to talk about one specific item that we had noticed in the updated Scoping Plan. This is brand-new that we had not seen before. It's staff indicating that they'd like to conduct research into the fugitive greenhouse gas emissions from landfills and wastewater treatment plants. We certainly support that effort.

What we didn't see in the updated language was any indication that there be a collaboration with industry. And we'd like to support that type of effort.

Industry has a lot of experience in doing this type of work in collaboration with academia, as well as with the Environmental Protection Agency. We're hoping that you could gain off of that experience and see all the success we've had in doing this type of research.

But more importantly, you can see the types of failures that have happened with this type of research. The research they're trying to undertake is very complex and it takes an awful lot of effort and a lot of resources. And we look forward to working with the staff on these types of efforts and all aspects of the waste sector plan. Thank you.

CHAIRPERSON NICHOLS: Thank you very much for pointing that out. I think that would be our approach on the natural. But it's probably good to specify it.

Ms. Rothrock.

MS. ROTHROCK: Thank you, Mr. Chair and members.

My name is Dorothy Rothrock with the California Manufacturers and Technology Association. And we have a few overarching comments on the draft.

First, the staff recommends very aspirational near zero goals based on getting us to a 2050 level of emissions that would impact climate change if adopted an a worldwide basis.

At the same time, the draft refers to importance

of economic analysis around cost effectiveness and technological feasibility. But there isn't a real strong connection drawn between how the findings on cost effectiveness and technological feasibility will be connected to the setting of the goal as well as the implementation -- adoption and implementation of regulations in the future.

As you know, it's very important for any regulatory scheme, particularly a market-based scheme to build the rules into the program up front so the market as well as the public knows how different economic impacts may impact -- may be treated as the rule goes forward. We don't really think ARB staff has really faced the reality of what may happen over the future if, in fact, costs become too high and they'll have to make adjustments.

A related point is that economic growth is not adequately addressed in the discussion, particularly with regard to setting the target. For particular manufacturers, currently under cap and trade if you're product based scenarios, you can get more allowances as you grow and expand. But it doesn't change the absolute volume of emission allowances that are in the program. So that puts great pressure on everyone else in the program. The economy as a whole will need to reach that goal sort of no matter what, no matter if manufacturing is growing.

This could actually lead to a very bad environmental result because we certainly want increased manufacturing, very efficient manufacturing in California. And if we're not allowed to take market share from dirtier economies, then this result could be a worse environmental impact on the globe.

We urge the ARB in the next version of this to incorporate solutions to these problems. Maybe draw connections stronger between how the findings and the economy will connect with setting the goal. And we look forward to that. Thank you very much.

CHAIRPERSON NICHOLS: Thank you. So reverse leakage is what we're looking for.

Good morning, Ms. Levin. Nice to see you.

MS. LEVIN: Good morning. My name is Julia Levin with the Bioenergy Association of California.

We represent energy, waste, and other companies as well as local governments up and down the state and public agencies charged with air quality, water quality, solid waste management, wastewater treatment, and other environmental protection.

We are an association of companies and public agencies working together to develop small scale bioenergy development from organic waste.

Like many of the speakers today, we thank the Air

Board for your continued and absolutely extraordinary leadership on climate change. It's not surprising the number of delegations from all over the world is increasing quickly. I'm sure that will continue.

In the current Scoping Plan update draft, we thank you for a number of important changes from the previous draft. In particular, the strong emphasis on science which has to be the underpinning for this effort is very, very helpful, and very well done. We strongly support the increased emphasis on cross sector opportunities, especially the water energy nexus and organic waste to energy opportunities.

We support the increased focus on short-lived climate pollutants, although we urge the Board to identify specific incentives to help reduce those pollutants, particularly for dairy digesters in the forest sector which in the Scoping Plan update makes very clear that wildfire contributes 52 percent of all the black carbon emissions from California. So one of the other recommendations we support is the move -- the recommendation to move quickly and aggressively to reduce the risk of wild fire. But we do need incentives to do that.

We also -- I particularly strongly support the inclusion of many of the recommendations from the

Bioenergy Action Plan, which I helped to create.

A few sector-specific recommendations. Our most troubling finding is that the energy sector omits bioenergy all together. There is no mention of it, which is particularly surprising since bioenergy can provide baseload renewable energy. It can provide energy storage and provide distributed generation, all very important goals, especially as we approach and exceed 33 percent renewables.

In the water sector, we're happy to see the inclusion of wastewater biogas to energy. Again, we're very surprised there is no motion of bioenergy in the midterm goals. Again, this is very surprising considering that this Board has found transportation fuels from wastewater biogas are the lowest carbon fuels in existence. Highly, highly carbon negative. And yet the update doesn't include wastewater biogas to transportation fuels in the midterm goals.

In the transportation sector, we strongly support the recommendation to consider 2030 goals, but we're concerned that the update seems to assume that current funding is sufficient. It is not. We need long-term guarantees for the value of low carbon fuel credits.

In the solid waste sector, we urge you to include a recommendation on the life cycle greenhouse gas

emissions and benefits of composting anaerobic digestion and other organic diversion or conversion.

Thank you. We will also submit written comments.

CHAIRPERSON NICHOLS: Thank you so much.

I think this is a good point at which to comment that I think many of the comments that we're receiving have to do with sort of mentioning or failing to mention certain things, really cross cutting strategies. And this is -- I suspect we're going to hear from other groups that we perhaps assumed had a role in, but we didn't necessarily mention them in every single section. We're going to have to figure out how to accomplish that goal without making this document even bigger and heavier than it already is. So maybe some sort of a matrix summary or something. Thanks.

MR. BLACK: Hi. Thank you for having me today. My name is Neil Black with California Bioenergy. We're dairy digester developers in the Central Valley. I hope to add to your information gathering today.

We've formed our business seven years ago motivated by the ability to destroy the methane currently being released into the atmosphere from dairy lagoons. And we are very motivated by dairy digesters being included as one of the greenhouse gas credit protocols by the ARB. It's motivated us in building our processes and

bringing in equity capital to our work.

What I wanted to give you a little bit of insight into is the development of dairy digesters in the state. We're starting to get momentum, and there is opportunity to build upon that substantially.

As of 2012, there are only eleven dairy digesters and none have been build since about 2009. In 2013, five were built. And that's a start of momentum that we need to build upon. There is about six to eight million tons a year of CO2E emitted from dairy digesters. It's a great opportunity to build to create projects that create California based high quality offsets.

And there is a remarkable opportunities right now, which is the passing of SB 1122. And it's now currently being implemented by the PUC. And support for that program and implementation that dairy digesters are encouraged through it by particularly splitting apart ag and dairy within the set 90 megawatt mandate will help create the economics that are needed for dairy digesters to develop and provide the very high quality offsets that they're capable of providing. So we're delighted to provide more information.

Also we've worked very closely with the air district on NOx emissions in a close partnership with them. And we are delighted to provide any other

information overtime to all of you. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Evan Edgar.

MR. EDGAR: Chairman, Board, members, my name is Evan Edgar. I'm the engineer for the California Compost Coalition. We were part of the Super Organics Coalition last year with the cap and trade investment plan. And we thank CARB's inclusion of composting and anaerobic digestion within the cap and trade revenue that is over $30 million available for loans and grants for anaerobic digestion and composting and building that infrastructure to divert organic waste from the landfill.

We appreciate your collaboration with staff with CalRecycle. With the CARB and CalRecycle together that money will be well spent within diverting organics from the landfill.

We are in very strong support of AB 30 Scoping Plan in its entirety. It reads like poetry when I read it a couple days ago. Like environmental poetic justice, you may call it, because the waste sector is not just about landfills. I read the entire aspect.

We're in the transportation sector. We have a carbon negative fleet taking organic with their CNG fleets and we make renewable CNG out of it. Right here in Atlas in Sacramento here, we have a facility making carbon

negative fuel. We are in the transportation sector hauling materials around.

We're in the energy sector. We take biomass and biomethane and do something with it. That's carbon neutral. We highly support the comments of Julia Levins today.

We're in the industrial sector. We take recycled feedstock, plastic, and paper and metal. We do something here in California with regards to taking that and make products in California instead of sending it to China.

We're in the agriculture sector. We make compost. We make a lot of compost. And we make organic compost. We fully believe in the farm to fork concept. We have the food waste that goes to the compost that goes to the farm to make the food. Big concept.

We're in the water sector. By using compost in agriculture sector, we save 30 percent water in many case studies in Ventura and throughout California. We're saving 30 percent water by using compost.

And we're in the green building sector. We actually recycle the construction demolition debris and get LEED points for certified LEED buildings. So the waste sector is not about landfills anymore. We're ubiquitous to all sectors all the time.

We're wholly in support of net zero by 2035. But

why wait until 2035? We're net zero now. We are carbon negative fuel. We have carbon neutral energy. And a lot of communities in California have a zero waste plan by 2025. Throughout the Bay Area, many communities zero waste by 2050.

My prediction is by 2025 there will be no waste sector. We'll have a transportation sector of carbon negative fuel. We'll have an energy sector with biomethane and biomass. We'll have compost. So hopefully the next update of the Scoping Plan there will be no waste sector.

And that is environmental poetic justice. Thank you.

CHAIRPERSON NICHOLS: Thank you. I agree that deserves an applause.

Okay. Sam Emmersen.

MS. EMMERSEN: Good morning. My name is Sam Emmersen. I am here today speaking on behalf of GWAC, the Global Warming Action Coalition.

We are a coalition of leading environmental and public health groups around the state that works to protect and support the implementation of AB 32.

First, GWAC would like to thank the California Air Resources Board and its staff for their diligent work in implementing AB 32. We have a letter that we will be

submitting to the Board signed by 16 organizations from across the state, as well as one organization that didn't quite make it onto the letter but we wanted to acknowledge, the Asian Pacific Environmental Network.

