

MEETING  
STATE OF CALIFORNIA  
AIR RESOURCES BOARD

CALEPA HEADQUARTERS  
BYRON SHER AUDITORIUM  
SECOND FLOOR  
1001 I STREET  
SACRAMENTO, CALIFORNIA

FRIDAY, MAY 19, 2016

9:13 A.M.

JAMES F. PETERS, CSR  
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A P P E A R A N C E S

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Supervisor John Gioia

Mr. John Eisenhut

Senator Dean Florez

Ms. Judy Mitchell

Mrs. Barbara Riordan

Supervisor Phil Serna

Dr. Alex Sherriffs

Professor Daniel Sperling

Ms. Diane Takvorian

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Dr. Alberto Ayala, Deputy Executive Officer

Ms. Edie Chang, Deputy Executive Officer

Mr. Kurt Karperos, Deputy Executive Officer

Ms. Ellen Peter, Chief Counsel

Ms. La Ronda Bowen, Ombudsman

Ms. Emily Wimberger, Chief Economist

A P P E A R A N C E S C O N T I N U E D

STAFF:

Ms. Heather Arias, Chief, Freight Transport Branch, TTD

Ms. Karen Buckley, Manager, Sustainable Freight Section,  
TTD

Ms. Heather Choi, Staff, Climate Action and Research  
Planning Section, RD

Mr. Bart Croes, P.E., Division Chief, Research  
Division(RD)

Mr. Glenn Gallagher, Climate, Atmospheric Science &  
Economic Studies Branch, RD

Mr. Jorn Herner, Ph.D., Branch Chief, Research Planning  
and Emission Mitigation, RD

Mr. Wes Ingram, Manager, Project Assessment Branch, ISD

Mr. Douglas Ito, Assistant Chief, TTD

Ms. Alexandra Kamel, Attorney Legal Office

Ms. Debbie Kerns, Senior Attorney, Legal Office

Ms. Lezlie Kimura, Staff, Sustainable Freight Section,  
Transportation and Toxics Division(TTD)

Ms. Cynthia Marvin, Division Chief, TTD

Mr. Ryan McCarthy, Science and Technology Policy Advisor,  
office of the Chair

Ms. Sarah Pittiglio, Ph.D., Climate Action and Research  
Planning Section, RD

Ms. Annalisa Schilla, Ph.D., Section Lead, Climate Action  
and Research Planning Section, RD

Mr. Craig Segall, Senior Attorney, Legal Office

A P P E A R A N C E S C O N T I N U E D

STAFF:

Ms. Marcelle Surovik, Staff Air Pollution Specialist,  
Energy Section, Industrial Strategies Division(ISD)

Mr. Floyd Vergara, Division Chief, ISD

ALSO PRESENT:

Mr. Alan Abbs, California Air Pollution Control Officers  
Association

Mr. Kevin Abernathy, Milk Producers Council

Ms. Adenike Adeyeye, Earth Justice

Mr. Till Angermann, Central Valley Dairy Representative  
Monitoring Program

Ms. Martha Arguello, Physicians for Social Responsibility

Mr. Will Barrett, American Lung Association

Mr. Nathan Bengtsson, Pacific, Gas & Electric

Ms. Christina Benz, Napa Climate NOW

Mr. Christopher Berry, Animal Legal Defense Fund

Mr. Michael Boccadoro, Dairy Cares

Dr. Rasto Brezny, Manufacturers of Emission Controls  
Association

Ms. Linda Brown, SCS Global Services

Mr. Frank Caponi, Sanitation Districts of LA

Mr. Tim Carmichael, So Cal Gas

Mr. J.P. Cativiela, Dairy Cares

Mr. Paul Cort, Earth Justice

Ms. Cynthia Cory, California Farm Bureau Federation

A P P E A R A N C E S C O N T I N U E D

ALSO PRESENT:

Mr. John Dans, California Resource Recovery Association

Mr. Ben De Alba, Assistant Secretary, Transportation Agency

Ms. Sarah Deslauriers, California Waste Water Climate Change Group

Mr. Neil Edgar, California Compost Coalition

Mr. Sean Edgar, Clean Fleets

Mr. Joel Ervice, California Cleaner Freight Coalition, Regional Asthma Management and Prevention

Ms. Laura Ferrante, Recology

Mr. Larry Greene, Sacramento Metropolitan Air Quality Management District

Dr. Jiming Hao, Tsinghua University

Mr. Chuck Helget, Republic Services

Mr. Russ Henly, Assistant Secretary, Resources Agency

Ms. Bonnie Holmes-Gen, American Lung Association

Mr. Michael Jacob, Pacific Merchant Shipping Association

Ms. Shrayas Jatkar, Coalition for Clean Air

Mr. John Kato, Deputy Director, California Energy Commission

Ms. Debra Kaufman, Stop Waste

Mr. Ryan Kenny, Clean Energy

Mr. Nick Lappis, Californians Against Waste

Mr. Howard Levenson, Deputy Director, CalRecycle

Ms. Julia Levin, Bioenergy Association of California

A P P E A R A N C E S C O N T I N U E D

ALSO PRESENT:

Mr. Gary Liss, Zero Waste U.S.A.

Mr. Humberto Lugo, Comite Civico Del Valle

Ms. Sandra Lupien, Food & Water Watch

Mr. Jack Macy, City of San Francisco, Department of the Environment

Mr. Bill Magavern, Coalition for Clean Air

Mr. Jesse Marquez, Coalition for a Safe Environment

Mr. Kevin Messuer, Association of Home Appliance Manufacturers

Mr. Brent Newell, Center on Race, Poverty and the Environment

Mr. Dan Noble, Association of Compost Producers

Mr. Graham Noyes, Keyes, Fox & Wiedman, Sierra Energy

Ms. Rachael O'Brien, Agricultural Council

Mr. Jimmy O'Dea, Union of Concerned Scientists

Mr. Peter Okurowski, Association of American Railroads

Ms. Mary Pitto, Rural Counties(RCR)

Dr. Kimberly Prather, Scripps Institution of Oceanography, Univeristy of San Diego

Dr. Michael Prather, UC Irvine

Mr. Jason Rhine, League of Cities

Ms. Katerina Robinson, EEC, representing John Wick, cofounder of the Marin Carbon Project

Ms. Karen Ross, Secretary, California Department of Food and Agriculture

A P P E A R A N C E S C O N T I N U E D

ALSO PRESENT:

Mr. Robert Sawyer

Mr. Tim Schott, California Association of Port Authorities

Mr. Kurt Schuparra, Cal-bio Dairy Cluster

Mr. Chris Shimoda, California Trucking Association

Mr. Mikhael Skvarla, California Council for Environmental  
and Economic Balance

Mr. Paul Sousa, Western United Dairymen

Dr. Donald Stedman

Ms. Stacey Sullivan, Sustainable Conservation

Ms. Taylor Thomas, East Yard Communities for Environmental  
Justice

Ms. Diana Vazquez, Sierra Club of California

Ms. Jeanie Ward-Waller, California Bicycle Coalition

Mr. Chuck White

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1 P R O C E E D I N G S

2 CHAIR NICHOLS: Good morning, ladies and  
3 gentleman, and welcome to the May 19th, 2016 public  
4 meeting of the Air Resources Board.

5 Before we begin our agenda, would you please rise  
6 and join me in the Pledge of Allegiance to the flag.

7 (Thereupon the Pledge of Allegiance was  
8 recited in unison.)

9 CHAIR NICHOLS: Thank you. Madam Clerk, would  
10 you please call the roll?

11 BOARD CLERK JENSEN: Dr. Balmes?

12 BOARD MEMBER BALMES: Here.

13 BOARD CLERK JENSEN: Mr. De La Torre?  
14 Mr. Eisenhut?

15 BOARD MEMBER EISENHUT: Here.

16 BOARD CLERK JENSEN: Senator Florez?

17 BOARD MEMBER FLOREZ: Here.

18 BOARD CLERK JENSEN: Supervisor Gioia?

19 BOARD MEMBER GIOIA: Here.

20 BOARD CLERK JENSEN: Ms. Mitchell?

21 BOARD MEMBER MITCHELL: Here.

22 BOARD CLERK JENSEN: Mrs. Riordan?

23 BOARD MEMBER RIORDAN: Here.

24 BOARD CLERK JENSEN: Supervisor Roberts?

25 Supervisor Serna?

1 Dr. Sherriffs?

2 BOARD MEMBER SHERRIFFS: Yes.

3 BOARD CLERK JENSEN: Professor Sperling?

4 BOARD MEMBER SPERLING: Here.

5 BOARD CLERK JENSEN: Ms. Takvorian?

6 BOARD MEMBER TAKVORIAN: Here.

7 BOARD CLERK JENSEN: Vice Chair Berg?

8 VICE CHAIR BERG: Here.

9 BOARD CLERK JENSEN: Chair Nichols?

10 CHAIR NICHOLS: Here.

11 BOARD CLERK JENSEN: Madam Chair, we have a  
12 quorum.

13 CHAIR NICHOLS: Great. Thank you. Just a couple  
14 of announcements before we get started this morning. We  
15 have a slight change in today's agenda order. Following  
16 Agenda Item 16-5-3, the planned air pollution research for  
17 fiscal year 2016-2017, we will hear agenda item 16-5-5, an  
18 update on the Sustainable Freight Action Plan. And then  
19 the last item of the day will be 16-4, the proposed  
20 Short-Lived Climate Pollutant Reduction Strategy.

21 Anyone wishing to testify on any of these items  
22 should fill out a request-to-speak card available in the  
23 lobby outside the board room and turn it into the board  
24 assistant or the Clerk of the Board, prior to the  
25 commencement of that item.

1           Also, to remind speakers, we do impose a  
2 three-minute time limit on oral testimony. We appreciate  
3 it if you'd just state your name when you come up to the  
4 podium and then put the testimony in your own words. It's  
5 much easier for the Board to follow it if you go straight  
6 to your main points. You don't need to read your written  
7 submission, because it will be entered into the record  
8 automatically.

9           For safety reasons, please note the emergency  
10 exits to the rear of the room. In the event of a fire  
11 alarm, we're required to evacuate this room immediately  
12 and go down the stairs and out of the building until we  
13 hear the all-clear signal, and then we can come back into  
14 the room and pick up where we left off.

15           I think that's it for opening announcements. So  
16 let's just quickly go to the consent item. We have one  
17 consent item on the agenda, which is the public meeting to  
18 consider revisions to the PM10 SIP, State Implementation  
19 Plan, for the Owens Valley.

20           Did we receive any requests to have a hearing on  
21 this?

22           BOARD CLERK JENSEN: No.

23           BOARD MEMBER RIORDAN: Madam Chair, I would move  
24 approval then of the staff recommendation for this item.

25           VICE CHAIR BERG: Second.

1 CHAIR NICHOLS: We have a motion and a second.

2 All in favor, please say aye?

3 (Unanimous aye vote.)

4 (Mr. De La Torre and Supervisor Serna not  
5 present.)

6 CHAIR NICHOLS: Any opposed?

7 Abstentions?

8 Okay. Great.

9 (Thereupon an overhead presentation  
10 was presented as follows.)

11 CHAIR NICHOLS: Then we move to our first item,  
12 which is the Haagen-Smit awards. This is a great  
13 privilege to present the annual Clean Air Awards we  
14 recognize leaders in air pollution and climate change  
15 research, technology, and policy. Before we present these  
16 awards, I want to express my sincerest condolences to the  
17 family and loved ones of one of this year's award winners  
18 Donald Stedman, who passed away last month after a hard  
19 fought battle with cancer.

20 Donald's strength and courage were inspiring in  
21 his work and his outlook on life. When he was selected as  
22 one of this year's winners, he had hoped he would be able  
23 to make it to Sacramento to accept his award. And I'm  
24 very pleased that members of his family are able to be  
25 here today to accept the award on his behalf.

1           The Haagen-Smit Clean Air Awards are made in  
2 honor of the late professor Arie J. Haagen-Smith and his  
3 important contributions to air pollution science, as well  
4 as the significance of his career as the Air Resources  
5 Board's first Chairman.

6           Dr. Haagen-Smit really epitomized the  
7 relationship between science and policy in our work. And  
8 so it's fitting that we have the award that is our only  
9 award that is named after him. Today, we're going to  
10 highlight the history of the award program and the  
11 accomplishments of the 2015 award recipients.

12           Dr. Haagen-Smit was a native of the Netherlands,  
13 a biochemistry professor at Caltech in Pasadena for 16  
14 years. That's a lovely picture of him, and studied  
15 natural products like rubber and pineapples before he  
16 began his research into air pollution in 1948, when he was  
17 asked by the County of Los Angeles to investigate the  
18 chemical nature of what we now call smog.

19           It was his research that found most of  
20 California's smog resulted from photochemistry, when  
21 exhaust from motor vehicles and industry facilities react  
22 with sunlight to create ozone. This breakthrough provided  
23 the scientific foundation for the development of  
24 California's and the nation's air pollution control  
25 programs. Leaving his plant studies behind, he continued

1 working in the field of air pollution research and took  
2 the smog problem in Los Angeles head on.

3 He became the ARB's first Chairman in 1968. In  
4 1973, in recognition of his contributions, he received the  
5 National Medal of Science, this country's highest  
6 scientific honor. Dr. Haagen-Smit passed away 38 years  
7 ago, but his legacy lives on.

8 I have to also point out that he was still very  
9 much alive and well when Jerry Brown first came on to the  
10 Air Resources Board and was able to attend the ceremony  
11 where we named our laboratory in El Monte after him. At  
12 that point, he was long retired, but his license plate,  
13 which I envied terribly, said ARB 1 on it.