The letter outlines our support for CARB to begin planning for greenhouse gas emission reductions beyond 2020 through the Scoping Plan update, including the recommendation that the state adopt a midterm limit for statewide GHG emissions in 2030.

A recent study by the Lawrence Berkeley National Laboratory found that the state is on track to meet its 2020 GHG emission reduction targets. The same report underscores the need to strengthen and expand existing policies and adopt new policies to ensure that we stay on track after 2020. Your own Scoping Plan notes that California will need to increase the pace of reductions after 2020 to stay on track for its emission reduction targets.

And with that milestone being only six years away, our coalition feels it is wise to begin planning now for the needed investments and infrastructure. The Board's authority to begin planning for GHG emission reductions beyond 2020 is beyond dispute.

AB 32 also reflects the Legislature's clear intent for CARB to maintain and continue reductions in

emission of GHGs beyond 2020 and requires the Board to make recommendations to the Governor and the Legislature on how to continue reductions of GHGs beyond 2020. CARB even included a brief discussion of GHG emissions reductions after 2020 in the original 2008 Scoping Plan. It's also true that planning for emissions reductions beyond 2020 will send a clear market signal to support continued investments and innovation in low carbon technologies.

GWAC would like to add its strong support for CARB's work to start planning beyond 2020 to ensure California's stays on track to achieve its long-term climate and clean energy goals. Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Claire Halbrook.

MS. HALBROOK: Good morning. Claire Halbrook from Pacific Gas and Electric Company.

To begin, PG&E would like to thank staff for responding to all of the stakeholder requests for additional detail to be included in the current update. So thank you very much.

We believe this draft does much to focus on encouraging reductions from all of California's major economic sectors, while also underscoring the need for flexibility in reaching our climate goals. We also

believe it lays out a process for the development of comprehensive strategies for key sectors, including the utility sector. And we look forward to continuing our work with ARB, the CEC, and CPUC to develop a strategy.

This update also highlights the need for ongoing economic assessments and included a far more development scope for this work than previous drafts. However, PG&E believes the role of the Scoping Plan update could be further strengthened by expanding upon the economic analysis.

AB 32 makes specific reference to ensuring the cost effectiveness and technological feasibility of all measures, defining cost effectiveness as the cost per unit of GHG reduced.

We request the final update uphold this premise by applying a solid analytical framework to evaluate the cost effectiveness of both current and proposed measures. For example, PG&E's request to analyze the performance of existing measures could be easily fulfilled by matching the emission reductions outlined in the 2013 State agency GHG report card with a cost of implementation.

We also support the update's nuanced assessment for the potential for combined heat and power to deliver cost-effective long-term and efficient GHG reductions.

PG&E continues to support efficient CHP, such as

bottom cycle CHP to deliver long-term reductions as the State grid becomes increasingly cleaner.

Finally, PG&E continues to believe that a well-designed multi-sector crap and trade program linked with emerging programs either through adoption of California's cap and trade program or simply through aligning our reduction targets will align reduction goals in a cost effective manner. Steps to explore linkage with other programs should be transparently outlined in the final plan.

Thank you.

CHAIRPERSON NICHOLS: Great.

James Garner.

MR. GARNER: Good morning. I'm James Garner, the Communications Director for Dairy Cares. We're a coalition of farmer-owned cooperatives here in California as well as a processors and trade associations in other stakeholders throughout the dairy community.

I'd like to start by saying Dairy Cares does care about its carbon footprint. We've been working very hard in the state for decades. The California dairy community has reduced its carbon footprint by 63 percent since 1944 and we're committed to further progress.

We submitted comments on November 1 and I'd incorporate those by reference. I just want to hone in on

the language in the Scoping Plan about the possible mandatory installation of digesters. I think Neil Black from Cal Bio gave a nice overview of where we're headed when it comes to dairy digester construction in the state. There's been some progress here in the last year or two, and we're very excited about that.

In the Scoping Plan, there is some language about whether and how the program should become mandatory. We think that just the consideration of the word "mandatory" or making the program mandatory may actually halt or certainly slow down the progress of building digesters in the state. We certainly don't want to see that happen. Of course, if it's mandatory, then we lose the potential revenue for carbon offsets, and that creates several different challenges and issues in this state. The economics of dairies itself have been very difficult over the last five years. Mandating that dairies have digesters would be a game changer. For some dairies, it would be a game ender. They would have to leave the state most likely. So mandating digesters and just the consideration of it we think has issues with future funding and development, like folks at Cal Bio.

So a couple of recommendations. We did incorporate them in our comment letter, but I would like to just echo what was said by Cal Bio. SB 1122,

implementation of that and support by this Board and this organization would be critical, especially supporting the creation of a screen for dairy digesters and having CARB support that creation to make sure that funding is available for long-term economically viable contracts for the sales of renewable electricity.

So with that, thank you for your time.

MS. KOEHLER: Good morning. My name is Larissa Koehler here from the Environmental Defense Fund.

We are very supportive of the plan. And in particular, there are three areas amongst the many here we want to make sure you retain your critical progress.

One: Looking past 2020. The Air Board is a world class science-based agency. The science does not lie. We are in a climate crisis. The fact that the Scoping Plan sets forth a path for California beyond 2020 is of crucial importance, extending our cap to 2030 and beyond, setting reduction targets by sectors, and developing new investments signals through cap and trade are all things that should be lauded and are needed.

We cannot afford to leave any sector behind and we cannot afford to miss the targets. This is of paramount importance. And you have our full commitment to realizing the vision of a lower carbon California future. Other jurisdictions like the EU have started setting

longer term targets. Now California is in catch-up position. Let us not get left behind.

Two: Reducing emissions from deforestation and degradation. The chopping and burning of tropical forests like the Amazon accounts for about 15 percent of global greenhouse gas emissions. This is more than the climate pollution from all of the cars and trucks in the world combined. For this reason, we urge the inclusion of a mechanism for recognizing and crediting REDD in the California program. Through your leadership and as laid out in the Scoping Plan, California can and should develop the gold standard for crediting reductions associated with avoiding deforestation. This will extend the reach of the program well beyond our borders while helping to meet our climate pollution obligations and provide critical social benefits in the places where these projects are developed.

Number three: Short-lived climate pollutants. Since the last Scoping Plan, the state has made significant progress bending the curve on carbon dioxide emissions. However, that is only one piece of the puzzle. Methane black carbon, F gases, and many more comprise the portfolio of short-lived climate forcers whose productions can help mitigate climate change quickly.

On the co-benefits side, reducing leaks of methane and refrigerants saves people money. Reducing

black carbon saves people's lives. We support the Scoping Plan's focus on short-lived climate pollutants. And we urge you, the Air Board, not to lose that focus. It is simply an issue which the world has overlooked for too long and needs your continued leadership. Thank you.

MR. LAPIS: Good morning, Chair and Board members. Nick Lapis with Californians Against Waste.

We would like to commend staff on the effort they put into this document and working with stakeholders as well as sister agencies on identifying the most realistic opportunities for greenhouse gas emissions in the waste sector.

This has been A monumental effort over the past six, seven years where the Air Board has gone from an agency that almost never dealt with recycling to one of recycling's biggest champions. Throughout this effort and especially the development of the Scoping Plan update, staff has identified the correct focus for the next five years of implementing AB 32. The three areas that staff focused on appropriately is organic waste, which is the biggest part of the waste stream, and the material we've done the worst job recycling.

Keeping recyclables in California as opposed to shipping them overseas. And that's important to reduce the greenhouse gas emissions from manufacturing facilities

in the state and to support recycled content manufacturing in the state.

And finally, targeting methane emissions from landfills. As has been said before, methane is a short-lived pollutant and something we need to get a handle on in order to time change.

Naturally, we would hope that ARB could do more and faster on each of these areas. And we would like to keep that conversation going and address maybe a few specific actions that you could take in the near term. But that said, you're definitely on the right track.

I was going to say almost verbatim what Evan Edgar said about the waste sector really being every other sector. The waste sector being the transportation sector, the energy sector, the manufacturing sector, the agriculture sector. But he very eloquently said my speech for me, so I'll say I concur with him.

Finally, I also want to concur with Sam Emmersen's comments about the post 2020 goals. We've begun the transition for decarbonizing the waste sector in California. But really we need to look at the post 2020 goals to go from some of these early measures to a fundamental shift from a source of climate pollution to a source of greenhouse gas reductions and green jobs in California. Thank you.

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

Paul Mason with Pacific Forest Trust. And I'm going to continue the trend of people coming up here and thanking the Board and the staff for the excellent work that's reflected in the Scoping Plan today. And particularly, I think the forest discussion and the natural working lands section really was challenging for ARB, because it's not your core competency, and it will reflect a lot of effort there. And we very much thank you for it.

We appreciate the recognition when we start looking at our longer term goals, the reductions we're trying to get to by 2050, we're not going to be able to get there without significant contributions to increase sequestration and reduce emission from forests and other natural lands. They're just too big a piece of the equation to not address.

I note that the plan does talk significantly about the roles of wildfires, pests, and disease and potentially increasing emissions. We would caution that many of those are part of our natural background. California is a fire adapted ecosystem. If we want to eliminate fire, it's part of what was there. Maybe it's a little bit higher than background. But I think there is

some additional discussion to be had there.

What we do know is when we lose forests to other uses, when we convert them for development or alternative agricultural purposes like vineyards, those come out of that sequestration role permanently and it starts to undermine our very capacity to make gains in the future. So we would urge a continued focus and expanded focus on making sure we don't lose the very base that allows us to achieve the sequestration.

So we really look forward to working with ARB and with Resources on the variety of plans that are called for in that section of the Scoping Plan looking forward. And we thank you for your work on this. Thanks.