14 (Laughter.)

15 CHAIR NICHOLS: And I think they retired that  
16 license plate when he passed on.

17 --o0o--

18 CHAIR NICHOLS: Anyway, since 2001 the Air  
19 Resources Board has sponsored the Haagen-Smit Clean Air  
20 Awards. Over the last 14 years, 41 acclaimed people have  
21 received the award. And in light of the global connection  
22 between air quality and climate change, the scope of the  
23 program has also expanded to include an international  
24 focus and a focus on climate change, science, and  
25 mitigation as well.



1           So, Mr. Corey, would you please get this program  
2 started?

3           EXECUTIVE OFFICER COREY: Yes, I will. Thanks,  
4 Chair Nichols. So each of the winners will be introduced  
5 by a Board member. And after their introductions, the  
6 winners will come forward to the podium to receive their  
7 award and take an opportunity to say a few words. We'll  
8 take photos at the end of the presentation this morning.

9           So on with the winners. The first winner today  
10 is Dr. Jiming Hao for his work in the area of  
11 international air pollution control. He'll be introduced  
12 by Chair Nichols.

13          CHAIR NICHOLS: Thank you. And since I didn't do  
14 a run-through of this, shall I speak from here and then go  
15 down and present the award at podium? Is that how  
16 we're --

17          EXECUTIVE OFFICER COREY: You can stay up there,  
18 Bart will hand the award, and then we'll do pictures at  
19 the end with all of them.

20          CHAIR NICHOLS: Great. Thank you. Thank you.  
21 Okay.

22   --o0o--

23          CHAIR NICHOLS: Well, in that case I will  
24 introduce Professor Jiming Hao, who I actually had the  
25 opportunity to meet last night at the reception that we

1 had for the winners and staff. He is being recognized as  
2 a scientist an a national leader in air pollution control  
3 in China with over 40 years of notable work in energy and  
4 the environment.

5 Dr. Hao currently serves as professor at the  
6 School of Environment and Dean of the Research Institute  
7 of Environmental Science and Engineering at Tsinghua  
8 University in Beijing, China. As one of the earliest and  
9 most prestigious institutions dedicated to environmental  
10 higher education and research, Tsinghua University has  
11 provided technical support for China in solving  
12 environmental problems and implementing sustainable  
13 development.

14 --o0o--

15 CHAIR NICHOLS: Throughout his career, Dr. Hao's  
16 leadership in the development of control strategies to  
17 mitigate the severe air pollution in China has improved  
18 the lives and health of many Chinese citizens. His  
19 research has substantially improved our understanding of  
20 atmospheric pollution in China, which presents significant  
21 public health challenges. For instance, his research  
22 breakthrough in acid rain formation and control led to the  
23 implementation of the Acid Rain Control Zone and SO2  
24 Emissions Control Zone some China in 1998, which is marked  
25 as a milestone for air pollution control in China. Since

1 then, SO2 emissions from coal burning have been  
2 effectively controlled, and SO2 concentrations in many  
3 cities and regions of China have begun to decline.

4 --o0o--

5 CHAIR NICHOLS: Dr. Hao led the development of  
6 the first national vehicle emissions inventory to evaluate  
7 the emission characteristics of China's vehicle fleet.  
8 Based on research in vehicle emissions, his team built a  
9 combined vehicle fuel road control strategy to help  
10 policymakers develop a series of new policies and  
11 standards for the improvement of air quality in  
12 megacities. He launched the National Clean Diesel Engine  
13 Campaign to include clean diesel engine projects for  
14 on-road diesel vehicles, construction machinery,  
15 agricultural machinery and vessels.

16 --o0o--

17 CHAIR NICHOLS: Recently, he's also developed  
18 policy recommendations to address climate change issues,  
19 such as the effects of short-lived climate pollutants,  
20 which we'll be talking more about later, in China and is  
21 helping to develop transportation management and economic  
22 policies for many Chinese cities to develop alternative  
23 transportation and efficient fleet management.

24 He served as a key scientist to develop the  
25 transportation management program and led the air quality

1 management team to improve air quality for major events,  
2 such as the 2008 Beijing Olympics and the 2010 Shanghai  
3 World Expo. And he has worked with a number of our staff  
4 in many of these efforts. So this is an ongoing  
5 collaboration

6 --o0o--

7 CHAIR NICHOLS: Dr. Hao has demonstrated a  
8 commitment to reducing the public health impacts  
9 associated with air pollution through his leadership in  
10 both academic research and environmental policy  
11 development. He's authored and co-authored more than 10  
12 books, more than 30 patents and software, more than 300  
13 peer-reviewed articles. He works as a member of the  
14 Chinese Council for International Cooperation on  
15 Environment and Development, and has received multiple  
16 awards for his outstanding scientific work from the  
17 Chinese national government, including the National  
18 Science and Technology Progress Award, which is, and  
19 the -- I'm sorry, and the National Natural Science Awards,  
20 which are two of China's most prestigious science awards.

21 He was elected to the Chinese Academy of  
22 Engineering in 2005. Dr. Jiming Hao truly is the Chinese  
23 equivalent of Professor Arie Haagen-Smit. And so it's  
24 with great pleasure that we present him with the 2015  
25 Haagen-Smit Clean Air Award.

1 (Applause.)

2 CHAIR NICHOLS: We invite you to say a few words,  
3 please.

4 DR. HAO: Thank you, Chairman. It's a great  
5 honor for me to receive the Haagen-Smit Clean Air Award.  
6 Thank you and the Committee in selecting me.

7 You know, China is serious polluted. Air quality  
8 is a big challenge. Thanks to my colleagues and students  
9 old work, people working together in China for cleaning up  
10 the pollution. Also, thanks for many -- in the world,  
11 many people work with me to collaboration, visit China,  
12 give help. Also, I and my students, my colleagues visit  
13 many universities, institutes in the world to learn. I  
14 think, like Dr. Haagen-Smit, the credit, the knowledge  
15 will help China to make the decision to understanding the  
16 pollution.

17 So I think the collaboration is very important to  
18 China's air pollution progress, especially for the  
19 transport and mobile emission control. We learned a lot  
20 from California experience. First, we do this work with  
21 say we help Beijing. Maybe in China, like California to  
22 the United States to leading this progress.

23 In the last 10 years, we recognized the secondary  
24 pollutants very important for China. So we also learn a  
25 lot of scientific knowledge from Los Angeles to understand

1 ozone and secondary PM2.5 pollution. So we -- I think a  
2 couple reasons it's very important to China.

3 Also, we only have one earth, one atmosphere. We  
4 work together. The benefit not only for China, also for  
5 whole world. So I believe in the future, we should  
6 further the cooperation. I will continue to work hard  
7 with my colleagues, my friends for the better air quality  
8 for the climate change. So I'm looking for your support  
9 to continue. Thank you very much.

10 CHAIR NICHOLS: Thank you.

11 (Applause.)

12 CHAIR NICHOLS: Thank you.

13 --o0o--

14 EXECUTIVE OFFICER COREY: And then after all four  
15 awards have been presented we'll ask the Board -- all the  
16 Board members to step down, so we can take the  
17 photographs.

18 The next recipient is Dr. Kimberly Prather. And  
19 it's for her work in the area of atmospheric chemistry  
20 research. She'll be introduced by Board Member Diane  
21 Takvorian.

22 BOARD MEMBER TAKVORIAN: Thank you very much. As  
23 one of the newer Board members, it's really my honor to  
24 make this introduction. Professor Kimberly Prather is  
25 being recognized for her contributions to atmospheric

1 chemistry research, specifically for transforming our  
2 understanding of aerosol chemistry and how aerosols impact  
3 the environment and climate.

4 She currently holds a joint appointment in the  
5 Department of Chemistry and Biochemistry at the Scripps  
6 Institution of Oceanography at UC San Diego. And I have  
7 to say that is one of our most treasured institutions in  
8 San Diego. So thank you very much for your service there.

9 She is also the founding director of the Center  
10 for Aerosol Impacts on Climate and the Environment, which  
11 is one of nine National Science Foundation Centers for  
12 Chemical Innovation.

13 --o0o--

14 BOARD MEMBER TAKVORIAN: Led by Dr. Prather, the  
15 \$20 million center brings together multi-disciplinary  
16 research groups from around the country with the goal of  
17 elucidating the chemical complexity and reactivity of  
18 atmospheric aerosols and their impact on climate. The  
19 Center is also building the next generation of tools for  
20 studying these complex chemical processes.

21 Dr. Prather has worked with multi-disciplinary  
22 teams collaborating with chemists, engineers, biologists,  
23 oceanographers, atmospheric scientists, meteorologists,  
24 and medical doctors to provide new insights into how  
25 aerosols form and subsequently affect climate, human

1 health, and the environment, depending on how -- their  
2 chemical make-up and physical properties.

3 --o0o--

4 BOARD MEMBER TAKVORIAN: Regional and global  
5 climate and air quality predictions depending -- depend on  
6 understanding the nature and distribution of aerosol  
7 particles. Dr. Prather was one of the pioneers of mass  
8 spectrometry methods to analyze in real time individual  
9 aerosol particle composition simultaneously along with its  
10 size.

11 Her idea to build an Aerosol Time-of-Flight Mass  
12 spectrometer -- so I can't even say it. Can you imagine  
13 how much great work she's doing to actually help create  
14 all of this.

15 (Laughter.)

16 BOARD MEMBER TAKVORIAN: So I apologize -- was  
17 initially met with considerable skepticism. But the  
18 instrument has since provided detailed temporal and  
19 spatial information on the origin, reactivity, and fate of  
20 atmospheric aerosols.

21 --o0o--

22 BOARD MEMBER TAKVORIAN: The mass spectrometer  
23 has been deployed all over the world on land, ocean, and  
24 in the sky, and has been instrumental in creating chemical  
25 signatures for various types of aerosols that allow --



1 that allows her to determine their origins.

2           Using this method, Dr. Prather has described the  
3 fate of particles from Los Angeles, identified biomass  
4 burning as the main source of the Asian Atmospheric Brown  
5 Cloud, and expanded our understanding of global aerosol  
6 transport showing how dust from Africa and microbes can  
7 impact precipitation over California.

8                               --o0o--

9           BOARD MEMBER TAKVORIAN: In 2010, Dr. Prather  
10 received the American Chemical Society award for creative  
11 advances in environmental sciences and technology. Her  
12 numerous additional awards and high citation record  
13 provide a clear indication that her contributions have had  
14 a major impact in the scientific community.

15           In addition, Dr. Prather strives to take her  
16 expertise outside of the laboratory and into the community  
17 and policy realm. For example, she gives public lectures,  
18 performs science outreach at local schools, including in  
19 our own Barrio Logan, which is one of the most impacted  
20 communities in San Diego, and has served as a member of  
21 the U.S. EPA PM2.5 Clean Air Scientific Advisory Board.

22           Her innovations in aerosol measurement  
23 techniques, contributions to aerosol science, and her  
24 commitment to training the next generation of researchers  
25 will have a scientific impact for years to come. ARB is

1 honored to bestow Dr. Kimberly Prather with a 2015  
2 Haagen-Smit Clean Air Award.

3           Congratulations.

4           (Applause.)

5           DR. KIMBERLY PRATHER: Wow. Thank you. This is  
6 a huge honor for me to receive this award, and also I  
7 thank you for that -- that very nice description of the  
8 research I'm doing.

9           I don't know if many people realize, but I am a  
10 California native, so I'm very proud of California in this  
11 regard for the work that the Board does for, you know, for  
12 air pollution, and really does set the stage globally for,  
13 you know, not just setting sort of standards and  
14 regulations, but also in driving the science.

15           And I'd like to think I'm a testament to that, in  
16 the sense that my very first big funding actually came  
17 from this Board, and I am -- so I have a very, very  
18 special place in my heart for CARB.

19           I worked with Bart Croes for a very, very long  
20 time, since the beginning actually. And the instrument  
21 that we developed, it was received with great skepticism.  
22 Luckily, I had great collaborators like Glen Cass, who I'd  
23 like to acknowledge, and Suzanne Herring were two people  
24 that sort of kept pushing me when we kept getting  
25 questioned of what this newfangled ATOFMS -- you're going

1 to say ATOFMS. That's easier than the other, what it  
2 could do, you know, what we're going to do.

3 And so I think, you know, in the end it's being  
4 used worldwide. It's actually there's hundreds of these  
5 instruments now being used around Asia to determine the  
6 sources. And that's what we set out to do, and now it's  
7 just so rewarding to see that it's being used everywhere  
8 to kind of understand the sources, but CARB can take  
9 credit for getting us started, in that regard.

10 And so for that, again, I'd like to thank you for  
11 that, as well as acknowledging me for this great award.  
12 It's kind of amazing to be, you know, mentioned in the  
13 same breath with Haagen-Smit. As I say, the California  
14 connection is extra special for me.

15 And I'd also like to, while I'm standing here,  
16 acknowledge those that have been my collaborators. I have  
17 great collaborators, again lots of them in California, but  
18 all over the world, as well as my students and post-docs,  
19 which I would not be standing here if it weren't for them.  
20 And so with that, again, thank you very, very much. It's  
21 a great honor to receive this award.

22 (Applause.)

23 EXECUTIVE OFFICER COREY: Next is Dr. Michael  
24 Prather for his work in the area of climate change  
25 research. And for those of you that are wondering, other

1 than being exceptionally distinguished scientists, there's  
2 no relation between Dr. Kimberly Prather and Dr. Michael  
3 Prather.

4 Dr. Prather will be introduced by Board Member  
5 John Balmes.

6 --o0o--

7 BOARD MEMBER BALMES: And before I introduce Dr.  
8 Michael Prather, I just want to say to Kim Prather that I  
9 was on the Research Screening Committee when we reviewed  
10 your proposal for your then very innovative device, time  
11 of flight device, and I'm glad that I was one of the  
12 people that voted for you to get that funding.

13 (Laughter.)

14 DR. KIMBERLY PRATHER: Me too.

15 BOARD MEMBER BALMES: So Dr. Michael Prather has  
16 lived in a number of desirable locations, because of his  
17 academic stature, such as Oxford, England; Cambridge,  
18 Massachusetts; New York City; and Washington D.C. And  
19 yet, he has chosen to make his academic and residential  
20 home in California, probably like me, because he likes the  
21 climate here.

22 (Laughter.)

23 BOARD MEMBER BALMES: And I think his  
24 appreciation of the importance of climate and geography to  
25 humans must fuel his sustained and impressive work on

1 climate change. Like climate science, human physiology  
2 and health is a very complex discipline. And I have found  
3 that knowledge of many subject areas allows researchers to  
4 see connections that might not occur to a more narrowly  
5 focused scientist.

6 We celebrate Dr. Prather's interdisciplinary  
7 approach, and his approach to team science. The same  
8 breadth of interest has informed his career as Dr. Prather  
9 has worked in a number of areas over the years. His  
10 education, through the award of his Ph.D., focused on  
11 math, physics, astronomy, and astrophysics. He works  
12 at -- he has worked at the Goddard Institute for Space  
13 Studies and NASA before coming to UC Irvine.

14 At Irvine, he resides in the Earth System Science  
15 Department, whose mission is to study the Earth as a  
16 coupled system to train the next generation of Earth  
17 scientists and to inform and educate policymakers and the  
18 public at large. His work is an exemplar of this mission.

19 --o0o--

20 BOARD MEMBER BALMES: I first became aware of Dr.  
21 Prather's work through the Intergovernmental Panel on  
22 Climate Change. And he's one of the key authors of the  
23 IPCC efforts. For the 2001 assessment, Dr. Prather led  
24 the chapter on atmospheric chemistry, which warned of  
25 large increases in surface ozone over populated continents

1 if the future emissions of pollutants increased as  
2 projected.

3           The work of the IPCC was awarded the Nobel Peace  
4 Price in 2007. And I just have to say that our own Dan  
5 Sperling is also a co-awardee of the Nobel Peace Prize,  
6 along with Dr. Prather in 2007.

7           For the latest IPCC assessment in 2013, the  
8 government review specifically requested scientific  
9 results on air quality be included in the summary for  
10 policymakers. And Dr. Prather, as lead author on the  
11 assessment, was invited to present those results.

12                           --o0o--

13           BOARD MEMBER BALMES: His use of numerical  
14 techniques to quantify the time scales of pollution and  
15 evaluate its impact as a fundamental -- is a fundamental  
16 contribution to the field of atmospheric chemistry, and  
17 provides a basis for policy and action. His unique  
18 contribution to environmental science has been through  
19 this filter of modeling atmospheric pollution in a way  
20 that not only raises awareness, but provides the tools to  
21 assess solutions.

22                           --o0o--

23           BOARD MEMBER BALMES: California's historic role  
24 in regulating greenhouse gases was supported by Dr.  
25 Prather's original research on the lifetimes of greenhouse

1 gases. He also worked directly with ARB staff on  
2 developing a comprehensive strategy for weighting the  
3 emissions of different greenhouse gases.

4 Later in today's meeting, we Board members will  
5 consider the short-lived climate pollutant reduction  
6 strategy. Dr. Prather's work is the foundation for  
7 assessing the impact of climate short-lived pollutants.

8 And so I am proud, on behalf of the Board, to  
9 make this award in recognition of Dr. Michael Prather's  
10 sustained and innovative contributions to climate change  
11 research.

12 (Applause.)

13 DR. MICHAEL PRATHER: Thank you, Dr. Balmes.  
14 Chair Nichols, members of the Board, thank you very much.  
15 This award is sort of a delight and an honor. It's one  
16 of the few awards that sort of recognizes science and  
17 service to society. It's not just an award for the  
18 science, but it's for doing it. I began as a contributor  
19 to the international assessments of ozone, and then  
20 climate over 30 years ago.

21 And what I found was as I -- we wrote these  
22 chapters up and got together, it would start redirecting  
23 the science into the questions that nobody could answer.  
24 And questions were posed by people like you on the ARB,  
25 and whatever, that had honest questions you needed answers

1 for and people say we can't do that yet, and start making  
2 you think, well, maybe you can do it one way or another.

3 So it basically started redirecting my science in  
4 various ways in between the assessments to try to deliver  
5 it. And so to be given the Haagen-Smit Clean Air Award is  
6 wonderful. Some of my best heroes were already on that  
7 list. It's wonderful.

8 Okay. Unlike my cousin Kim --

9 (Laughter.)

10 DR. MICHAEL PRATHER: -- I didn't get airplanes  
11 to sit next to.

12 (Laughter.)

13 DR. MICHAEL PRATHER: I'm sorry about that one,  
14 but you got better pictures for that one. But I think  
15 this is a wonderful honor. I truly appreciate it, and I  
16 hope we can continue to do science and service to society,  
17 which is what need here. Thanks. Bye

18 (Applause.)

19 EXECUTIVE OFFICER COREY: And finally, Dr. Donald  
20 Stedman for his work in the area of emission control  
21 technologies. We're all deeply sorry about Don's recent  
22 passing that the Chair mentioned. His wife Hazel,  
23 accompanied by their son, Kenneth is here to accept  
24 September award in his honor. And Board Member Dan  
25 Sperling will share Don's achievements with us.



1                   --o0o--

2           BOARD MEMBER SPERLING: Thank you.

3           It is my honor to do. Professor Donald Stedman  
4 is being recognized for his pioneering work in real-world  
5 measurements of air pollutants. His research and his  
6 advocacy have truly been influential in transforming air  
7 quality policy, as I'll mention in a moment, in ways that  
8 have become even more salient this past year.

9           Professor Stedman was the John Evans professor in  
10 the Department of Chemistry and Biochemistry at the  
11 University of Denver. We are -- as mentioning, we are  
12 honoring him posthumously.

13           His best known achievement is the invention of  
14 on-road remote sensing instruments, which measure vehicle  
15 emissions as the vehicles drive by.

16                   --o0o--

17           BOARD MEMBER SPERLING: Over the last several  
18 decades, Dr. Stedman and his colleagues measured emissions  
19 from more than three million cars in more than 20  
20 countries. These data measurements have helped inform  
21 emission inventories for cities and regions. It was this  
22 work by Dr. Stedman that led to the finding that a few  
23 vehicles, the gross polluters, are responsible for most of  
24 the on-road emissions. And as we learned actually last  
25 night in a presentation by Gary Bishop, his colleague,

1 that that's even true today even more so than in the past.

2 In any case, this work has provided the basis for  
3 what are, what we call, accelerated vehicle scrappage  
4 programs, more commonly known as Cash for Clunker programs  
5 in California and elsewhere.

6 Remote sensing technology is now widely used in  
7 his home State of Colorado, in California, and in many  
8 other locations, and now in Europe. It's been used to  
9 used to identify fraudulent smog testing shops, and it was  
10 the technology that was used in the past year to determine  
11 that the VW cars were emitting unusually large amounts of  
12 pollution, far more than they should be.

13 Indeed, in a publication prior to VW's admission  
14 of wrongdoing, he actually identified VW and Audi diesel  
15 vehicles as gross emitters of NOx, nitrogen oxide  
16 emissions. So we can say that Dr. Stedman was a  
17 disruptive force in a good way.

18 --o0o--

19 BOARD MEMBER SPERLING: He showed that real-world  
20 emissions can be, and often are, much higher than the  
21 emissions that are tested in the laboratory. And so that  
22 set in motion a whole process where we started determining  
23 why is this, and what do we do about it? And that process  
24 continues to this day.

25 Never short on new ideas, Dr. Stedman recently

1 adapted the concept of remote vehicle exhaust emissions  
2 measurement to measuring heavy-duty truck emissions. And  
3 last night, we -- yesterday afternoon, we saw a sketch of  
4 where he sketched out the whole concept on a cocktail  
5 napkin, and then, you know, the classic, right, from the  
6 movies -- I didn't believe it when I first read about it,  
7 but they showed the actual drawing last night --  
8 yesterday.

9 --o0o--

10 BOARD MEMBER SPERLING: Then, just to top it off,  
11 he built a small-scale model with paper clips and a toy  
12 truck he borrowed from his neighbor's son.

13 (Laughter.)

14 BOARD MEMBER SPERLING: I like those inventive  
15 engineers. So what he did is trucks would drive through a  
16 long and narrow tent where the exhaust would be collected  
17 and analyzed. And the project has successfully collected  
18 thousands of first-of-its-kind particle measurements from  
19 in-use heavy-duty trucks in California, and has been  
20 important in advancing the understanding of durability and  
21 degradation of diesel particulate filters for heavy-duty  
22 trucks.

23 --o0o--

24 BOARD MEMBER SPERLING: While best known for his  
25 remote sensing technologies I have been talking about, Dr.

1 Stedman was active in other fields as well.

2 In the 1970s, he published a measurement system  
3 for the photochemical rate of nitrogen dioxide  
4 dissociation, which was a fundamental parameter in  
5 photochemical smog formation. And until that time, it had  
6 been only modeled not measured.

7 He also developed the concept for measuring  
8 stratospheric chlorine monoxide free radicals. And  
9 subsequent measurements by this technique provided the  
10 smoking gun for the Antarctic ozone hole, which led to the  
11 Montreal protocol, and worldwide CFC controls.

12 Don also served as a member of the National  
13 Academy of Sciences National Research Council Committee,  
14 which as early as 1986 recommended the ban on smoking in  
15 commercial airplanes, because of the risk to flight  
16 attendants. And we also heard the story yesterday about  
17 how he brought this device on a plane and measured it, you  
18 know, and I kept thinking in my mind, they would never let  
19 that happen these days --

20 (Laughter.)

21 BOARD MEMBER SPERLING: -- especially if you look  
22 at pictures of Don, right?

23 Dr. Stedman is -- his life is one -- was a life  
24 of commitment, of perseverance of leadership, of  
25 innovation. And the impact of his work will be a

1 long-standing legacy. Many staff members at ARB have  
2 worked closely with Dr. Stedman and he will be missed.

3 ARB is honored to bestow the late Dr. Donald  
4 Stedman with a 2015 Haagen-Smit Clean Air Award. I'm glad  
5 his wife Hazel and son Kenneth and colleagues, I know Gary  
6 Bishop at least, could be here today to accept the award.

7 (Applause.)

8 MRS. STEDMAN: Members of the board, ladies and  
9 gentlemen, thank you for inviting me here today along with  
10 my son, Professor Ken Stedman, and Don's colleague, Dr.  
11 Gary Bishop to accept this award on behalf of my late  
12 husband, Dr. Donald Hugh Stedman.

13 Don was very pleased and felt strongly honored to  
14 be selected for to receive this award. And towards the  
15 end of his life, he dedicated his remaining energies  
16 towards trying to be here today, but that was not to be.

17 Like Dr. Arie Haagen-Smit, 38 years ago, Donald  
18 succumbed to lung cancer, and he died just last month.  
19 Our family has received numerous tributes and remembrances  
20 of Donald from around the world and throughout his  
21 lifetime and career. But there are many millions of  
22 people whose lives Donald has impacted, who have never  
23 even heard his name. And that is, as Dr. Sperling  
24 referred, to his service on the National Academy Committee  
25 on airline cabin air quality.

1           And my husband was instrumental in the final  
2 vote, which recommended forcibly -- forcefully not  
3 forcibly -- forcefully banning smoking on airplanes. This  
4 sparked the movement worldwide to ban smoking in public  
5 places, and probably saved a good many lives, and  
6 certainly impacted the quality of life for a lot more  
7 people. This, Donald believed, was his finest  
8 contribution to humanity.

9           When I look at this impressive award, I'm  
10 reminded about how far we have come from the pea soup  
11 smog-filled days in London of Donald's boyhood to the  
12 crystal clear air we're breathing today.

13           Thank you.

14           (Applause.)

15           EXECUTIVE OFFICER COREY: Congratulations to  
16 again to all the award recipients. And now, we're going  
17 to ask the Board members -- all the Board members to step  
18 down and we have the photo op with the award recipients.

19           CHAIR NICHOLS: Thank you.

20           (Thereupon photographs were taken.)

21           CHAIR NICHOLS: Thank you so much, ladies and  
22 gentlemen. As you can imagine, this is one of our  
23 favorite meetings of the year when we get to present the  
24 awards, because really for us it's an inspiration to be  
25 able to hear about and to meet in person people who have

1 made such a great contribution to not only our work, but  
2 to the health and well-being of the people of this planet.

3 So I'd once again want to thank all of the award  
4 recipients and ask for one more round of applause.

5 (Applause.)

6 CHAIR NICHOLS: All right. But now back to the  
7 agenda here. And this also follows nicely on the awards  
8 presentation. We're going to consider ARB's proposed  
9 research plan for fiscal year 2016-17. The annual  
10 research plan supports the Board's air quality planning  
11 efforts, helps us with our regulatory decision making,  
12 advances our efforts to meet the Global Warming Solutions  
13 Act, as well as State implementation plans and other  
14 commitments, and facilitates important collaborations with  
15 other research funding organizations.