CHAIRPERSON NICHOLS: All right. Thanks.

MS. DESLAURIERS: Good morning, Chairman Nichols and Board members.

My name is Sarah Deslauriers. I'm the Program Manager with California Wastewater Climate Change Group, the members of which represent the state's wastewater community perspective on climate change issues.

I would like to echo Frank Caponi's comments on fugitive emissions from wastewater treatment plants and collaborating in that research, as well Julia Levins' comments on bioenergy and Evan Edgar's comments on carbon neutral and negative fuels from biogas. We will be

submitting a complete set of our comments in a letter in the draft proposed Scoping Plan as well as the appendices and want to just highlight a few specific issues here.

First, the Figure 3 showing the California methane emissions sources in 2011. It still inaccurately shows wastewater as one of the state's fifth -- or the state's 5th largest source of anthropogenic methane. The majority of this source is related to septic tanks, which are not owned or operated by municipalities. We have provided data based on the 2011 inventory of U.S. greenhouse gas emissions and sinks in our comment letter on the discussion draft, which shows septic tanks accounting for about 70 percent of the methane emissions.

We recommend separating these sources from the estimate of wastewater related emissions consistent with how these emissions are treated in the EPA inventory.

Second, in Section 4, the water sector text, it makes reference to electricity in natural gas consumption for the conveyance, treatment, and end use of water and wastewater, stating approximately 19 percent of the electricity and 30 percent of non-powered plant natural gas consumption in the state is used by the water sector. We recommend stating this as a 2001 California energy commission data reference. If our Air Resources Board intends to use this data as a base line for future

reductions, we recommend updating the estimates with the help of the water and wastewater industry to understand the current consumption level prior to CPUC's water energy nexus rulemaking that's going to take place in 2016.

Finally, the California Wastewater Climate Change Group supports and would like to work with the State Water Resources Control Board and the CPUC on developing incentives for resource recovery, related wastewater treatment projects, as well as work with the State Water Resources Board and Regional Water Quality Control Boards to modify policies and permits to achieve water conservation, water recycling, stormwater resource and diversion through green infrastructure and wastewater to energy goals.

We look forward to reviewing the appendices and expect to see more details and references to the wastewater community in those. Thank you very much.

MR. HARRIS: Chair Nichols, members of the Board. My name is Frank Harris with Southern California Edison. Edison will submit written comments once we're able to review the appendices. And in advance of that, I just want to talk about a few elements of the draft update as we've reviewed thus far.

First of all, Edison absolutely agrees with other comments calling for expanded and robust economic

evaluation of not just the measures imposed to reach the 2020 target, but also the measures and programs described for the long term to address long-term climate goals.

To that point, in order to address longer term climate goals, technical creativity and work ethic is critical. And I'm confident that the technical solutions to the long-term climate challenge are probably certainly not developed, perhaps not even known at this time.

I'm even more confident that the greatest role that the state can play would be to free up the industrious and creative the talents we already have in our regulated and research communities to develop and implement environmentally and economically sustainable solutions.

Edison is concerned that the mandates and specifically the sector-specific mandates represent a move away from that creative and effective solution. Consider, for example, the fuel switching benefit that electricity provides. A sector-specific target on the electric sector would certainly work in conflict to a larger solution being offered. Under mandates, regulated parties actually work to achieve the mandate, and that becomes a maximum level of performance, not a minimum. Whereas, a process that promotes the innovation such as the cap and trade program, can actually promote a movement beyond that.

Sector-specific mandates create that siloed effect where there are oftentimes as I've already mentioned, not just a lack of coordination, but different sectors working at cross purposes.

Such mandates also risk allowing flexibility needed to respond to changes in the state of the economy or the state of science. An example that was already referenced would be the CHP issue. Certainly, the target established in the first Scoping Plan should be reassessed. The California Cap and Trade Program is a dramatic program that's gotten a great deal of attention and is really a foundation for further emission reductions. Now is the time to build on that, not to shrink away from it.

Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Bonnie.

MS. HOLMES-GEN: Chairman Nichols and members, Bonnie Holmes-Gen with the American Lung Association in California.

And again want to remind you of the American Lung Association's engagement and commitment to this process. Extremely important to public health in California. And we're very pleased with the second draft of the Scoping Plan and the additional detail that's been provided for

all the sectors. And we do believe that this plan is critical to chart our path to a clean energy economy, both in the near future and beyond to 2050 and to demonstrate how our climate and criteria air pollutant programs work together and keep us on track for our federal air quality standard attainment.

We are very proud of your leadership over the years. The work we've done together that the work on advanced clean cars and zero emission vehicles, low carbon fuel, sustainable communities, and the plans to move forward with the sustainable freight strategy and this increased focus on pollutants. This is all very important and comes out in this plan.

Of course, our focus is on these key health co-benefits that we can achieve from these strategies and that benefit everyone, but especially the individuals that are suffering from asthma and lung disease.

Just a few specific comments as we move forward. We, of course, join the course of those who are asking for specific and midterm goals, both overall and in the specific sectors. You've stated in your plan that California must step up the pace of our greenhouse gas reductions to meet our 2015 climate goals. We have to redouble our efforts after 2020. So we strongly agree with the recommendations again for the 2030 midterm target

for specific targets for each sector. And to the extent that we can to put the GHG reduction specific numbers that we're trying to achieve in that great chart that you've included in the Scoping Plan.

Another recommendation, we would like you to continue your work to assess the health benefits of the existing AB 32 progress to date and evaluate the health benefits of climate measures going forward and the health costs of an action that we face. It's extremely important to continue developing this body of data.

One specific tool I know that you've included, you've mentioned in the plan the urban footprint is a tool that's being developed now that will help provide guidance to local communities on how to chose healthier scenarios for community and regional planning.

We want to see continued momentum on pollution -- getting reductions in pollution from transportation and specifically the heavy duty sector. That's one reason we are pleased with the clean freight strategy and the need to identify how we're going to get to zero emissions specifically with our freight system.

We'd like to see continued education of the public on the co-benefits, the health and other co-benefits of our greenhouse gas reduction strategies, and how these strategies are helping us, not only with

mitigation but adaptation.

Thanks for your partnership. Let's keep working together both on the broader climate strategies and the specific community near-term efforts. Thanks.

CHAIRPERSON NICHOLS: Thank you.

MR. LISS: Madam Chair, members of the Board, as a former Mayor and a zero waste consultant, I wanted to commend you and staff on getting it right, particularly on the waste sector. I think you did an excellent job.

One of the things that wasn't brought out in the report though I want to highlight that we talked about the waste burg that for every ton in front of us of solid waste, there is 71 tons created along the way from manufacturing, mining, and distribution of the product. So that 21 tons is the reason why we have to focus on reducing and reusing first and then recycling and composting the rest.

So the emphasis on addressing consumption and reducing is an important part of why businesses are leading the way to zero waste around the world. We're seeing many thousands of examples of businesses that have decreased their wasting by 90 percent to landfills and incineration in the environment.

General Motors, I've been working with in the development of a national standard for what zero waste

means. And they say they save a billion dollars a year through their 100 facilities that are over 97 percent diversion of waste from landfills and incinerators, just as one example. There is a significant emphasis upstream that is mentioned in the Scoping Plan. But in the future, I hope that will be an increased emphasis.

A new systems-based approach to the data of climate change and greenhouse gases by U.S. EPA found in 2006 about 50 percent of all greenhouse gases produced in America could be influenced by zero waste initiatives, product and policy, product and policies, things dealing with food, as Mr. Edgar and Mr. Lapis indicated. Zero waste cuts across all aspects of the Scoping Plan. And in the future like to recognize that more. Perhaps renaming it to the "zero waste sector" because that's what we're moving towards. Zero waste communities include the largest cities all over California. San Diego just adopted. San Francisco, San Jose, Oakland, Sacramento have all adopted zero waste as a goal. We'd like to see the zero waste sector be the new emphasis in the Scoping Plan as it goes forward.

Zero waste has the unique potential for getting people to focus on that reduce and reuse part of the equation. And that's how businesses save the most money when they eliminate wastefulness and they set up reuse

systems. That's where they save the money. And co-benefits that were highlighted in the EJ Advisory Committee recommendations are things that I concur with the Lung Association testimony just before.

Please emphasize that to the public that these are critical aspects of things and encourage you to address the specifics of the EJ Advisory Committee on waste sector in Appendices E Page 4 that haven't been clearly addressed so far in the Scoping Plan.

CHAIRPERSON NICHOLS: Thank you. Your time is up. Thank you. Very useful comments.

MS. PHILLIPS: Katherine Phillips with Sierra Club California.

First, I want to thank you for the improvements in this draft, especially the discussion of the scope of the problem and the need to take action. I think it makes this document, especially the opening portion of the document, the scientific review of the document, to public service. This is something that we'll be able to refer to and be able to be used to help inform Californians all over the state.

Secondly, thank you for including the discussion of the short-term pollutants. That's been something that I think a number of people have said over the years should be included. And I think CARB is taking an important step

by including those.

There are a number of specific elements where we think there could be strengthening. But I'll just say overall, we concur with what you've already heard about the need for midterm targets. We feel that while we are achieving the 2020 targets, the ability to achieve the 2050 targets will depend upon some clear goals in the interim to help every agency and every entity get to the long-term target.

Finally, there is an overall lack in the update of specificity. And I think on page 110 in those measures that are going to be done in the future, there is an awful lot of to be determined. And I think if we could see more specificity in the final product, that would be helpful. It would send the signal more strongly to the public that this organization and the state is committed to meeting those midterm targets and those long-term goals.

But overall again, I want to thank you especially for the very strong scientific basis for this document and the scientific basis for all the action that this state is taking on climate change.

CHAIRPERSON NICHOLS: Thank you.

MR. NOLD: Good morning. My name is Ken Nold with the Turlock Irrigation District.