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

17 EXECUTIVE OFFICER COREY: Yes. Thank you, Chair  
18 Nichols. There are four projects in this year's research  
19 plan being recommended for funding. The list of proposed  
20 projects was developed from a public solicitation of  
21 research ideas supplemented by extensive discussions with  
22 ARB program staff, staff from other State and federal  
23 agencies, as well as experts in these fields of study.

24 The proposed research projects support ARB's  
25 regulatory priorities related to health, environmental

1 justice, air pollution and climate change. And if  
2 approved by the Board, the projects described in the  
3 research plan will be developed into full proposals, and  
4 then brought back to the Board for your final approval  
5 over the next several months.

6 Now, I'll introduce Sarah Pittiglio of the  
7 Research Division who will describe this year's proposed  
8 research studies.

9 Sarah.

10 (Thereupon an overhead presentation was  
11 presented as follows.)

12 DR. PITTIGLIO: Thank you, Mr. Corey. Good  
13 morning, chairman Nichols and members of the Board.

14 --o0o--

15 DR. PITTIGLIO: Today, we'll be asking the Board  
16 to approve the proposed 16-17 research plan. This fiscal  
17 year's budget consists of \$4.7 million dollars, three  
18 million is committed to fund projects that were included  
19 in the Board-approved fiscal year 15-16 research plan.  
20 1.7 million is requested to fund five new research  
21 projects that will support the Board's decision making for  
22 key policies and programs.

23 Continued coordination with State and federal  
24 agencies, and other research institutions enables ARB to  
25 participate in projects and studies outside the reach of



1 ARB's budget alone. These five new projects leverage over  
2 \$13 million of committed funds from a number of  
3 collaborators.

4 --o0o--

5 DR. PITTIGLIO: The new research presented in  
6 this year's plan satisfies the requirements of the Health  
7 and Safety Code, which calls upon our ARB to coordinate  
8 and investigate air pollution problems, solutions, and  
9 knowledge gaps. The new projects will fill knowledge gaps  
10 in the areas of mobile source emissions reductions  
11 strategies, provide data to ensure that all communities  
12 benefit from California's policies, monitor progress  
13 towards AB 32 implementation, and improve our efforts to  
14 inventory short-lived climate pollutants. If the plan is  
15 approved today, staff will work with the researchers over  
16 the next few months to develop projects into full  
17 proposals. We will then take proposals to the Board's  
18 Research Screening Committee for review before returning  
19 to the Board to request approval and funding.

20 --o0o--

21 DR. PITTIGLIO: ARB's research program was  
22 established by the legislature in 1971 and conducts  
23 research through external contracts, as well as through  
24 in-house research initiatives. The Board's legislatively  
25 mandated Research Screening Committee consists of

1 scientists, engineers, and others that are experienced in  
2 air pollution problems.

3 The Committee meets quarterly to review proposed  
4 and completed research projects. The program has a strong  
5 relationship with the University of California and  
6 California State University systems, and coordinates  
7 through multiple mechanisms, including topical research  
8 work groups with other State agencies and stakeholders.

9 ARB staff have placed a growing emphasis on  
10 sharing the research -- the results of our research,  
11 including disseminating new research results to other  
12 researchers and to the public through stakeholder  
13 meetings, seminars, press releases, final reports, and  
14 updates at Board meetings.

15 --o0o--

16 DR. PITTIGLIO: Over the past decade, the  
17 program's research portfolio has been designed to meet  
18 ARB's evolving program needs in response to a broad range  
19 of legislative mandates. ARB's research is also  
20 forward-thinking, and in many cases, has provided  
21 preliminary research to inform the development of new  
22 legislation.

23 --o0o--

24 DR. PITTIGLIO: This diagram illustrates the  
25 program's we've been supporting in the current decade.

1 ARB's research initiatives on health and exposure,  
2 economics, and environmental justice provide program  
3 support that informs the development and successful  
4 implementation of all ARB programs.

5 Additional research initiatives are designed to  
6 address the needs of specific programs. Research results  
7 will continue to play an important role in meeting the  
8 challenges of new federal air quality standards and  
9 long-term climate goals.

10 --o0o--

11 DR. PITTIGLIO: The programs that are highlighted  
12 in red are ones that are being supported with new research  
13 included in this year's research plan. I will now provide  
14 some background on these highlighted programs, and  
15 introduce the new projects in these areas.

16 --o0o--

17 DR. PITTIGLIO: A portion of ARB's mobile source  
18 research has focused on strategies and technologies to  
19 reduce the emissions of criteria pollutants and monitoring  
20 the effectiveness of these efforts to ensure that the  
21 expected benefits are achieved. Since the adoption of AB  
22 32, ARB's research has evolved to focus on the reduction  
23 of both criteria pollutant and greenhouse gas emissions.

24 For light-duty vehicles, research on criteria  
25 pollutant reductions is investigating the long-term trend

1 in real world emissions, which is providing an  
2 understanding of how well the emission controls continue  
3 to perform in vehicles subject to LEV I and II. In  
4 response to the adoption of the Advanced Clean Cars  
5 program, ARB's research expanded to include a portfolio of  
6 projects that addressed market forces, consumer  
7 acceptance, and driving and fueling behavior associated  
8 with new vehicle technologies. Results from these  
9 projects will inform the mid-term review of the Advanced  
10 Clean Cars program.

11 In the heavy-duty sector, research to reduce  
12 criteria pollutants has focused on the durability of  
13 emission control technologies, and tracking the results of  
14 regulatory efforts. New research will provide in-use  
15 measurements of NOx emissions from real-world duty cycles  
16 and vocational trucks. New research on long-term  
17 zero-emission heavy-duty pathways will build on recent  
18 research on alternative fuels and advanced technologies to  
19 map out scenarios to achieve long-term greenhouse gas and  
20 criteria pollutant reduction goals.

21 --o0o--

22 DR. PITTIGLIO: The first proposed research  
23 project addresses the need to improve our understanding of  
24 how the use of multiple engine and alternative fuel types  
25 impact in-house NOx emissions and fuel consumption in

1 various vocational uses. The 2010 heavy-duty engine  
2 emissions standards have reduced both NOx and PM emissions  
3 significantly.

4           However, heavy-duty vehicles are still a  
5 significant source of NOx emissions and there is a need  
6 for additional reductions to meet upcoming national  
7 ambient air quality standard requirements for ambient PM  
8 2.5 and ozone.

9           Results from this research will improve emission  
10 inventories used for air quality planning, explore the  
11 effectiveness of potential rules to further lower emission  
12 standards for heavy-duty vehicles from specific vocations,  
13 and develop a effective strategies for achieving the  
14 federal ambient air quality standards.

15           This project is leveraging a significant amount  
16 of funding through a collaboration with the South Coast  
17 Air Quality Management District, the California Energy  
18 Commission, and SoCalGas. The second proposed research  
19 project will develop.

20                               --o0o--

21           DR. PITTIGLIO: The second proposed research  
22 project will develop multiple long-term scenarios to  
23 transition to advanced vehicle technologies and  
24 alternative fuels in the heavy-duty sector. Past  
25 regulations and incentive funding has put California on

1 the path towards meeting our 2020 GHG and air quality  
2 targets.

3           However, additional research is needed to guide  
4 current policies, identify new policies, and inform the  
5 best use of incentive funding to meet stricter long-term  
6 goals. Therefore, this project will determine the costs,  
7 emissions, and impacts to disadvantaged communities for  
8 these scenarios.

9           An analysis of the benefits and barriers to each  
10 scenario will inform the State of the best policies and  
11 economic mechanisms to encourage pathways that allow  
12 California to achieve its long-term goals. The project  
13 will benefit from a concurrent grid modeling effort funded  
14 by the California Energy Commission. Outputs from this  
15 project will likewise inform the electricity grid modeling  
16 work through its analysis of the use of electricity and  
17 power-to-gas to help fuel the heavy-duty sector.

18   --o0o--

19           DR. PITTIGLIO: In order to ensure that all  
20 communities benefit from ARB's mobile source and other  
21 regulations, ARB has partnered with local and community  
22 organizations and has carried out research on a number of  
23 monitoring and assessment projects in support of  
24 environmental justice goals. One example of the research  
25 program's efforts to support ARB's environmental justice

1 initiatives is the development of the Environmental  
2 Justice Screening Method.

3 ARB's EJSM laid the foundation for  
4 CalEnviroScreen which is informing the selection of  
5 disadvantaged communities to receive investments from cap  
6 and trade proceeds.

7 CalEnviroScreen identifies the census tracts with  
8 the greatest cumulative exposure and social and health  
9 vulnerability. To estimate exposure, CalEnviroScreen  
10 includes the location of potential air pollution sources  
11 to estimate as census tracts' proximity to a given hazard.  
12 This information is lacking on the Mexico side of the  
13 U.S.-Mexico border, leading to the misrepresentation that  
14 there is very little pollution in border communities.

15 --o0o--

16 DR. PITTIGLIO: The objective of the third  
17 research project proposed is to create a geospatial  
18 database of stationary, area, and mobile sources on the  
19 Mexico side of the U.S.-Mexico border, as an input to  
20 CalEnviroScreen. The investigators will use Mexico's  
21 version of the Toxic Release Inventory and Google Earth to  
22 verify locations and geocode stationary and area sources.  
23 The results will be used to improve the CalEnviroScreen  
24 analysis at the U.S.-Mexico border, and will complement  
25 ongoing monitoring studies in San Diego and the Imperial

1 Valley.

2 --o0o--

3 DR. PITTIGLIO: As California implements AB 32,  
4 ARB has developed greenhouse gas monitoring capabilities  
5 to support our short- and long-term climate goals. These  
6 capabilities have been developed through in-house research  
7 projects, external contracts, and collaborations with  
8 multiple research partners.

9 Although carbon dioxide emissions constitute the  
10 largest share of California's greenhouse gas inventory,  
11 nitrous oxide, and a short-lived climate pollutants, such  
12 as methane, HFCs, and black carbon are also significant  
13 contributors. Measurements of these gases can help  
14 identify sources, evaluate the emissions from these  
15 sources, identify new emission reduction strategies, and  
16 track progress in reducing emissions.

17 Measurements are made from satellites, aircraft,  
18 and at they ground level from fixed and mobile sites.  
19 Work performed at the laboratory -- in the laboratory  
20 includes isotopes analyses and modeling to quantify  
21 emissions from data collected in the field.

22 Collectively, these tools have helped us gain a  
23 better understanding of greenhouse gas sources and  
24 emissions in California.

25 --o0o--



1 DR. PITTIGLIO: In a continued effort to track  
2 changes in greenhouse gas emissions as California follows  
3 mandates to reduce these emissions, this proposed research  
4 project will extend existing efforts to measure emissions  
5 of carbon dioxide in the Los Angeles Basin. Isotope  
6 analyses will allow the researchers to distinguish various  
7 types of fossil fuel combustion from natural carbon  
8 dioxide sources.

9 The collected data will be used to develop a  
10 long-term comprehensive understanding of carbon dioxide  
11 emissions and source contributions in the Los Angeles  
12 Basin, while tracking the progress made by AB 32.

13 This project will complement the megacities  
14 observing system for Los Angeles, funded by federal  
15 research partners, and coordinated with similar efforts in  
16 Paris and Rio de Janeiro, which analyzes multi-tiered  
17 measurements to understand greenhouse gas emissions and  
18 the impact of control policies as a model for other  
19 cities.

20 --o0o--

21 DR. PITTIGLIO: A recent satellite measurement  
22 study conducted by NASA and the University of Michigan  
23 indicated the presence of large regional methane hot spots  
24 in the U.S., including one in the San Joaquin Valley. In  
25 light of these findings, the legislature signed Assembly

1 Bill 1496, which requires ARB to undertake monitoring and  
2 measurements of high emission methane hot spots in  
3 California.

4 In response, ARB is planning to conduct a  
5 comprehensive study to survey statewide methane sources  
6 that will improve our understanding of regional methane  
7 hot spots, and allow the identification of large methane  
8 super emitters throughout California. The study will  
9 feature a comprehensive tiered monitoring approach which  
10 will include satellite, aerial, and ground-based  
11 measurements and will be able to provide critical details  
12 on the distribution of methane sources, as well as their  
13 emission characteristics over key regions in California.

14 The first measurements are Scheduled to begin in  
15 the coming fiscal year, and will be conducted in  
16 coordination with NASA, the California Energy Commission,  
17 and other State and local agencies. The study results  
18 will be especially useful for informing our emissions  
19 inventory and guide our current and future programs to  
20 help meet near- and long-term climate goals.

21 --o0o--

22 DR. PITTIGLIO: ARB's contracted and in-house  
23 research efforts are designed to support the successful  
24 implementation of ARB programs. Several recent Board  
25 items have provided updates on in-house research efforts

1 on near roadway exposure mitigation strategies, research  
2 to monitor Aliso Canyon's natural gas leak, and research  
3 on California's HFC inventory and mitigation strategies  
4 that would be a component of the presentation on  
5 California's short-lived climate pollutant strategy that  
6 you will hear later today.

7 Upcoming items include Board presentations on air  
8 quality trends in disadvantaged communities, and our low  
9 NOx heavy-duty engine demonstration, as well as research  
10 symposia on methane emissions and the mid-term review.

11 --o0o--

12 DR. PITTIGLIO: ARB has funded more than 460  
13 research contracts, which have resulted in a similar  
14 number of peer-reviewed publications. 80 percent are  
15 published in the top quartile of journals in terms of  
16 scientific impact. ARB research has also been cited in  
17 reviews of the National Ambient Air Quality Standards, and  
18 in dozen after ARB regulatory documents.

19 On average, these ARB funded publications are  
20 cited about 50 times each by other articles, which is, on  
21 average, two to three times higher than other funding  
22 organizations, such as the U.S. Environmental Protection  
23 Agency, and the Health Effects Institute.

24 In keeping with this tradition of excellence, the  
25 projects proposed in this plan will add to ARB's robust

1 research program, and continue to strengthen the  
2 scientific foundation of ARB's programs.

3 --o0o--

4 DR. PITTIGLIO: We recommend that you approve the  
5 2016-17 annual research plan. Thank you for your  
6 attention. I would be happy to answer any questions that  
7 you may have.

8 CHAIR NICHOLS: Thanks for the presentation. We  
9 don't have any witnesses who have signed up to speak on  
10 this item, but I thought the Board might have some  
11 questions or comments.

12 I just want to start out with one that I think  
13 may help frame this presentation a little bit, because  
14 \$4.7 million, although in the real world that's a  
15 significant amount of money, is a small fraction of the  
16 research that actually is done by or contracted by ARB.  
17 This is a discrete program, which is used in accordance  
18 with the process that Sarah described with the Research  
19 Screening Committee, and requests for proposals, and so  
20 forth to do what most people would think of as being  
21 basic -- pretty basic scientific research, as opposed to  
22 the more focused research that's driven by the need to  
23 have data to support our programs. This helps pave the  
24 way for a broader understanding of the work that we do.

25 And I think it's important to make that

1 distinction, because even though we leverage a lot of  
2 other work by other people with this budget, it is really  
3 a very tiny research budget for an organization with the  
4 kind of mission that we have.

5 John.

6 BOARD MEMBER GIOIA: And I just wanted to reflect  
7 on the comments yesterday at the lecture by some of the  
8 Haagen-Smit award winners about the importance of our  
9 funding of their research in the past, and the significant  
10 impact that it's had. So it's -- I think that really  
11 calls out and reflecting some of these early research  
12 decisions, which are very thoughtful, and how it's really  
13 changed the course of this whole field.

14 CHAIR NICHOLS: Barbara.

15 BOARD MEMBER RIORDAN: I think I'd like to  
16 comment and say to the staff you've done a very good job  
17 of leveraging our money. And I think, as I recall years  
18 ago, we didn't do it as well as we're doing it today. And  
19 I thank you for that, because we can do so much more if we  
20 have people who are willing to collaborate with us with  
21 money. You know, that's just a key important ability of  
22 the staff to do more with a small amount of money, and I  
23 salute them for that.

24 Thank you.

25 CHAIR NICHOLS: Thank you.

1 Dr. Sperling and then Ms. Mitchell.

2 BOARD MEMBER SPERLING: Yeah. And I also want  
3 to, you know, praise the staff and what we've done here in  
4 working with a very small amount of money, because in the  
5 past -- and there's a certain tension that exists, because  
6 in the past, it was widely recognized that there were huge  
7 gaps in the science of air pollution. And we've put a lot  
8 of resources into that over the years, and there's not as  
9 many of those gaps, but now we have, you know,  
10 these -- this new challenge of climate change and all the  
11 policies. And we're leading, in many ways, on that. And  
12 we've got to figure out good policy for climate change.

13 And so, you know, there's this continuing tension  
14 also between making sure that this research is supporting  
15 the mission of ARB, as well as filling the basic research  
16 gaps. And that's when you come to appreciate it really is  
17 a drop in the bucket for what really is needed. And it  
18 is -- we are, as Barbara said, as Board member Riordan  
19 said, it really is important to be leveraging it. And I  
20 know we're making a lot of effort to leverage it with  
21 other entities and other funding and other researchers.  
22 So it's a good story, but --

23 (Laughter.)

24 CHAIR NICHOLS: But, but.

25 Yes, Ms. Mitchell.

1 BOARD MEMBER MITCHELL: Thank you, Chairman.

2 I want to thank staff for selecting these  
3 projects, because we can all note that the projects that  
4 are here on our list actually target things that are going  
5 to come before us soon, and it will help us inform our  
6 decisions.

7 The second thing that I want to comment on, and  
8 it goes back to the Haagen-Smit awards and the history of  
9 that, is that we all try to base our policy decisions on  
10 sound science. And science, as you know, plays a really  
11 important role in how we clean the air and how we reduce  
12 our greenhouse gas emissions. So I thank all of our  
13 scientists out there who work on these projects with us,  
14 and help us make sound decisions that are based on sound  
15 science.

16 CHAIR NICHOLS: Thank you. I should look in the  
17 other direction.

18 Yes, first, Senator Florez and then Dr. Balmes.

19 BOARD MEMBER FLOREZ: Thank you. I just have a  
20 few questions on these items. Let me get my notes for a  
21 second. And thank you to staff. I have questions for  
22 staff.

23 So my first would be on the methane funding  
24 itself. CEC, NASA are joint funders, and obviously  
25 appreciate the leverage provided there. My question is

1 simply -- I guess what caught my eye was the partnerships  
2 with local air districts. And obviously, methane, Central  
3 Valley a big issue, ignored for a lot of years. How does  
4 the air district itself at that level participate with ARB  
5 in the participation of this science?

6 RESEARCH PLANNING, ADMINISTRATION & EMISSION

7 MITIGATION BRANCH CHIEF HERNER: Yeah. Thank you. We are  
8 leveraging this with money both from CEC and JPL, and it's  
9 turning out to be a good collaboration. We are reaching  
10 out to local air districts talking with them, informing  
11 them about what we're doing, so they know what's coming  
12 down the pike.

13 We are trying to work with them to possibly gain  
14 access to some of the sources that will be identified by  
15 NASA JPL. This project will also be presented at the  
16 CAPCOA meeting coming up next week. So it's really a  
17 question of making sure that they're informed about what  
18 we're doing, and then looking for ways that the  
19 information that's created with this project helps inform  
20 what they're trying to accomplish as well.

21 BOARD MEMBER FLOREZ: Okay. So are we coming up  
22 with the criteria or are we asking them to provide us  
23 inputs that we define, or is it the local district  
24 looking -- are they defining it? Who's defining the  
25 parameters in terms of what type of methane sources, et



1 cetera?

2 RESEARCH PLANNING, ADMINISTRATION & EMISSION  
3 MITIGATION BRANCH CHIEF HERNER: Well, what the project is  
4 going to do is NASA JPL is going to outfit an airplane  
5 that has imaging technology. And so they will be flying  
6 over these areas that have been identified as hot spots.  
7 And with about a one meter by one meter grid cell, they  
8 will be able to identify high-emitting methane sources.

9 So part of what we will get really is a list of  
10 methane emission spots, and then really the collaboration  
11 with districts is what do you do with that list, and how  
12 do you make it useful, and how do you move forward from  
13 there, and how do you interact with the stakeholders whose  
14 methane emission has been identified on the list.

15 BOARD MEMBER FLOREZ: That's fantastic.

16 The second question is on the Mexico piece of  
17 this. In terms of the actual inputs and research and data  
18 provided, how trustworthy --

19 (Thereupon a phone went off.)

20 (Laughter.)

21 BOARD MEMBER FLOREZ: I guess my time is up. I  
22 guess my time is up.

23 (Laughter.)

24 BOARD MEMBER BALMES: The winner is.

25 BOARD MEMBER FLOREZ: My question is simply

1 what's the reliability of that data, given the  
2 participation in working with Mexico? How reliable is  
3 that? You know, and I'll obviously defer to my colleague  
4 from the San Diego area, but just kind of wonder, you  
5 know, what is that research supposed to get us, and how  
6 reliable will the inputs be?

7 RESEARCH DIVISION CHIEF CROES: This is Bart  
8 Croes. That's a very good question. So part of the  
9 project, it includes collaboration with this pretty  
10 extensive monitoring that's going to be taking place in  
11 the area. So in addition to the fixed monitors are there  
12 now on the border, on both sides of the border, there's  
13 actually 55 new monitors being put in through the programs  
14 with the National Institutes of Health as well as OEHHA.

15 So we'll actually have real air quality data.  
16 And then, you know, part of what we'll be doing with this  
17 new project is identifying collaborators on both sides of  
18 the border, and trying to come up with, you know, real  
19 identification of where sources are using, you know,  
20 multiple techniques like the existing inventories as well  
21 as satellite verification.

22 You know, those type of details, I think, we'll  
23 need to work out. You know, we'll have a lot of potential  
24 collaborators in that area. So this project is something  
25 that we'll be developing over the next few months and

1 we'll be bringing to the Board in the summer.

2 CHAIR NICHOLS: Thank you.

3 Dr. Balmes.

4 BOARD MEMBER BALMES: Well, I also wanted to  
5 address the environmental justice program support. And I  
6 think it's great that we're going to be partnering and  
7 getting more air quality monitoring data at the border,  
8 and working on these multiple partnerships.

9 But I just want to underline that one of the  
10 things I like about our agency is that we promulgate  
11 evidence-based policies. And I just wanted to point out  
12 that environmental justice, while it's often thought of as  
13 an advocacy type of issue, it's also based on science and  
14 real data.

15 And the more we can get the CalEnviroScreen tool  
16 that's been developed, in part because of past CARB  
17 support, to be a better model, a more accurate model of  
18 public health impacts of air pollution the better off  
19 we'll be in terms of future policy. And so I'm totally  
20 supportive of this, but I just want to put it in the  
21 context of I think that the CalEnviroScreen model is  
22 current. It's not perfect. Hardly, any model ever is, so  
23 it needs to be continually improved.

24 So hopefully, this -- the data that we generate  
25 will go to improving it and making it more accurate, but I

1 don't think it's the whole story.

2 CHAIR NICHOLS: I think CalEPA and OEHHA are in  
3 agreement with that, and do plan on continuing to make  
4 improvements, but maybe you want to address that further.

5 RESEARCH DIVISION CHIEF CROES: This is Bart  
6 Croes again. We actually collaborate very closely with  
7 OEHHA, so a lot of the various layers of data that go into  
8 CalEnviroScreen are generated here at the Air Resources  
9 Board. And through kind of our own staff's efforts, as  
10 well as collaborations we have with some of the most  
11 prominent researchers in this area, you know, some of your  
12 former -- your current and former Colleagues, Dr. Balmes,  
13 you know, we are trying to do real verification of the  
14 data, and fill in some of these gaps that you've  
15 identified of uncertainty.

16 BOARD MEMBER BALMES: Yeah. Those comments were  
17 probably more directed to OEHHA than to you.

18 (Laughter.)

19 CHAIR NICHOLS: Hopefully, they're following us.

20 (Laughter.)

21 CHAIR NICHOLS: Ms. Mitchell. Oh, Sorry, Ms.  
22 Takvorian and then Ms. Mitchell, since you haven't spoken  
23 yet.

24 BOARD MEMBER TAKVORIAN: Thank you. So let me  
25 add my congratulations to staff. Thank you for your hard

1 work, and the agenda looks great. I would be supportive.  
2 It's well done, and we appreciate the inclusion and the  
3 focus, particularly to the San Diego-Tijuana border. I,  
4 as a director of a binational organization, with an office  
5 in Colonia Chilpancingo which is adjacent to one of the  
6 largest maquiladora parks in one of the heavy -- most  
7 heavy-duty truck traffic areas. We're very well aware of  
8 the health and environmental impacts and the need for this  
9 kind of research. So there's no question in my mind about  
10 the need for this research.

11           What my caution, and staff reflected this some,  
12 but I just want to say it out loud is that data is not  
13 comparable, and there's a lot of work to do to get there.  
14 I strongly recommend that the collaborators be  
15 institutions from Mexico. I think it's really important  
16 Colef, El Colegio de la Frontera Norte is really important  
17 in this. And I hope that we're looking at this from both  
18 a data collection perspective, as well as a mutual  
19 beneficial -- beneficiary kind of perspective. We need to  
20 grow that kind of research capacity within Mexico, and  
21 that's something that I think we can really do in this.

22           The other caution is that when you talk about  
23 comparing to Mexico's TRI, which is referred to as RETC,  
24 they have less than 25 percent of the pollutants in their  
25 registry than TRI. So the -- from the start, the

1 comparison is going to be really off, and so we need  
2 to -- I'm really glad that there's the monitors. I think  
3 the real-time data is going to be very, very important.

4           And then the last thing I'd say is it's just not  
5 nearly enough money, so I would echo your concerns. And  
6 thousands, probably millions, have been put in from the  
7 Commission on Environmental Cooperation. I used to serve  
8 on the advisory committee there. I would suggest you look  
9 at what they've done in putting the three-country TRI data  
10 together and see where we can start from there, and so  
11 that we're not replicating that work as well.

12           But again, thank you so much. And my other  
13 question, not related to the border, is asking for future  
14 if there's other EJ CalEnviroScreen data gaps that you're  
15 looking at that would need to be filled, and perhaps it's  
16 similar to Dr. Balmes' question.

17           CHAIR NICHOLS: Yes, I think we could ask the  
18 staff to actually report back to us on where they see room  
19 for improving that model and what we're doing to address  
20 it.

21           Ms. Mitchell.

22           BOARD MEMBER MITCHELL: I was just going to  
23 comment that the issue of pollution at the  
24 California-Mexico border was brought up by Supervisor Ron  
25 Roberts when we first looked at CalEnviroScreen. And he's

1 not here today, but I'm very delighted that Ms. Takvorian  
2 has taken up that issue, and is well-informed on it.

3           So I think it's a good focus that we have here in  
4 our research to take a look at that. We all recognize  
5 that it was problematic at the time we first observed  
6 that.

7           CHAIR NICHOLS: Thank you. Supervisor Serna,  
8 welcome.

9           BOARD MEMBER SERNA: Thank you, Chair. And I  
10 apologize for missing the first part of the presentation,  
11 but I did have a very detailed briefing earlier this week.  
12 I just want to dovetail a little more off of Dr. Balmes'  
13 comments, certainly not to beat a dead horse here, but I  
14 think, you know, I share a very similar sentiment and  
15 expression of support for the environmental justice  
16 program support.