I'm here today to give TID's perspective on the

Scoping Plan update.

TID has demonstrated its long-time support of the state's climate goals by investing in efficient natural gas plants and renewable before there was any requirement to do so.

TID also supports the state's efforts to move beyond AB 32 goals. How can we get to the stated 2050 goals? This is where we require a balancing of the state's environmental requirements with electric system reliability and rate payer costs. In particular, we request the discussion of key recommended actions for the energy sector on pages 51 and 52 of the proposal more clearly address the need to maintain grid reliability and minimize costs for rate payers. Reliability and rate payer costs are principles that are specifically recognized in AB 32 and should continue to be reflected in ARB and other agencies' efforts when expanding and implementing the GHG emission reductions goals.

The Scoping Plan update places an emphasis on demand/response and energy efficiency. We agree these are important tools once a district is working to effectively implement as part of its resource plan. But during multi-day heat events or further down the line when TID has incorporated much more renewable generation in its territory, the loads become less responsive to these tools

threatening reliability. Moreover, the draught and climate change are already having a serious impact on our existing hydroproduction, which will presumably be a key contributor to the net zero GHG emissions goals for the energy sector.

Given the limitations of energy efficiency, demand/response, and our existing fleet of hydro resources, the state will need reliable backup capacity. The discussion of key recommended actions for energy sectors should also more explicitly recognize the roles of POUs. As you know, POUs are public agencies with Boards that have been elected by the POU's rate payer owners and voters. There is a direct connection between the POU's rate payers and the locally elected governing Boards and the success of any new programs to achieve further greenhouse gas reduction.

Finally, and maybe most importantly, as the state develops new GHG emission reduction programs and its enforcement agencies should strive for administrative simplicity in these new programs. Many of the existing programs, like the RPS, have become unnecessarily complex, raising transactional and complex costs for regulated entities. The state should seek to minimize these costs as it develops new programs. Thank you.

CHAIRPERSON NICHOLS: Thank you. I'm smiling at

that one because we wrote a rule that was quite simple.

Mr. Baer.

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

My name is Paul Baer and I'm a climate economist with the Union of Concerned Scientists. I apologize for the lack of labeling up there. I forgot to point out the organization name is on the back of the card.

I would like to thank you for the opportunity to speak here today. In the Scoping Plan, the Air Resources Board sets forth the need to set midterm targets for global warming emission reductions, to spur engaged progress toward meeting a 2050 target for global warming emissions. This is a position which is strongly supported in California's scientific community.

To share the support, it is my privilege to submit for the record an open letter on climate change from California climate scientists and economists. 101 Ph.D. scientists and economists who live and work in California and are experts in some aspects of climate change problem, whether it be atmospheric science, climate impacts, or climate policy solution have already signed this letter to the Governor and California State legislators. The letter by the way was covered this morning in the Los Angeles times. This letter calls for

the state to continue and strengthen its leadership role in establishing strong science-based targets for the reduction of carbon dioxide and other heat trapping gases. Specifically, it calls for an enforceable science-based 2030 target.

The lead signers of the letter include nine of the state's most distinguished academics. Nobel Prize winning Kenneth Arrow of Stanford University, Roger Bales of the University of California Merced, Hilda Blanco of the University of Southern California, Gary Griggs of the University of California Santa Cruz, Michael Hanneman of the University of California Berkeley, Daniel Kammen of the University of California Berkeley, Pamela Matson of Stanford University of California Berkeley, Richard Norguard of the University of California at Berkeley, and Richard Summerville of the Scripps Institute of Oceanography at the University of California at San Diego.

The signers also include seven principle researchers for the third assessment from the California Climate Change Center and eight of the signers are lead authors the intergovernmental panel on climate change IPCC reports. Again, on behalf of myself, the Union of Concerned Scientists, and the signers of the letter, thank you for your time.

CHAIRPERSON NICHOLS: Thank you. Before we hear

from our next witness, I just want to comment that as you can see up there we're now at number 21 and we have 31. But the last two witnesses apparently indicated they wanted to speak at 1:30 to 3:00. Are they here? Roger Bales or Martha Conklin? Because I'm not sure that we will be here at 1:30 to 3:00.

Our plan was to go through this list and then break for our executive session and then, as usual, come back and report on action or lack thereof and adjourn at that point. So I guess I'm sending the message forth. I'll still be here and we may possibly have some other members, but I don't know we'll have a quorum at the point we come. Not that we're planning to take action, but just in case.

Mr. Farrell.

MR. FARRELL: Thank you. Thank you, Mr. Chair and members of the Board. My name is Mac Farrell. I'm the Global Warming Organizer for Environment California Research and Policy Center.

I wanted to take a moment, like most of the folks here, to thank you and offer our support for the expansive updated Scoping Plan and for the recommendation that interim goals be set for greenhouse gas emissions by 2030.

I'm also in the interest of cutting carbon emissions from cars and trucks, California's largest

contributors to global warming.

I also just wanted to encourage the Board to really do it again to ensure that rebate programs for electric vehicles are strong enough to bring clean vehicles to communities really of all income brackets across the state.

And finally, in closing, I want to make the following public comment to which over 2,000 environmentalists and members sign their names over the last few days. Since the Global Warming Solutions Act AB 32 passed here in California, we've seen how effective implementing practical climate policies can be for dramatically cutting greenhouse gas emissions.

However, with record low snow fall and record high temperatures and the increasing frequency of draught and wildfires, we can also see the effects of global warming right at our door step in the Global Warming Solutions Act we know is a way to change that.

Thank you for releasing a strong updated scoping plan and for implementing AB 32 going forward. I support the Global Warming Solutions Act and expanding our climate policies to encompass all major greenhouse gas polluters in the state so we hit our greenhouse gas reduction goals for 2020 and beyond. Thank you again. And we look forward to working with you to curb our climate pollution

going forward.

CHAIRPERSON NICHOLS: Thank you.

Mr. Jones.

MR. JONES: I'll make it as quick as I can.

Thanks, Madam Chair and members.

Steve Jones. I have been in this industry for 39 years. Sat on the Waste Board for seven as the industry seat, so some of my comments you might wonder what side of that aisle I was on. You need to understand at one point I ran 18 landfills. I'm in full support of the key recommendations for the waste sector. I think you've hit it right. I do think that the market discussion which was your last bullet point needs to get moved up. Without it, we don't have a full circle and that's very, very important. And it continues to be perplexing.

The landfill gas issues that you're talking about in this document as well as -- and maybe you're bigger than I was. But inside Cal/EPA there was some comments on the 14th that sort of set up an argument about the fact that it was the landfills were technologically limited in collecting any more gas.

Well, I will tell you that there are 27 states in this union that had organic bans. Five of them were overturned through working with the Legislature by some of those same companies that are technologically challenged.

And they were able to get their gas collected, put into a pipeline, sent to California, and the Energy Commission rewarded them by making them part of the program to get green gas credit.

So I have a hard time swallowing the fact that they don't have the technology available to capture this. When I was on the Board, I fought to keep ADC and use organics. But when ADC incoming flows were actually more than the amount of waste at some of these sites were covering, we had a big problem. Organics do need to be banned. Any work you can do to help get incentive dollars to those of us that make programs dealing with anaerobic digestion, dealing with other ways to make a product out of the organics, is going to be how we're going to be able to get this done. So not only building the equipment and building the processes that we need to stay ahead of this, but giving us the opportunity through incentives that the more actual tons we put through a facility is rewarded. Instead of the people that talk a good deal, deal with us that do a good job.

Thank you very much. We appreciate it.

CHAIRPERSON NICHOLS: Thanks for coming.

Good morning.

MR. MAGAVERN: Good morning, Madam Chair and Board members.

Bill Magavern with Coalition for Clean Air. And having been involved with the Global Warming Solutions Act from the beginning, I'm reminded again today of what a monumental task was delegated to this Board by the Legislature and what a good job you've been doing with that and continue to do with this new update proposal.

We, as many of our colleagues have said, very strongly believe that it is important as the plan recognizes to set a 2030 target for emissions. And we're glad to see that Senators Pavely and Lara have introduced legislation that would call for ARB to set that target. So it's very helpful that the dialogue is happening between the Executive Branch and the Legislature.

We appreciate the fact that the proposal would move the date for having a plan on short-lived climate pollutants to next year. And since it is so urgent that we have control strategies for those pollutants, we're very happy to see the attention being focused on methane and black carbon and the refrigerants and others in that area.

Most of our work is in transportation, so the discussion today has continued what was started last month on sustainable freight strategy, and we look forward to continuing engagement on that. We think it's crucial some of the auction proceeds be devoted to zero emission

vehicles in the freight area as well as in personal transportation as proposed by the Governor in his proposal for the 2014/15 budget. We think there needs to be a sustained multi-year commitment to getting those vehicles on the road in the very major numbers that are going to be needed to meet air quality goals as discussed in your scientific presentation, as well as to get our greenhouse gas emissions under control. We also think there is a very important role here for public transportation and some of the auction proceeds should be devoted to that purpose.

And as we discussed last month, the SB 375 targets should be reviewed and updated since it's been four years since they were originally set.

Finally, just want to endorse the very fine recommendations that were made to you by the Environmental Justice Advisory Committee that are included in the appendix. I think that Committee did a great job and urge you to pay very close attention to their recommendation. Thank you.

CHAIRPERSON NICHOLS: Thank you.

MS. SKVARIA: Hi. My name is Mikhael Skvaria. I'm with Lucas Advocates here representing the California Council for Environmental and Economic Balance, a non-profit, non-partisan coalition of business, labor and

public leaders that works to advance policies that protect public health, the environment, while expanding economic opportunities for all Californians.

CCEEB appreciates the opportunity to address the Board today. While the Scoping Plan update is clearly a result of considerable work, CCEEB is concerned that the draft update does not include any economic analyses or feasibility studies for many of the discussed topic. AB 32 is very clear that regulations and strategies for reduction of GHG emissions be technologically feasible and cost effective.

Properly performed and updated economic evaluation would better inform ARB planning activities. Specifically, CCEEB urges the Board and staff to consider including discussions of commercial availability, scaleable technologies, as opposed to discussion of theoretical technologies. Furthermore, an economic analysis should be completed before adopting the Scoping Plan update. Waiting until 2018 for an economic analysis is probably too late.

Second, sector-specific targets are going to hurt the overall policy. There should be equity in policy, not equity in technology. The complexity of new and specific sector measures will add costs without providing emission reduction benefits. Sector specific goals across the

expansive California agencies BDOs without a single control point will silo California's climate policies across multiple agencies and departments, further complicating regulatory and compliance processes.

Lastly, CCEEB urges the Board and other agencies being tasked with roles in AB 32 implementation to consider closer cooperation, not only in terms of policy development, but in terms of hearings, comment periods, adoption deadlines. Avoiding the siloing of housing at different agencies would be beneficial and would help ensure California policy is implemented in the most equitable and efficient manner possible. California lacks the unified energy policy and will lack a unified climate policy if we continue down this path.

CCEEB looks forward to working with staff and the Board moving forward and will provide written comments at a future meeting. Thank you.

CHAIRPERSON NICHOLS: Thank you.

MR. ADDY: Good morning, Chairman Nichols and Board members.

My name is McKinley Addy with AdTra, a virtual integrator of low carbon, high efficiency technology across the food and ag, transportation and energy sectors. I previously had the privilege of working with the Air Resources Board staff and Energy Commission staff in

modifying the model being used for the low carbon fuel standard.

AdTra wants to commend the Air Resources Board staff for the robust effort on updating the Scoping Plan. My comments will focus on the transportation element of the plan. We support strengthening and extending the low carbon fuel standard through 2030. We also support the clean freight strategy.

AdTra specifically supports staff's characterization of the role that natural gas trucks can play in meeting California's multiple policy goals of environmental protection and fuel choice.

Increased transportation natural gas use can put California on the path to NOx reduction and meeting the health based ozone national ambient air quality standards in this state's severe non-attainment areas.

We are pleased to see that the revised update is consistent with the California Energy Commission's thinking on the possible role of natural gas use in the transportation sector.

I also want to highlight the work of researchers at Stanford University, MIT and Enril in the recent study of the issue of fugitive methane emissions and a potential impact on the greenhouse gas emissions performance of natural gas trucks compared to diesel trucks.

Fortunately, there are many natural gas reduction and distribution best practices and power train technology solutions to manage fugitive methane emissions. Higher efficiency natural gas engines being key among several. Deploying these best practices and technology solutions can allow California to benefit from inherently low carbon attributes of natural gas and low fuel cost benefits to customers.

We encourage the Air Resources Board, the Energy Commission, and the South Coast Air Quality Management District to continue to work collaboratively to capture these benefits as well as allow a follow up with Stanford University on some of their findings and what can be done to address some of the concerns that that raises. Thank you.

CHAIRPERSON NICHOLS: Thank you.

MR. ANDREONI: Good afternoon, Chair Nichols and Board members. I think it's officially afternoon.

My name is Anthony Andreoni. I'm the Utility Director of Regulatory Affairs for the California Municipal Utilities Association, or CMUA for short. I want to thank you for the opportunity to provide a few comments on the updated Scoping Plan.

CMUA protects the interests of California's consumer-owned utilities and represents its members'

interests in both energy and water issues. Our members are committed to local economic development, including job creation, and have an excellent track record in providing reliable electricity at low rates.

CMUA members have also demonstrated leadership on environmental issues like climate change, including cap and trade, meeting the 33 percent RPS by 2020, and have a solid record in expanding energy efficiency programs and developing vehicle charging infrastructure.

CMUA members are also committed to implementing existing requirements that achieve the goals and that minimize and manage the costs to electricity consumers. We further believe that policy makers benefit by being made aware of the potential financial and operational aspects and that this awareness will lead to policies that avoid consumer backlash to rapidly increasing costs.

So with this in mind, policy makers and decision makers should consider the cumulative effects of electricity policies, both proposed and existing, within the context of the whole electricity system as new policies are added. Too often, individual policies are created without regard to their effect on the broader electricity system. And for example, going back to what Turlock Irrigation District mentioned, mandating the addition of large amounts of variable renewable resources

to the existing electricity system creates a need for additional generation sources that can be ramped up or down quickly to fill in these variable resources.

The overall firming generation will likely be natural gas fired, which can be difficult to get permits for on a very aggressive timetable. As renewables come into play, some of this may conflict with other state environmental policies and local air district rules in bringing these sources up.

So I have two additional points aside from that on the updated Scoping Plan. These are very general. The ARB needs to consider both technical feasibility and cost effectiveness issues in meeting the interim and long term goals at reasonable rates for customers. And a few folks have already mentioned this.

One last point here. ARB needs to begin the coordination on extending the cap and trade program beyond 2020, including developing a cost containment plan. Thank you.

CHAIRPERSON NICHOLS: Thanks.

MS. BERLIN: Hello, Chairman Nichols and Board. My name is Susie Berlin. I'm representing the Northern California Power Agency.

CPA appreciates many of the changes to the draft update, recognize the comments raised by stakeholders late

last year. We applaud the bold approach taken in the Scoping Plan update, the extensive coordination with other state agencies, and reliance on the latest climate science.

The draft update calls for reduction to 80 percent to 1990 levels by 2050. While other states and countries have enhanced their commitment to reduce emissions, it's important for the draft update to recognize that even greater participation from our neighboring jurisdictions is going to be necessary to meet this goal. Setting statewide and sector-specific targets should not be informed solely by climate science, must also account for the technological feasibility and cost effectiveness of the various measures, and should be developed only after a comprehensive economic analysis.

Accelerating the path of reductions while staying within AB 32's mandate to utilize the maximum technologically feasible and cost effective actions will be challenging for all sectors, including the electricity sector. It's important to balance the objectives with attainable goals and to distinguish between programs that can and should be encouraged versus those that are technologically feasible and capable of effecting GHG reductions.

The draft update properly acknowledges the

overlapping of the six key areas which is especially important for the electricity sector, which will probably be seeing an increase due to electrification of other sectors.

The key recommendations for the electricity sector must be analyzed in the context of each measure's ability to be implemented. We support the comments of the other party's raised here today that call for a more extensive economic analysis. Technological feasibility and cost effectiveness must be considered and the impacts on reliability of the electric system must be factored into the analysis before an ultimate recommendation can be made.

A reliability of the electric supply must be factored into the total analysis, especially in light of the ever increasing emphasis on renewable energy.

In developing a comprehensive GHG reduction program for the energy sector by 2016, CARB needs to take into account the external factors that impact electric supply.

With regard to the cap and trade program, maintaining the momentum in this program will require stakeholders to know exactly what the program will look like moving forward, including allowance allocation and auction structures. Completing this exercise by 2018 is

to late to provide the certainty needed for compliance entities currently making long term planning and investment decisions. That needs to be done sooner rather than later.

We support the inclusion of Appendix B, the still pending discussion regarding the status of existing Scoping Plan measures is important, and that analysis should take into account and scrutinize programs that may not have been a successful as originally anticipated.

CHAIRPERSON NICHOLS: Okay. Thanks.

MR. CREAMER: Good afternoon, Chair Nichols and members of the Board.

Casey Creamer with CCGGA and WAPA. We represent 100 percent of the cotton production here in California, as well as over 80 tree nut processing facilities here in California.

Just want to highlight that ag has a very good story to tell with regards to AB 32 and actually greenhouse gas emission reductions. Our emissions in farming agriculture remain constant or actually a little bit decreasing. But at the same time, we are actually increasing output, which you know is preventing leakage and we're doing a whole lot more with less.

I was talking with one of my members last night back before 1990, we were using about three-and-a-half

acre feet of water to produce roughly two bales of cotton per acre. And today, we're producing between three and four bales on as low as 1.5 acre feats of water. We're using less inputs, getting more production. That's going to be a key strategy for the agricultural sector to say alive in California with the increasing costs that are passed down from energy sector, from fuel use, and other inputs.

So as always, we remain concerned with the increasing costs that are borne with instate passed down costs down to us when we don't have the ability to pass those down to other to the end consumers. We remained concerned our competitors, many of our competitors, especially China, are not subject to any of these regulations, which hurt our competitiveness and hurts our farmers and our rural economies drastically.

Of most concern obviously for us we've stated in the previous workshops is the post 2020 discussions. We agree with you guys making recommendations for that. We believe the staff is the appropriate place to make those recommendations. And we'll continue to work with staff to make those recommendations in clear policy recommendations to the Legislature.

We do believe that this should be recommendations to the Legislature, just like AB 32 was put into place.

It's a broad strategy, has far-reaching effects on the California economy, the California way of life. And we would just encourage you in this Scoping Plan draft to clarify how California and how the ARB specifically is going to go about setting midterm and 2050 targets because we do believe that the Legislature is the appropriate place to do that. So with that, thank you very much.

CHAIRPERSON NICHOLS: Thank you. Appreciate your comment. I agree with you.

I just want to also thank you for staying engaged at a point when I know that your industry along with others, but particularly yours, is being hit so hard By the draught. The fact you're continuing to focus on efficiency and on this issue is much appreciated. Thanks for being here.

MS. ALVARD: Good afternoon, Chairman and members.

Adrienne Alvard California Western Director of the Union of Concerned Scientists. I think I'm standing between everyone and their lunch so I'm --

CHAIRPERSON NICHOLS: Lewis Blumburg is after you.