17           In the spirit of conveying to CalEPA and OEHHA  
18 areas where there can be, I think, significant improvement  
19 in the CalEnviroScreen tool especially with regards to  
20 methane, I would encourage that in addition to all the  
21 other items that have already been mentioned, that we also  
22 consider how there might be an adjustment to the  
23 percentile ranking between communities within the State.  
24 That continues to be, for me, and I know many others, one  
25 of the most prominent weaknesses in the platform that you

1 have, you know, places in Northern California, rural --  
2 just by way of example, rural communities in Northern  
3 California, they get compared to very urbanized places in  
4 part of Los Angeles, for instance.

5           And I think looking at the potency of some of  
6 these greenhouse gas emissions, such as methane with kind  
7 of the exponential effect it has on climate change and  
8 forming, that that is a real opportunity to really  
9 consider how that model gets adjusted relative, not just  
10 to the other inputs that have been mentioned, namely air  
11 pollution, pesticides, water quality, and, of course, the  
12 socioeconomic factors, but also that third factor that  
13 feeds the model and that is the percentile ranking. So  
14 hopefully that gets included in whatever message we're  
15 going to convey.

16           Thanks.

17           CHAIR NICHOLS: Yeah. I think we've been  
18 beginning to see, in many areas, this question of the  
19 megacities versus the rest of the State popping up, in  
20 terms of allocation of resources, and attention, and  
21 differentials in their basic needs for attention on the  
22 pollution front. And I have been talking with staff and  
23 others about putting together a special focus group on,  
24 and including some external advisors on it as well,  
25 because I think it's something that's becoming more



1 apparent all the time, that we can't just sort of turn  
2 these programs into one-size-fits-all.

3 And any decision, such as you're highlighting  
4 there in terms of where the cut-off is has real policy  
5 implications. Its's not just a science question.

6 So thank you for raising that. We do need to  
7 actually take a vote on this plan. Again, we're not  
8 voting on the specific projects, because those will be  
9 brought back to us for approval before any money is spent.  
10 But the concepts, at least as described here, do need our  
11 input. So I think we could have a motion.

12 BOARD MEMBER SERNA: Move the item.

13 VICE CHAIR BERG: Second.

14 CHAIR NICHOLS: All in favor, please say aye.

15 (Unanimous aye vote.)

16 CHAIR NICHOLS: Any opposed?

17 Any abstentions on this one?

18 All right. Thank you very much to the Research  
19 Programs staff and for doing a great job of organizing and  
20 presenting the Haagen-Smit awards as well. Thanks to Bart  
21 and your whole team.

22 Okay. Give everybody a moment here. And while  
23 the staff are shifting round, I want to say a few words  
24 about the sustainable freight efforts here. Staff is  
25 providing an informational update today on work that's

1 going on with other State partners to meet Governor  
2 Brown's executive order to develop a multi-agency  
3 Sustainable Freight Action Plan for California that  
4 addresses our essential leadership role to improve our  
5 freight transportation system, and that brings together  
6 broad participation by both public and private entities.

7           This multi-agency approach is something new.  
8 It's not easy to do, frankly, because everyone has their  
9 own specific mandates and responsibilities. And so  
10 organizing this effort has proven to be a challenge, but a  
11 very good one. And I'm very excited about the progress  
12 that has been going on to date.

13           We have some of our State agency partners here  
14 today also to share their perspectives following the Air  
15 Board staff's presentation. Clearly, our longer-term  
16 success in this effort is going to be dependent on our  
17 ability -- we keep using the word leverage. This is an  
18 issue of everybody leveraging everybody else, I guess you  
19 could say.

20           (Laughter.)

21           CHAIR NICHOLS: The transportation agencies need  
22 to facilitate transportation, energy agencies need to make  
23 sure that we're using energy more efficiency --  
24 efficiently, air agencies need to clean up the air and  
25 meet our mandates to improve public health. And we all

1 need to be working together to implement the State's  
2 climate goals.

3           So the draft plan that was released earlier this  
4 month represented a collaborative effort to identify a  
5 long-term approach and some shorter term measures or  
6 actions that could be taken to build support and some  
7 accomplishments in this area that would meet all these  
8 different goals that we've identified for health and  
9 climate, as well as mobility, safety, and economics. Not  
10 just economics as a cost of doing things, but as an  
11 objective of improving the efficiency and profitability of  
12 our freight system, which is a very important element of  
13 the State's economy.

14           So we have a lot of work to be done, and a lot of  
15 opportunities for benefits as well, if we can improve the  
16 efficiency of the system at the same time that we're also  
17 reducing emissions.

18           And really a lot of what we're doing right now is  
19 positioning the State to be an effective partner with  
20 local government and industry in this effort, because  
21 historically we've all pursued our own objectives  
22 separately, and we've accomplished a lot, but clearly, we  
23 have a lot of work to be done.

24           So with that, Mr. Corey, would you please  
25 introduce this item?

1 EXECUTIVE OFFICER COREY: Yes. Thanks, Chair  
2 Nichols.

3 Staff presented an update to the Board this past  
4 January on the progress ARB has made on initiating and  
5 implementing actions across the freight sectors to provide  
6 immediate air quality and public health benefits. And as  
7 we reported then, with the help of our private and public  
8 partners, we're seeing real-world benefits of our efforts.  
9 So far, a 75 percent drop in statewide diesel particulate  
10 emissions from freight since 2005, and measurably cleaner  
11 air in port and railyard communities.

12 But the fact is that cancer risks remain  
13 unacceptably high especially in disadvantaged communities  
14 near major freight facilities. Attainment of federal  
15 standards compels significant additional emission  
16 reductions in the South Coast, San Joaquin Valley, and  
17 Sacramento, and meeting our 2030 climate targets requires  
18 further action from this sector as well.

19 Since July of last year, staff from the  
20 California Department of Transportation, ARB, California  
21 Energy Commission and the Governor's Office of Business  
22 and Economic Development have worked to develop the action  
23 plan under the leadership of the Secretaries for the  
24 Transportation, Environmental Protection and Natural  
25 Resources. Staff from those agencies released a draft, as

1 the Chair noted, on May 3rd, which is out -- currently out  
2 for public review through July -- through early July.

3 So staff is presenting this as an informational  
4 update in terms of the status, and progress that we've  
5 made so far.

6 So now I'd like to introduce Lezlie Kimura to  
7 provide the staff presentation

8 Lezlie.

9 (Thereupon an overhead presentation was  
10 presented as follows.)

11 MS. KIMURA: Thank you, Mr. Corey. Good morning,  
12 Chair Nichols, Vice Chair Berg, and members of the Board.

13 --o0o--

14 MR. KIMURA: Today, I will be providing an update  
15 on the collaborative efforts between ARB, our partner  
16 agencies and stakeholders to develop a California  
17 Sustainable Freight Action Plan. I will provide  
18 background on the freight transport system, talk about  
19 direction we received from the Governor, highlight  
20 components of the recently released draft, as well as next  
21 steps moving forward.

22 --o0o--

23 MS. KIMURA: You may recall from previous updates  
24 the importance of the freight system to California's  
25 economy. Freight-dependent industries account for over

1 one-third of the State's jobs and economy, representing  
2 over five million jobs distributed across the sectors  
3 shown on this slide and over \$740 billion in gross  
4 domestic product.

5 --o0o--

6 MS. KIMURA: At the same time, California's  
7 freight transport system generates a high portion of local  
8 pollution in parts of the State with poor air quality.  
9 Despite substantial progress over the last decade, diesel  
10 equipment continues to be a significant source of air  
11 toxics in and around freight hubs, which can cause cancer  
12 and other adverse health effects.

13 Freight equipment accounts for about half of  
14 statewide diesel particulate matter emissions. It also  
15 accounts for approximately 45 percent of statewide  
16 nitrogen oxides emissions. Reducing these harmful  
17 pollutants is an important local, regional, and State  
18 priority, and a matter of federal Clean Air Act  
19 compliance.

20 In addition, California has set aggressive  
21 targets to reduce greenhouse gas emissions 40 percent  
22 below 1990 levels by 2030. Meeting these targets will  
23 also require additional actions to decarbonize  
24 California's freight transport system.

25 --o0o--

1 MS. KIMURA: Planning to support change in this  
2 system is no small feat, however. As the nation's largest  
3 gateway for international trade and domestic commerce,  
4 California's interconnected systems of ports, railroads,  
5 highways, and roads are complex and continuously evolving  
6 to meet changing system demands.

7 Projections of substantial increases in freight  
8 volumes over the coming decade; competition from other  
9 states and international ports to modernize freight  
10 infrastructure and facilities; shifts in how consumers  
11 purchase things with eCommerce; new advances in  
12 technologies, such as intelligent transportation systems,  
13 autonomous and connected vehicles, and three-dimensional  
14 printers; as well as new science on health and climate  
15 change effects revealing the need for further risk  
16 reduction to communities are all changing the realm of  
17 what is needed and possible for this system.

18 California must find ways to take hold of  
19 opportunities within this active system and modernize  
20 strategically.

21 --o0o--

22 MS. KIMURA: To accomplish this, partnership is  
23 key. Our partners, shown on this slide, have already  
24 begun moving in this direction. Together, we have  
25 continued to implement modernizations over the last

1 several years, through mechanisms, such as incentive  
2 programs; local and regional groups, such as port  
3 commissions and metropolitan planning organizations,  
4 adopting clean air actions plans, and regional freight  
5 infrastructure plans; private investments; and, of course,  
6 actions taken by this Board.

7           While California will continue to leverage these  
8 improvements, the challenge of delivering both economic  
9 and public health benefits at our ports, highways, and in  
10 our communities will require further progress. Additional  
11 action with our partners must focus on well-planned  
12 investments across multiple sectors, and it must focus on  
13 deployment of new technologies, as well as providing major  
14 infrastructure upgrades with less impact on nearby  
15 communities.

16                               --o0o--

17           MS. KIMURA: As a key first step, the Governor's  
18 Executive Order directs the State agencies shown on this  
19 slide to develop a California Sustainable Freight Action  
20 Plan by July of this year. The action plan is an  
21 unprecedented effort. It is intended to integrate  
22 investments, policies, and programs across several State  
23 agencies, and to realize a singular vision for  
24 California's freight transport system that supports  
25 progress, on the three objectives of efficiency,



1 technology advancement, and competitiveness.

2 --o0o--

3 MS. KIMURA: To develop the draft action plan,  
4 the multi-agency team started with a strong foundation of  
5 research, technical, and stakeholder work. The plans and  
6 documents pictured here help to inform the plan. These  
7 documents reflect the State's most recent iteration of  
8 work intersecting with California's freight transport  
9 system. And collectively, they characterize the system's  
10 relationship to achieving broader transportation, air  
11 quality, energy, climate change, and resiliency goals.

12 --o0o--

13 MS. KIMURA: Broad outreach was also critical to  
14 the development process. From July 2015 through Spring of  
15 this year, the multi-agency team held 11 public workshops  
16 in Redding, Sacramento, Oakland, Fresno, Modesto,  
17 Bakersfield, Monterey, Los Angeles, San Bernardino, El  
18 Centro, and San Diego.

19 The team also held two webinars with over 150  
20 participants each. Regular meetings were also held with  
21 the California Freight Advisory Committee, also known as  
22 CFAC, industry associations, environmental and community  
23 groups, California Native American tribes, and small  
24 businesses ahead of the draft.

25 We used these opportunities to solicit input on

1 preliminary concepts for the draft plan, feedback we  
2 heard, primarily focused on potential pilot project  
3 concepts for the plan, including questions on what funding  
4 opportunities would be associated with these pilots.

5 --o0o--

6 MS. KIMURA: In addition to these efforts,  
7 Professor Sperling chaired a freight efficiency  
8 development group to inform this effort. Freight experts  
9 from academia, industry, and government were tasked with  
10 examining broad-based approaches for increasing system  
11 efficiency and reducing emissions.

12 We want to take a moment, Professor Sperling, to  
13 thank you for your leadership on this.

14 Over the course of six months, the group  
15 developed a series of white papers. These papers cover a  
16 range of efficiency strategies and look at approaches to  
17 funding, utilization of existing assets, planning,  
18 modernizing distribution nodes, as well as integrating  
19 data and information systems.

20 This work was used to inform the draft plan, and  
21 as result, some of the approaches are included as  
22 recommended actions and implementation steps moving  
23 forward. The full set of white papers are available on  
24 the action plan website, which is listed at the end of the  
25 presentation.

1                   --o0o--

2           MS. KIMURA:  Now on to the substance of the plan.

3           Earlier this month, the multi-agency team  
4 released the draft action plan for public review and  
5 comment.  The draft includes recommendations on both  
6 visionary and actionable elements, which I will summarize  
7 over the next few slides.

8                   --o0o--

9           MS. KIMURA:  Starting with the recommended vision  
10 for a sustainable freight transport system in 2050.  The  
11 multi-agency team developed this statement to help frame  
12 the effort over the long term.  It is intended to provide  
13 State agencies broad direction as they develop specific  
14 investments, policies, and programs related to freight  
15 transport.

16                   --o0o--

17           MS. KIMURA:  As a companion to the vision, the  
18 multi-agency team also developed 10 guiding principles,  
19 which correspond to the topics listed here.  The guiding  
20 principles define what the freight system should achieve  
21 to make progress towards the vision through public,  
22 industry, and stakeholder collaboration.  They also  
23 characterize the State's priorities for future freight  
24 investments in California.

25           In practice, staff would use these to help inform

1 proposals brought to this Board and others, as we move to  
2 implement future funding.

3 --o0o--

4 MS. KIMURA: The draft also includes  
5 recommendations on three statewide targets for 2030.  
6 Collectively, they are intended to guide the State toward  
7 meeting the vision and guiding principles. For system  
8 efficiency, the recommended target is a 25 percent  
9 improvement measured by increasing the value of goods and  
10 services produced from the freight sector, relative to the  
11 amount of carbon that it produces.

12 The next target focuses on transitioning to zero  
13 emission technologies, and is to deploy over 100,000  
14 freight vehicles and equipment capable of zero emission  
15 operation, and to maximize near-zero emission freight  
16 vehicles and equipment powered by renewable energy.

17 And for economy, the target is to foster future  
18 economic growth within the freight and goods movement  
19 industry by promoting flexibility, efficiency, investment,  
20 and best business practices through State policies and  
21 programs, and create a positive environment for growing  
22 freight volumes while working with industry to lessen  
23 immediate potential negative economic impacts.

24 State agencies would use these targets to  
25 measure, report progress, and adapt the plan's

1 implementation over time.

2 --o0o--

3 MS. KIMURA: As I mentioned earlier, progress  
4 will require partnerships across a number of areas,  
5 funding included. State government must continue to  
6 position itself as an effective partner. And it must  
7 leverage the broadest array of public and private  
8 financing available in this area.

9 The federal FAST Act provides a new source of  
10 funding for California's existing freight programs, and  
11 the Governor's budget proposes new ongoing funding of \$200  
12 million per year for transportation infrastructure.

13 Previously, the California Transportation  
14 Commission, Caltrans, regional and local transportation  
15 agencies, air districts, and this Board have leveraged  
16 over five and a half billion dollars with the \$3 billion  
17 Proposition 1B programs for freight.

18 These funds supported delivery of over 90  
19 transportation projects and more than 15,000 clean truck,  
20 locomotive, and marine vessel technology projects in  
21 California. The State's investment approach in these  
22 programs to simultaneously reduce pollution from freight  
23 and provide transportation improvements is a successful  
24 model.

25 The current budget includes dedicated, ongoing

1 funding for the freight infrastructure element. At this  
2 time, there is no similar dedicated funding for freight  
3 air quality to continue the Board's successful Proposition  
4 1B collaboration with the local air districts. The  
5 multi-agency team recommends working with the legislature  
6 to enact a freight transport system funding package. The  
7 package should enable new investments for transportation  
8 assets and advanced vehicles and equipment moving freight  
9 in California.

10 --o0o--

11 MS. KIMURA: As a starting point, the  
12 multi-agency team, included nine actions in the draft  
13 action plan. These are recommended for implementation  
14 over the next five years in coordination with our  
15 partners.

16 The first two actions build on the funding  
17 approach recommendations I just talked about, and are  
18 intended to help implement new investments in freight.

19 The third action is really about improving  
20 planning and prioritization of freight transportation and  
21 fuels infrastructure projects for future investment.

22 The fourth action focuses on accelerating clean  
23 technologies and fuels for freight.

24 --o0o--

25 MS. KIMURA: Continuing on to the fifth action,

1 the State agencies also recommend establishing a  
2 sustainable freight think tank. The think tank would  
3 provide insight into the future of freight. Its purpose  
4 would be to help anticipate transformational technologies,  
5 innovative solutions, and partnership opportunities ahead.

6 The sixth action is about continuing to promote  
7 the competitiveness of California's system.

8 The seventh action is to continue work with the  
9 freight efficiency group I discussed earlier.

10 The eighth action focuses on identifying and  
11 implementing steps to meet freight workforce needs.

12 And last, but not least, the ninth action, which  
13 is to participate in work the Office of Planning and  
14 Research is doing on process improvements that could help  
15 expedite delivery of beneficial projects.

16 --o0o--

17 MS. KIMURA: The State agencies identify  
18 recommended next steps for implementing many of these  
19 actions.

20 For infrastructure: The agencies identify safety  
21 enhancements for road and rail transport, expanding truck  
22 parking with plug-in capabilities to run onboard  
23 amenities, increasing use of waterways and low-emission  
24 rail shuttles to inland ports, and expanding on-dock rail  
25 options at seaports as next steps.

1           Other steps include planning for greater use of  
2 electricity and hydrogen as freight transportation fuels  
3 with infrastructure along the State's major freight  
4 corridors. The agencies also include development of a  
5 freight handbook to help with planning for freight  
6 facility siting, design, and operations.

7           For advancing technologies, next steps include  
8 development of more health protective emission standards  
9 for trucks, ships, locomotives, and related cargo  
10 equipment that ARB staff proposed in its pathways document  
11 last spring. Also included are steps for ARB and the  
12 Energy Commission to implement complementary incentives  
13 for demonstrating cleaner technologies in use, and to  
14 assist equipment owners with the incremental costs of  
15 cleaner equipment.

16           Other concepts included are low carbon renewable  
17 fuels development for aviation, interstate locomotive, and  
18 marine sources through possible mechanisms, such as  
19 inclusion in the cap-and-trade and low carbon fuel  
20 standard programs.

21           For competitiveness, next steps include  
22 partnering on data collection and modeling tool  
23 development to help with economic analysis of the costs  
24 and benefits of potential State actions, as well as  
25 metrics and benchmarking of the freight industry on a



1 regional scale.

2 For system efficiency, next steps include  
3 equipment and software technology solutions for trucking,  
4 including intelligent transportation systems, platooning,  
5 signal priority, and establishing and publishing truck  
6 route designations. Together, these steps can help  
7 provide dynamic travel information to drivers on the most  
8 efficient routes, reduce community impacts, and make  
9 better use of existing infrastructure.

10 Also included are operational practices, such as  
11 off-hour delivery strategies, to alleviate congestion at  
12 terminal gates and nearby roadways, as well as improve  
13 productivity and air quality.

14 And for workforce development, next steps include  
15 partnerships on pre-apprenticeship and upskilling  
16 programs, training model development, and community  
17 workforce agreements.

18 --o0o--

19 MS. KIMURA: In addition, the multi-agency team  
20 included recommendations on freight pilot project  
21 concepts. Ideas from the State agencies' research and  
22 stakeholder engagement efforts provided the starting  
23 point. The State agency team received over 50 ideas from  
24 the public this past November. Each idea was reviewed  
25 against the objectives set by the Executive Order. The

1 team looked for integrated, corridor-level concepts with  
2 potential to achieve measurable progress towards the  
3 targets.

4           These concepts also needed to have potential for  
5 system transformation, opportunities to integrate State  
6 agency supports, as well as have the possibility to be  
7 scaled up for implementation across the State.

8           The three project concepts shown here are the  
9 result of this review and public comments collected.

10           The dairy biogas for freight vehicles concept  
11 would involve work with partners to implement an initial  
12 phase of a commercial scale dairy biogas sourced,  
13 renewable natural gas fueling facility in the valley. The  
14 pilot could focus on pipeline injection and fueling  
15 station construction. ARB would be taking lead on this  
16 one with all agencies participating.

17           The next two concepts focus on advanced  
18 technology corridors with Caltrans as lead and all  
19 agencies participating. The southern California truck  
20 corridor pilot would involve work with partners on freight  
21 signal priority, travel information systems, communication  
22 systems infrastructure, and integrated corridor management  
23 on arterials and highways.

24           The California-Mexico border pilot would involve  
25 integrating communication systems infrastructure, such as

1 blue tooth sensors and global positioning system readers,  
2 implementing variable messaging, and a specialized border  
3 wait time application.

4 Potential agency support actions for each concept  
5 are included in the draft. The intent is to continue  
6 developing these concepts into shared investment  
7 opportunities within the next three years.

8 --o0o--

9 MS. KIMURA: Looking ahead, concepts for further  
10 exploration and potential future action are also  
11 identified. Most of the concepts that are listed on this  
12 slide are big picture ideas that are promising, but will  
13 require further discussion with experts and stakeholders.

14 The two large transportation infrastructure  
15 projects listed, the Interstate 710 corridor and the Otay  
16 Mesa East are currently proposed projects. These have the  
17 potential for big impacts on the system and could provide  
18 a platform for innovative strategies. For these, State  
19 agencies will continue tracking project developments and  
20 seek opportunities for partnership as appropriate.

21 --o0o--

22 MS. KIMURA: Now that the draft action plan is  
23 available for public comment, we are continuing our  
24 outreach efforts to gain feedback and help refine the  
25 document. Last week, we discussed the draft at a public

1 meeting of the California Freight Advisory Committee,  
2 yesterday, with the California Transportation Commission,  
3 and today here with you.

4           We will continue outreach meetings through June  
5 and, comments can be submitted electronically at the web  
6 address shown on this slide through July 6.

7           Staff will make changes as appropriate and  
8 provide the action plan to the Agency Secretaries for  
9 Transportation, Environmental Protection, and Natural  
10 Resources for consideration and submittal to the Governor.  
11 The State agencies anticipate beginning action plan  
12 implementation and providing periodic updates soon after.

13           The concludes the staff presentation, but before  
14 we end, we would like to take a minute to also thank you  
15 Chair Nichols for your help with this draft action plan as  
16 well.

17           And, at this time, I would like to ask the Board  
18 to hear from a few of our key State Partners on this  
19 effort. Here today with me, I believe -- oh, okay.  
20 Sorry.

21           So here today with me are representatives from  
22 the Governor's office -- not here. Okay. Sorry.  
23 California State Transportation Agency, and the California  
24 Energy Commission who have helped to lead and develop this  
25 draft plan and would like to share a few perspectives with

1 you.

2 Chair Nichols, I believe you'll be leading the  
3 introductions.

4 CHAIR NICHOLS: All right. Sorry, I was just  
5 going to introduce them by name. I was told that we were  
6 going to have representatives from Energy Commission and  
7 from STA. Do we call them CalSTA, is that what we call  
8 them? I don't know.

9 (Laughter.)

10 CHAIR NICHOLS: State Transportation Agency. Any  
11 way, so we have the Assistant Secretary for Rail and Ports  
12 for the Transportation Agency Ben De Alba.

13 Welcome.

14 ASSISTANT SECRETARY DE ALBA: Good morning.  
15 CalSTA, like CalePA.

16 CHAIR NICHOLS: Thank you.

17 ASSISTANT SECRETARY DE ALBA: Good morning, Madam  
18 Chair and Board members. I am Ben De Alba, Assistant  
19 Secretary for Rail and Ports at the California State  
20 Transportation Agency. I'm pleased to be here today to  
21 provide comment on behalf -- or on the sustainable Freight  
22 Action Plan on behalf Secretary Kelly. Just by brief  
23 background, the Transportation Agency is responsible for  
24 developing and coordinating the policies and programs of  
25 the State's transportation entities to improve the

1 mobility, safety, and environmental sustainability of  
2 California's transportation system.

3           The Agency consists of a mix of eight  
4 departments, boards, and commission, including Caltrans,  
5 the Highway Patrol, High-Speed Rail Authority, and the  
6 Department of Motor Vehicles to name a few.

7           I would like to first commend the interagency  
8 team that developed this draft plan. This includes staff  
9 from ARB, the Governor's Office of Business and Economic  
10 Development, the Natural Resources Agency, the Energy  
11 Commission and Caltrans.

12           I've witnessed all the hard work that went into  
13 creating this plan and have seen firsthand the interagency  
14 collaboration. As we heard in the presentation earlier  
15 today, or this morning, that the draft sustainable action  
16 plan is a reflection of unprecedented coordination. Its  
17 principles, 2050 vision, and objectives articulate a  
18 future in which California's trade system operates in an  
19 efficient manner that is both in the State's economic and  
20 environmental interests.

21           The plan's targets will help the State measure  
22 meaningful progress. And the pilot projects, when  
23 completed, will demonstrate integrated clean technologies,  
24 alternative fuels, advanced freight infrastructure, and  
25 local, economic development opportunities.

1 I'm proud to say that all of the plan's  
2 components work towards achieving the Governor's  
3 transportation, climate change, air quality, and economic  
4 goals and objectives.

5 This approach of addressing trade through the  
6 lens of economic and environmental policy is similar to  
7 that approach utilized in 2006, whether California voters  
8 passed Proposition 1B, a transportation bond measure that  
9 included the State's first comprehensive investment of  
10 public dollars in our trade corridors.

11 Proposition 1B included the \$2 billion trade  
12 corridor improvement fund to invest in trade-related  
13 infrastructure, and the \$1 billion goods movement emission  
14 reduction program. The TCIF and GMER programs were met  
15 with great success, having improved the mobility of our  
16 freight system, while at the same time reducing emissions  
17 and improving air quality in our trade corridors.

18 The timing of the action plan could not be  
19 better, as federal and State funding becomes available to  
20 invest in our trade corridors and clean technologies.

21 At the State level, the Governor's budget calls  
22 for new State transportation investments to be made in our  
23 major trade corridors. Under the Governor's funding and  
24 reform proposal, the State would invest 2.3 billion over  
25 the next 10 years in our major trade corridors. And at

1 the federal level, California will receive \$582 million in  
2 new federal FAST Act dollars over the next five years for  
3 freight infrastructure improvements.

4 We have a real opportunity to invest significant  
5 dollars in the freight system, which is why it's so  
6 important to have a statewide coordinated freight effort.  
7 If we're going to spend billions of dollars of public and  
8 private sector money to modernize, reduce community  
9 impacts, and improve our freight system, we must have an  
10 integrated approach and a unified policy on freight.