MS. ALVARD: I'll keep my comments brief.

On behalf of UCS, I want to thank you and your staff for doing a great job on the draft document and the

time many of you took as well as the staff to talk to us about the concerns on the discussion draft.

Dr. Baer already called attention to the many distinguished scientists and economists who have underlined the scientific case for the measures you're considering. On behalf of UCS, really want to thank you for the robustness of the science portion of this document.

We continue to want to look forward to working with you on the low carbon fuels, the clean vehicles, and the heavy-duty vehicles sections of the report. And there are three areas of the update that we want to work with you to strengthen.

First, we'd like to see a stronger signal on the need for greater penetration of renewable energy and we look forward to developing measures that will help with that.

Second, as we discussed with you, we feel the need for much more robust attention to agriculture, particularly agricultural water use. As you know, that's 19 percent of the energy we use in California. Particularly with groundwater pumping, we don't know what we're using. That's important.

And finally, in terms of the mention of possibility of a California REDD program, as you know, we

do have some concerns about additionality and enforcement in jurisdictions that we don't have control over, particularly if those jurisdiction don't have a cap. But in the main, we think this is an admirable and visionary piece of work. We look forward to continued constructive engagement. Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Lewis, you do have to last word.

MR. BLUMBURG: Thank you. I hope you enjoy your lunch. I'm Lewis Blumburg, Director of the California Climate Change Program for the Nature Conservancy.

I, too, want to share and express our thanks to you, Chair Nichols, and the Board members for your continuing leadership on climate change and our gratitude to the staff for the excellent job they continue to do, in this case, on this Scoping Plan update.

Just a couple three points here. The time to deal with the post-2020 planning is now. We're supportive of that. We need increased reductions as quickly as we can. We do not have time to wait. The longer we wait, the more expensive it will be and the harder it will be to deal with climate change. So we support that fully.

Also want to call out the natural lands section. We're appreciative this has been expanded from the first version of the Scoping Plan and using natural resources to

address climate change, this automatically provides multiple benefits. In addition to relying on the technology of photosynthesis, it stores carbon as well as helps reduce climate risk and resilience. So multiple benefits here again.

Also we appreciate the expanded role forests and the sectoral approach to forests. There are jurisdictions around the world and they're looking at what California is doing around this approach with the new forest inventory. So this is another commendable area where we look forward to working with you on.

There are some areas that we want to continue to develop. And one example would be on wetlands. We believe that it's important to have a greenhouse gas inventory from the dealt. There's significant emissions from the pete soils, and those need to be quantified and inventoried in order to capture the full benefits.

Once again, we can reduce emissions and while reducing climate risk and helping protect the water supply for 25 million Californians there.

And the third point I want to make is around the potential for international offsets. We're pleased to see there's language in the Scoping Plan that recognizes that climate change is a global problem and needs a global solution and 15 percent of the annual greenhouse gas

emissions globally come from the loss of tropical forests. So we encouraged by that and look forward to working with you on that.

And here again, there are multiple benefits. People tend not to realize that much of California's water originated in the tropics and comes to California through atmospheric rivers. One recent study found that elimination of the rain forest of the Amazon would result in a 50 percent reduction in the snowpack in the Sierra Nevada. So what happens in the tropics affects Californians.

And there are other benefits as well to supporting indigenous communities and their way of life and the biodiversity.

In the end, let me close with something a comment I made before this Board is that the world is watching. And only last night in San Francisco at the Commonwealth club, Todd Stern, the U.S. Envoy on climate change for the United States mentioned that California's cap and trade program is a model for the world. The world is watching, and I encourage you to continue your good work and adopt the Scoping Plan. Thank you.

CHAIRPERSON NICHOLS: Thank you. Okay.

That does conclude the list of people who asked to comment. I think Board members may have a few comments

and suggestions/directions for staff. I just want to make a couple of points on things that I heard.

First of all, I guess this is addressed to whoever of the staff. Obviously, we convened a new Environmental Justice Committee in order to help us with this report, and we do have their recommendations and they're brought forward. But it doesn't appear they've been systematically incorporated or at least flagged in the Scoping Plan.

Is there a thought about making sure that we do that? Or should I say, could there be? Because I think there should be a way to specifically call out how we've incorporated those recommendations in the final.

CHIEF MARVIN: I would point out that we did not have an opportunity to reconvene the Environmental Justice Advisory Committee after this draft was released because there just was not enough time for the Committee to do that. We will be meeting with them in early April so we'll hear their updated comments on this draft. And we would be happy to share with the Board a document we produced for the Committee last time, which showed side by side their recommendations and then how those were addressed in the plan. And we can do that for the next draft.

CHAIRPERSON NICHOLS: Okay. And then on the

issue of how economic analysis is being done, I know this is always an ongoing issue because of the requirement that we look at each and every specific proposal as it comes forward. But in terms of the overall analysis of the new sector-based approach, what's the timing on that?

Mr. Cliff.

ASSISTANT CHIEF CLIFF: For the last plan, we did a very thorough analysis of the economic impacts of the potential measures going forward to meet the 2020 statewide limit. What we're doing now is calling for development of new tools, new data collection, and then updating that analysis going forward. So we anticipate that by the next update of the plan, in 2018, we would have the fully developed tools. A look back at the measures that we already adopted and a look forward to see what sort of impacts we might anticipate from future measures.

I think the point there is in working through this with our economic advisors is that we're trying to use what we've learned from implementation of the initial Scoping Plan to help inform measures going forward. So that update would happen with the next plan.

CHAIRPERSON NICHOLS: Okay. Then before I turn this over to other Board members, on the issue of the sectoral approach, which is a feature of this version,

this update to the plan, we've heard from a couple of people who criticized the idea, well, some people just want their sector to not be a sector anymore, like waste, when is a really admirable goal.

From the electricity side in particular, the concern that somehow by focusing on them as a sector we would be failing to recognize the role they play in transportation or other ways in which cross-sectoral -- what's the word -- things are going to happen that cross sector lines and should. We would want that to happen. But never the less, there seems to be some coherence to this notion of looking at economic sectors in a focused way. And it might be good to just take a minute or two to talk a little bit further about the thinking behind that organizational approach.

MR. CLIFF: I think developing the plan by sector helped in coordinating the various agencies' input. As well I think it's consistent with how we develop the initial Scoping Plan back in 2008. We recognize that there's cross-cutting issues in all sectors. And I think we try to draw out those various issues throughout this new draft of the plan.

What we call for is a midterm limit that would be similar to the statewide limit in 2020 for some midterm period, but that we would also have planning targets for

each sector. In developing those planning targets, I think we need to take into account how the sectors will change over time. So we did hear a lot of comments about, for example, how transportation will be more in the electricity sector going forward. So I think that the midterm targets will have to take that into account.

CHAIRPERSON NICHOLS: Would you see the overall state target being composed of the specific sector targets rolled up into one? Or is it the other way around where you set a target based on what is needed and what you think could be accomplished and then take it back through the sectors, or is it both?

ASSISTANT CHIEF CLIFF: I think it's more the latter. But certainly the sector targets should add up to what the statewide limit is. I think the --

CHAIRPERSON NICHOLS: Yes.

ASSISTANT CHIEF CLIFF: -- limit needs to be informed by the science as well as what's achievable. At the end of the day, we need to have a plan that works for California. We want others to follow. And that's not going to work if it's not a workable program for California. So that's absolutely necessary.

CHAIRPERSON NICHOLS: Okay. I'm going to start at this end with are Supervisor Gioia.

BOARD MEMBER GIOIA: Thank you. First, I had a

couple of questions and comments. But let me first start by saying I appreciate there's been a lot of really good things added to this draft, specifically the short-term climate pollutant strategy. I see you make reference to the sustainable freight strategy. I thought you could have discussed it a little more because I think it's a big deal, although you do reference it a few times. And, of course, the further discussion about the climate science. It's all I think been very good and approved.

Just a couple of areas. To follow up a bit on Chair Nichols' comment on the Environmental Justice Advisory Committee recommendations, I know their series of recommendation were from October. And it seems to me some of their recommendations got incorporated. Some did not. I do think it's a good idea to sooner rather than later get a clearer understanding of that. But it sounds like -- if you're meeting with them in April, that's not much time before the next draft is out. So I'm concerned whether we're going to stay on the May time schedule if you meet in April and are in deed making changes. If you're meeting with them earlier or this is not coming to us in May because that's a tight time frame.

A couple of areas. One, clearly, under SB 535, the requirement that 25 percent of the cap and trade revenues -- and of course that's referenced here of course

in the Scoping Plan, are spent to "benefit" disadvantaged communities. Nobody has taken on the issue of defining what benefit means. And I'm concerned that as this moves forward there will be attempts by many to define benefit more indirectly rather than directly. I've already heard some of that even at the regional levels. It seems to me that the legislation is somewhat vague on this issue that it may be timely for us sooner rather than later to develop some guidelines about what that means, because if we don't, somebody else may. And the definition of benefit may end up being much more indirect than we all think it should be to be meaningful.

So I'd like to suggest that we develop a plan to look at that issue. If we can include that in the Scoping Plan, that would be really good. So that means we need to start that now so that the next draft of the Scoping Plan has some discussion over what it means to benefit. I mean, clearly the ten percent to be spent in the community, that's easy. That's the enviroscreen boundaries. But the benefit is a bit more unclear. So since no one else seems to have taken this on, it seems that we may be the appropriate entity to do that.

The second point, there's been a lot of discussion by many about the health analysis, doing a health analysis. And in the evaluation discussion on

pages 142, 144, that whole area, it's unclear to me exactly how that's going to occur. You make reference to various efforts. It may be useful to actually show the work plan and what specifically -- there is a lot of text about that, but it's still unclear. And I realize you point out this is a pretty complex area. How do you really control for the issues we want to look for? There's so many complex issues as you look at this.

And you do say -- you talk about the ARB will work with the Department of Public Health, Office of Environmental Health Hazard Assessment, local air districts, and environmental justice communities and organizations to evaluate the feasibility and potential methods for monitoring assessment and quantification, the metrics issue. So can we have some further delineation of a time frame about how all this will occur? Because it didn't seem to be a clear description that this is what we're doing. It said this is important and identifies it.

The other item, which is a sub-set of this, which I think is really, really important. And this says, "ARB will continue to work with the local air districts to design the Cap and Trade Adaptive Management Monitoring Program to identify and respond to concerns about the potential for localized emission increases due to the cap and trade regulation." Because that's been identified

that there could be some consequences and that result in increased localized health emissions as a result of the Cap and Trade Program. I think that would also be more useful to lay out the timing of that as well. I'm not as familiar about the planning that's going on in this area. That's clearly key.

Another issue -- sort of focusing on the metrics and evaluation. "Additional effort will be needed to advance the development and adoption of tools to evaluate the health benefits of land use and transportation planning as well as to better educate policy makers, local officials, and the public of these impacts." So you're aware there is a lawsuit by the home builders against the Bay Area Air Quality Management District that I think somewhat touches on this. When the air district came up with its new CEQA guidelines, its thresholds of significance to look at the idea that if we're going to build housing to accommodate -- under RCS, the housing should be build in infill areas, which may be in industrial areas or near a freeway. So that's one policy, which is a good policy is infill is good. It's a way to do denser housing, getting people not to commute as far near transit.

But one of the potential unintended consequences is some of the locations for housing are near freeways

with diesel emissions, sources of pollution. The air district tried to address that by coming up with this standard to say let's look at health impacts when you build housing and that may effect how you condition the housing or set it back from the source of pollution.

The home builders challenged that saying that was like a reverse CEQA issue. You're looking at the effect of the environment on the project rather than the project on the environment.

That was an attempt by the local air district to come up with a tool so we could better understand health benefits and look at how we're achieving multiple objectives. So I think this is a really important area for the success of all of this because there's competing -- on one hand, we're addressing climate change by sustainable community strategy, which is saying we're trying to build development near transit infill areas and that helps us in climate change.

Likewise, we potentially are exposing people to greater health risk by building the housing there. So it depends what happens with this lawsuit. If the lawsuit is successful and overturns the Bay Area Air Quality Management District's CEQA thresholds, then we need to find another way to address this issue because it's a common issue statewide. I don't know if you have any

comments on that, but it seems to me that's important.

So those were -- I think that was it. Just to acknowledge, there is a section on local and regional leadership starting on page 122 which is enable local and regional leadership. I think the Scoping Plan points out some really important things, which is local and regional government are going to have significant authority in this area over activities that contribute to GHG and air pollutants. And so it's important to link with that. And you identify the importance of how to financing mechanisms and incentives.

Clearly, cap and trade revenues is one area. But the development of long-term revenue streams and creative local financing mechanisms and incentives can accelerate emission reductions. I don't know whether it's possible to have more on this because I think this is key. Many folks here come from local government or certainly serve on regional air districts as well. Coming up with the financing mechanism to allow local government to do what it wants to do to achieve emission reductions and you have a really good discussion here about some of the efforts that are going on. But I think you identify the financing issue is really important.

CHAIRPERSON NICHOLS: Let me just say I'm hoping is staff is taking notes. What I'll do is hear from all

the Board members and have them respond collectively. Sandy, were you -- No.

BOARD MEMBER SERNA: First, I want to say that I couldn't agree more with Supervisor Gioia's first comment about the importance of really considering what constitutes benefit in the context of satisfying SB 535. This is a Scoping Plan relevant to a different piece of legislation, but as we all know, they work hand in hand. So I appreciate those comments and those suggestions.

In fact, I want to dovetail off that a little bit. Mr. Magavern mentioned, you know, the need to really explore fairly deeply in the Scoping Plan. I would tend to agree with him. The prospect of looking at zero emission vehicles in the freight sector. And, you know, one of the things I'd have staff consider if it's not underway or not done yet in the draft somewhere is, you know, look at the possibility of an easy-to-understand matrix with some narrative to it that really highlights those areas that haven't been exploited in a good way that actually satisfy a number of policy objectives for us.

Namely -- I'll use zero emission freight vehicles as an example. If we begin to focus on that more than we have and through the implementation of the next Scoping Plan look at ways to incentivize zero emission freight vehicles, we're satisfying the intent to improve health

outcomes. And we all know in many of those freight facilities, whether it be ports or freeways, are located primarily near disadvantaged communities. So it satisfies the intent of trying to benefit disadvantaged communities.

It also speaks to the need to try to affect black carbon, and that has tremendous health impacts. So I think it would be useful -- that's just one example. I think it would be useful if staff could look at other perhaps robust intentions in the next Scoping Plan that kind of gives the reader, the interpreter of the Scoping Plan, an idea of where we kind of get the most benefit, based on the focus that we really want to underscore that has a health impact, that has a greenhouse gas impact, helps satisfy other relative legislative directives. I think that would be something that could add some value to the Scoping Plan.

CHAIRPERSON NICHOLS: Okay. John.

BOARD MEMBER BALMES: So first off, I really want to endorse the overall approach of trying to get the biggest bang for the buck with regard to co-benefits in terms of other air pollutant exposures as well as controlling greenhouse gas emissions to mitigate climate change. Since I've become a member of the Board, I think that's where we really are leading the nation and perhaps the world.

When I go to conferences about air pollution and health effects, I really feel that our strategy of trying to do both at the same time is way ahead of anybody else I hear in terms of other jurisdictions. I also want to take the opportunity to really say how please I am with our new Board members, because I can just 100 percent agree with both the comments of Supervisor Gioia and Supervisor Serna, so it'll make my comments shorter.

I likely like Supervisor Gioia's call for definition, more detailed definition, and clarification of what benefits mean in this context, especially in terms of health. I think that's a superb idea. And near and dear to my heart I think staff knows is trying to flesh out our Adaptive Management Monitoring Program. To me, that was sort of a condition of my endorsing the original Scoping Plan, as some of you may remember. And I haven't heard very much about it lately so I want to keep plugging away at seeing some detail about this, because I think it's an important part of the program in terms of capturing or measuring the co-benefits that we're hopefully getting. So I'm pleased that Supervisor Gioia brought that up so I didn't have to.

And I also like Supervisor Serna's example of incentivizing zero emission vehicle freight development. I think having more such examples in the final Scoping

Plan would both satisfy me and I think a lot of our stakeholders with regard to a little bit more specificity in what we're trying to do.

And the last point is to emphasize how impressed I was to receive the letter yesterday to Governor Brown and legislators that the Union of Concerned Scientists organized looking through the list of 150 or so scientists. These are the top climate change scientists and economists in the state. These are high-powered individuals who I think I really thank them for taking the time to endorse this letter, which calls for the midterm target that now staff is embracing. I thought I had to come up here a month ago and harangue for that. Now I no longer have to. I think that letter underscores the scientific foundation upon which we need to have to go forward with a midterm target. And I guess now the Legislature is taking up the call as well. I think we have to have such a target.

CHAIRPERSON NICHOLS: Okay. Yes, Judy.

BOARD MEMBER MITCHELL: Thank you, Madam Chair. We heard a lot of comments about the 2030 midterm goal. And I fully support that we need to look at a 2030 goal. This is the time to do it. And we know that Senator Pavely is bringing forth some legislation that will put that in place.

What I would urge is that the Air Resources Board be working closely with the Legislature on this issue. And we do have among the staff for our Board incredible resources with knowledge in science and engineering that that is incredibly important to setting any kind of midterm goals. And so I urge a strong collaboration here with our persons here at Air Resources Board, including the Chairman, of course, and our staff people.

One of the comments that we heard this morning which was interesting was from Mr. Neil Black and also Mr. James Garner. This dealt with the dairy digesters in the San Joaquin Valley. And that those are getting built to a large degree and building of those facilities is accelerating. And as we know, dairy digesters is one of the four offset protocols that we now have in place under the Cap and Trade Program. And so I'm very supportive of that effort.

The other thing is that as we look at the Scoping Plan, I think we should also be considering the other kinds of offset protocols that we might be looking at within California, because we've heard a lot of criticism, as you know out on the street and other places, that the methane or the greenhouse gas reductions that we're getting from offset protocols, there is a preference to have those occurring within California.

So I just would like us to keep that in mind and think what we might bring forward that represents greenhouse gas reductions within the state.

And I say that understanding absolutely that this is global climate change. It doesn't happen just in California. It happens across the globe. And that offset protocols in other regions do benefit California indirectly because it is a global phenomenon.

The other thing is Supervisor Gioia's comments about SB 535. I could not agree more that we needed to be focusing on some definitions of benefit. The expenditure plan is actually pretty good about saying expenditures in this area will benefit disadvantaged communities and in this area will -- so there is that within our expenditures plan that helps inform those decisions.

And we also have to keep in mind that the expenditures of cap and trade moneys must be going toward greenhouse gas reductions. So you have that little parameter around what we discuss here as far as what the benefits are for that program. But I think there are some very good possibilities, and I think that we should be trying to define those so people know where that money might go.

So I think that's the gist of my comments. I think you guys, all of you -- and I shouldn't call you

"guys," but all of our staff have very good job in the update on the Scoping Plan. You've made some improvements that I think probably everyone is pleased with, as we've heard this morning. So I thank you for all your hard work.

CHAIRPERSON NICHOLS: Dan.

BOARD MEMBER SPERLING: So I'd like to go back to the discussion that Chairman Nichols had with Steve Cliff, and I this think that was a really foundational important one as we think about this. And if we look back, ten years ago, ARB was not dealing with -- was dealing with one-tenth of these topics and issues that we're dealing with now. We've broadened our responsibilities, our activities, our expertise dramatically in the last ten years since we've taken on climate change.

And so we're inventing a lot of things here as we go as part of it. And I think the agency has done a great job. I've been incredibly impressed with the expertise that's been developed, the outreach and so on.

I guess as I read through the Scoping Plan, the one area that I think we need to emphasize a little more building upon that discussion before is, you know, what might call this silo effect that it's defined in many, many ways. So we can think of it in terms of cross-sectors. So we organize it in sectors. And I think

Steve Cliff was compelling in how he justified the strategy, and I think that's right.

But at the same time, there are all of these effects that cut across sectors, media. There's air, water, waste issues. There's co-benefits. We use all these different words that really mean everything is related to everything. And I think we need to go in the direction that we are going in, but continue to understand and address those impacts or those interactions that are taking place. Some of them are negative and some are positive.

And co-benefits, that's a very positive thing. And so when we try to evaluate -- so I looked at the economic analysis. And a lot of it is kind of targeted towards saying, okay, if we do something, what's the impact, as opposed to using it as a tool for thinking about where do we focus. You know, you can go in a very simplistic way back the old Mckenzie supply curve that said just work along that curve until -- do the easiest cheapest things first and more cost effective. But there's, of course, lots of flaws in the ways it's done. And it's partly because there are all these impacts across media, across sectors, across -- a lot of things that are hard to measure.

So there's no -- I testified to the Legislature

the other day, and they kept talking about they wanted metrics, metrics, metrics. As an academic, I said that's right. But in practice, it's really difficult to develop all these metrics that we're talking about and all these analyses.

So I think what I'm saying is I think we're on the right path, but I think we do need to continue putting eve more and more effort into, one, understanding the economic implications as we're going along in a robust kind of way. That means the co-benefits. And we have to be careful when we do the central analyses, that we are taking into account buildings are related -- increasingly, buildings are related to transportation and different fuels are related in different ways. It's a really complicated world.

I guess the one last interaction that we might be thinking about is mitigation and adaptation, because there's many things that can be done for adaptation that have mitigation effects and vice versa. So it's just part of that same theme thinking in terms of a system, thinking about interactions. That's hard for us because, you know, we came out of being a narrow air pollution agency. And now we're taking on more and more topics and requires more and more expertise. But we're on the right path.

CHAIRPERSON NICHOLS: Okay. Thanks.

Any other -- if not, I'd like to ask the staff to respond, not to everything. You can take all the praise and just bank that for future use.

But I do think there were a couple of comments that at least deserve a little bit of response. One would be on the co-benefits issue and another just on benefits and SB 535 as well as sort of how we can buttress some of the conversation about local government.

So, Richard, do you want to take that on?

DEPUTY EXECUTIVE OFFICER COREY: I was having a back and forth conversation, but actually I think I'll just take the prerogative. They're making faces behind me.

CHAIRPERSON NICHOLS: We'll let them wave.

DEPUTY EXECUTIVE OFFICER COREY: I'm going to circle back last on 535.

But a few comments related to the clarity of next steps, what are the actions with respect to the health analysis. So in terms of the revised version in terms of more clarity on what those steps are, I think we can do that and expand on that. Some of those next steps I think involve some other organizations. They may involve some contract work and so on. But I think laying out what that looks like in some greater clarity is reasonable and something we can follow up on.

The comment about adaptive management, this is one that we have actually been working with the air districts on back with the CAPCOA's Climate Protection Committee. You recall this goes back to the revisions to the Scoping Plan and the discussion going forward about really the ability to anticipate in terms of looking forward, what kind of metrics, what kind of data could be collected, could help to inform potential impacts going forward, also as well as a look back.

Laying out the work that we've been doing with CAPCOA, as well as what those next steps is something we can expand on that discussion some, because I think it's a really important question. And one where I think there's been progress with the district discussions that we've been having.

The comment on I think it was Supervisor Gioia was an interesting one. It was a really important one in terms of we want to make sure that we recognizing in the discussion that the critical role that local communities and local jurisdictions play in terms of an overall climate policy and the actions from a planning standpoint that were underway, but also recognizing the funding stream issues. And clearly, you're right on point, recognizing that the clear one is calling out the role that cap and trade incentives realize could play, but also

recognizing the need is substantial.

This is one though that I think we're particularly interested in some additional input from you, Supervisor, and others. And I know there's several folks that have commented today that will be commenting during the written comment period that I think will be helpful in terms of identifying what are the challenges and what might some of those paths be that would provide those opportunities and those options.

Supervisor Serna, you made the comment about the co-benefits, strategies. And the way I think about this is there is some options that lead to what I'm calling a triple play, get GHG reductions, black carbon reductions, local community benefits. And there are clearly some strategies that are called out or discussed. I think have some stronger recognition of those principles in terms of where can we get those greatest benefits. Where can you get that triple play. Where are those strategies. And are there opportunities to further incent those outcomes that avail themselves is a really important point and one that we intended to capture I think we can capture more strongly as we move forward on this thing.

I did want to comment on the economic analysis going forward because in the discussion with the economic advisors as we actually met with them in the front end of

the document, before the document was developed, and really periodically throughout, it was a really interesting discussion because it was how do you -- what are the tools to do a more refined analysis? And really the conversation was about really a few dimensions. One was the macro economic analysis and the other was the sector-based analysis. And we talked about the interaction points that have been made here basically just from an organizational construct.

Dr. Cliff talked about how we organized by sectors. But we all recognize as Dr. Sperling and others have pointed out, there is interaction amongst those sectors. And it really comes down to how do you do the analysis to recognize as you're developing an individual recommendation the interaction of that strategy with other sectors. The transportation electricity was an example that was given, the cost, the co-benefits. The short answer I got from the economist was that's hard. That's pretty challenging. But the thinking going forward was one to develop additional tools. One was to continue to have economic advisors going forward as we're developing individual strategy, recognizing individual strategy cannot be a stand-alone strategy without thinking about the interaction element. But it will be challenging. I think it's an opportunity as well.

On 535, I think there's been recognition on our staff's team standpoint as well as with the other agencies and the need to have the metrics defined, the benefits, the support and resources to do that. We've been having that discussion. We think the comment was on point. It's a very big deal. And the justification, the rational that's going to be needed to be made under 535 is going to be very important.

Laying out as best we can what those steps are and moving forward within this document as we continue to seek additional support to be able to do that is something that we're committed to do. But it is reflective of the discussions that are taking place and the need for greater clarity and the need for it as soon as possible.

CHAIRPERSON NICHOLS: Okay.

BOARD MEMBER GIOIA: I have a follow up question on that.

What's the timing of that discussion? And I realize there's two parts to this. There's how do you define ahead of an expenditure, what it means to benefit so you can make a determination who gets the money and where and how it's spent and then the metric afterwards to measure. So there's -- and clearly, the part on the front end is important initially because there will be decisions about how to spend the money and where, so that definition

of benefit up front is important. You're referring to both parts of this?

DEPUTY EXECUTIVE OFFICER COREY: Yeah. In fact, your articulation of the way we're thinking about it was clearer than mine. We are thinking about it for the reasons that you just pointed out really in a bifurcated approach, because you have really a bunch of process playing out now. But ultimately, the budget is 14-15 and it will take some time for auctions and revenue. But that time will creep up on us quickly. They're are thinking near term the point you make what can be done to inform those near-term investments from a 535 standpoint as they're made, as those decisions/projects ultimately move forward.

The other element in terms of as projects play themselves out, as they're tracked, what's tracked, how is it reported? How is it documented? Did they deliver on what the ultimate expectations in terms of benefits were with respect to those projects?

That's the second tier that I refer to where we clearly are recognizing the need for tracking, documentation support, and actually seeking support to do just that. So those two elements can work together.

BOARD MEMBER GIOIA: Just to be clear, to the extent that money is distributed locally, let's say to a

metropolitan planning organization or a local other entity in other government were they then -- whether it's an energy efficiency program or in the case of the Bay Area, ABAG and MTC which had built in a component of cap and trade revenue to implement the SCS with the similar provision of the 10 and 25, whether they then interpret benefit differently than a more statewide standard, which is why it's important to get out ahead of it to have this discussion statewide so that a particular entity or region puts doesn't put a different definition on benefit.

DEPUTY EXECUTIVE OFFICER COREY: Agreed.

CHAIRPERSON NICHOLS: Okay. To be continued obviously over a long period of time. But certainly there will be more opportunities for interaction individually, and I'm sure we'll all be hearing from folks before this finally makes it way back to us for final adoption. But this is definitely progress and I really appreciate it.

We're going to adjourn now, and we're going to have lunch. And over lunch, we will also get a briefly from our counsel on some pending litigation. I'm not expecting any action to be taken, but we're required to come back and report anyway. So we will after the lunch break, which should be around 2:00.

(Whereupon the Board recessed into closed session.)

CHAIRPERSON NICHOLS: We had a closed session over lunch and received a briefing from Chief Counsel on several cases that are pending, but no action was taken. So the session is closed. And I think we are ready to adjourn the meeting.

BOARD MEMBER DE LA TORRE: So moved.

BOARD MEMBER GIOIA: Second.

CHAIRPERSON NICHOLS: All in favor?

(Ayes)

CHAIRPERSON NICHOLS: Any opposed?

We're adjourned. Thank you everybody.

(Whereupon the Air Resources Board adjourned at 2:03 p.m.)

CERTIFICATE OF REPORTER

I, TIFFANY C. KRAFT, a Certified Shorthand Reporter of the State of California, and Registered Professional Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing hearing was reported in shorthand by me, Tiffany C. Kraft, a Certified Shorthand Reporter of the State of California, and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing nor in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 6th day of March, 2014.

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