11 This is why the transportation agency is so  
12 excited to be a partner in the development of this freight  
13 action plan. We look forward to continuing the  
14 collaboration to finalize the Sustainable Freight Action  
15 Plan, one that works towards achieving all of our  
16 objectives.

17 Thank you.

18 CHAIR NICHOLS: Thank you. And I'd also like to  
19 call then on John Kato from the Energy Commission, another  
20 partner.

21

22 CEC DEPUTY DIRECTOR KATO: Good morning, Madam  
23 Chair Mary Nichols, esteemed Board members, and of course  
24 esteemed ARB colleagues.

25 I'm John Kato, Deputy Director of the Fuels and



1 Transportation Division at the Energy Commission. The  
2 Energy Commission is very appreciative of the  
3 collaborative efforts and to be part of the collaborative  
4 efforts that have produced a great product today, the  
5 action plan. We definitely look forward to continuing the  
6 collaborative efforts moving forward.

7           And without echoing Ben's eloquent words, and  
8 echoing again the great importance of this collaborative  
9 effort, I will simply add that we are very excited to be  
10 apart of the momentum of not simply transforming the  
11 transportation sector, but the innovation that will go  
12 behind this incredible transformation. So we definitely  
13 look forward to being part of that great effort.

14           I do want to say that from our Energy Commission  
15 perspective, we will stand in support through our  
16 alternative and renewable fuels and vehicle technology  
17 program by investing in a collaborative way now in our  
18 development and deployment of alternative and fuel and  
19 renewable technologies, as well as the advanced  
20 transportation strategies that will help California reduce  
21 GHG emissions and petroleum dependency in this sector.

22           We look forward especially with the finalized  
23 version of the draft -- of the action plan to help its  
24 goals and actions, and we look forward to continuing  
25 strengthening California's future.

1 Thank you.

2 CHAIR NICHOLS: Thank you, Mr. Kato. I think  
3 with that, we're ready to hear from the public. We have a  
4 number of witnesses who have signed up to speak to us on  
5 this item. As you will recall, it's still in draft form  
6 and we're still taking comment, but the people have taken  
7 the time and effort to come and speak to us directly, so  
8 we're very happy to see that there's so much interest  
9 here.

10 We'll begin with Mr. Barrett.

11 MR. BARRETT: Hi. Good morning. I'm Will  
12 Barrett with the American Lung Association in California.  
13 We're also apart of the California Cleaner Freight  
14 Coalition and wanted to quickly appreciate all the State  
15 agencies for making so much time to meet with our  
16 coalition and partners, many of who have traveled here  
17 today to talk to you about the plan.

18 So we view this effort as critical to really  
19 ensuring that California moves forward to reduce the harms  
20 caused by freight emissions, especially in our most  
21 disadvantaged communities. A major transition is needed  
22 now to cut the criteria air pollutants and toxic exposures  
23 due to the freight system, as well as to curb climate  
24 change emissions as we grow our economy.

25 The Lung Association supports the guiding

1 principle in the plan that zero emission technologies are  
2 needed everywhere possible, and that near-zero emission  
3 equipment should be running on renewable fuels everywhere  
4 that we don't yet have zero emission technologies.

5           We support the inclusion of a target for zero  
6 emission vehicles and equipment, but we do urge the  
7 agencies to provide more detail about where the 100,000  
8 target number. Earlier this week, the ARB's mobile source  
9 strategy was posted, and that contained a population of  
10 projection for 900,000 low NOx trucks in California by  
11 2030, which was a significant increase, especially for the  
12 South Coast, over the prior draft.

13           So we'd like to get a little bit better sense of  
14 where these numbers come from and how they interact with  
15 each other. So we do look toward to speaking with staff  
16 more about this, and in looking for ways that, you know,  
17 the zero emission target can be reviewed and potentially  
18 updated or increased going forward. The final plan should  
19 provide a clear focus on reducing harm in the most  
20 disadvantaged communities by the freight sector. The plan  
21 should specify a goal for reducing pollution hot spots in  
22 these communities, and providing priority for the  
23 implementation of strategies, incentives, and enforcement  
24 of the existing regulations to better protect these  
25 communities.

1           Finally, we appreciate the focus in the plan for  
2 continuing to build relationships with community  
3 organizations, with partners across various stakeholder  
4 groups. We think that the coordination so far among State  
5 agencies has been really impressive. I want to continue  
6 that coordination among stakeholders in all the agency  
7 discussions.

8           So we do look forward to working with you, with  
9 the Freight Coalition who you're going to hear more from  
10 today, and really looking forward to finalizing a strong  
11 plan this summer, so that we can continue to move forward  
12 with better health protections through improved freight --  
13 improvements in the freight system. So thank you all very  
14 much.

15           CHAIR NICHOLS: Thank you.

16           Jesse, good morning.

17           MR. MARQUEZ: Good morning. Jesse Marquez,  
18 Coalition for a Safe Environment. I'd like to thank the  
19 Board for this opportunity to share our public opinion on  
20 the draft program. I also want to thank all those  
21 different agencies and department staff for putting  
22 together a plan. This plan has never been written before  
23 anywhere in the United States, so it is a significant  
24 task, a very foreboding one, when you're not sure what  
25 you're supposed to put in it. But by sharing with the

1 public, we can team up. There are organizations like  
2 ours. There are individuals out there that are little  
3 think-tanks just dying for the opportunity to share with  
4 you.

5 But I do have a major concern, which is one of  
6 our little specialty areas of our organization, which is  
7 on the pilot project program. We see what's been proposed  
8 as being too limited in scope for what you asked for.  
9 Last year, you asked and provided an opportunity for the  
10 public to submit pilot project proposals.

11 Surprisingly, you received 54, which is great.  
12 Shocking to you also is that as big as a critic I am and  
13 our organization is about many things, we actually liked  
14 46 of the project proposals.

15 (Laughter.)

16 MR. MARQUEZ: So that's not bad, you know, when  
17 you saw us saying that hey we like these things. But  
18 again, it's an opportunity where we share what we learn as  
19 well.

20 What we see is that the project should be grouped  
21 to meet a specific crate transportation category: Number  
22 one, zero emissions. So we have three areas that we feel  
23 that should be the focus, zero-emission trucks that are  
24 Class 8, drayage trucks for the heavy freight. Zero  
25 emission trucks that are class 7 and less that are for the

1 general consumer type freight projects. And then zero  
2 emission locomotive trains for regional and statewide  
3 freight transportation.

4           Because we're talking about public money, and we  
5 are, and I am a member of the public, we don't mind you  
6 spending any amount of money on these projects. We don't  
7 want to think narrow and say, oh, one-truck program. The  
8 fact of the matter, a class A drayage truck is going to be  
9 use at the Port of L.A., the Port of Oakland, Port of  
10 Stockton. It's used everywhere. So where the project is  
11 being done is not that important. It's doing it.

12           Right now, there are already two class 8 truck  
13 manufacturers that are selling the trucks commercially.  
14 They didn't wait to get CARB certification to do it.  
15 They're selling them already. There are four more in  
16 development. So we do not mind if you fund two or three  
17 zero-emission freight class 8 trucks, or two or three  
18 projects that are class 7, 6 trucks, because the need is  
19 there.

20           You did receive two maglev train project, and we  
21 would support you doing both of those as well.  
22 Competition is great. Let's see who rises to the top in  
23 success.

24           Our second category are emission capture  
25 technologies. The first one being locomotive train. And

1 then we're talking two. We have freight trains and then  
2 we have public transportation that can both learn from  
3 that. Currently, there is one manufacturer that could  
4 meet both those needs, and we feel that should be done.

5 CHAIR NICHOLS: That was your three-minute time  
6 being used up, but I'll let you just state what the third  
7 category is, since you told us there were three.

8 MR. MARQUEZ: The third was the truck and train  
9 corridors. We have freeway-highway networks that can be  
10 built there. We have water aqueduct systems that can be  
11 built alongside there, and then we have some sanitation as  
12 well.

13 So those would be three. In that case, it would  
14 be like pilot studies to see the feasibility versus an  
15 actual project, but we support those.

16 Thank you.

17 CHAIR NICHOLS: Thank you. Thanks very much.

18 Okay. Taylor Thomas.

19 MS. THOMAS: Good morning, Board and staff. My  
20 name is Taylor Thomas. I am from Long Beach. I'm with  
21 East Yard Communities for Environmental Justice. And  
22 we're also a member of the California Cleaner Freight  
23 Coalition.

24 And I want to begin by saying that the work that  
25 you all do here and the work that everyone else in the

1 room does is very important. Because of this work,  
2 because of the programs, the grants, the incentives, and  
3 the regulations, communities like mine can breathe a  
4 little easier. But collectively, we still have a lot of  
5 work to do.

6           With our extensive freight infrastructure,  
7 California is ground zero for innovation and action that  
8 protects public health and grows our economy and protects  
9 the environment. This draft plan is a commendable  
10 undertaking, and it contains many great proposals. But  
11 with that being said, we have a few suggestions that could  
12 make the draft plan a little stronger.

13           The first one, regulations to phase-in zero  
14 emission technology for heavy-duty trucks beyond the South  
15 Coast. This is very important for other communities  
16 that -- other port communities that don't have clean truck  
17 programs and aren't seeing those air quality gains.

18           Another suggestion is to include guarantees of  
19 public participation in freight project development. As  
20 residents who are impacted by these projects, we often  
21 aren't afforded the opportunity to meaningfully engage,  
22 and we just want to know what's going on and be able to  
23 participate.

24           And lastly, the plan should also include a  
25 specific evaluation criteria that prevents projects from



1 increasing pollution burdens in EJ communities.

2           And those are all my suggestions, but I'd just  
3 like to leave you all with a quote that you've probably  
4 seen or heard before, but I just think it really captures  
5 the spirit of what we're all doing. And I modified it a  
6 little bit, but it goes something like this.

7           "As society grows well when people plant trees  
8 whose shade they know they'll never sit in".

9           So thank you for the opportunity.

10          CHAIR NICHOLS: Thank you for participating.

11          MR. LUGO: Good morning, Chair Nichols and Board  
12 members. My name is Humberto Lugo. I'm with the  
13 environmental justice organization, community organization  
14 in Imperial County, the Comite Civico Del Valle. And I'm  
15 also a member of the Freight Coalition. We support the  
16 Agency's vision of deploying zero emissions wherever it is  
17 available, but we also think there's a lot of work to be  
18 done, because diesel pollution continues to burden  
19 environmental justice communities. They are impacted by  
20 toxic pollution of the freight industry.

21           The plan is a concrete action plan on  
22 environmental justice equity to eliminate freight  
23 pollution hot spots, which are entirely in disadvantaged  
24 communities throughout California. Our air monitoring  
25 projects at the California-Mexico border already beginning

1 to show the impacts of freight in that area through our  
2 communities which are used as transportation corridors as  
3 well, because these trucks do go through our communities  
4 as they use them as corridors for goods movement.

5           These activities continue without protecting the  
6 health of the most vulnerable communities. For example,  
7 the world logistics center new to this growth in goods  
8 movements current regulation will fall short of emission  
9 reduction goals, unless updated to reflect the State's  
10 need to transition to zero emission technology.

11           If California's invested in maintaining a world  
12 class freight system, it must develop regulations and  
13 programs that will reduce or entirely eliminate emissions.  
14 With goods movement expected to double in the next decade,  
15 we should transition to zero emissions.

16           There is also talk about dedicated truck lanes in  
17 the near future, which will increase the amount of trips  
18 that these trucks -- the dedicated truck it will increase  
19 the trucks going back and down the freeways from say two  
20 trips a day increase, it will increase it to three to five  
21 trips a day, which will increase the impact on our  
22 communities struggling to breathe clean air.

23           With all the massive proposals to build and  
24 expand freight infrastructure, it's imperative that the  
25 ARB weigh in on all of the projects to ensure that all the

1 project proponents do not invest infrastructure and  
2 technologies that contradict air quality goals. Ensuring  
3 zero emissions technologies and supporting infrastructure  
4 into these facilities is vital to this effort.

5           So it's urgent that we move away from fossil  
6 fuels and transition to zero emission technologies for the  
7 health of our most vulnerable. Transitioning to zero  
8 emissions is also necessary to tackle climate change and  
9 reach our greenhouse reduction goals, and while  
10 prioritizing the most impacted, polluted communities, or  
11 disadvantaged communities like Imperial County.

12           Thank you.

13           CHAIR NICHOLS: Thank you.

14           MR. JATKAR: Good morning Chair Nichols and  
15 members of the Board. Shrayas Jatkar with Coalition for  
16 Clean Air, and also a member of the California Cleaner  
17 Freight Coalition. I'd like to take this opportunity to  
18 chair with you the comments that I made yesterday in  
19 Stockton at the California Transportation Commission. And  
20 while I understand I'm here at the ARB this morning, given  
21 that this is a multi-agency plan, I think it's worth  
22 mentioning what we are saying to the other agencies, in  
23 particular when it comes to transportation infrastructure.

24           So, you know, a couple of comments. Really, the  
25 first is about alignment of transportation infrastructure

1 funding. And two comments on that. First, is that  
2 infrastructure projects should really be prioritized by  
3 how well they actually implement the California  
4 Sustainable Freight Action Plan, and hopefully actually  
5 you have a plan for achieving emission reductions through  
6 infrastructure projects.

7           And sadly, we did not see that. We're a little  
8 concerned we did not see that in the most recent round of  
9 fast lane and Tiger grant funding from Caltrans, but  
10 hopefully we'll see that going forward.

11           Secondly, in transportation funding packages, we  
12 hope to see a model that we saw in Prop 1B, or something  
13 similar to that, so that for every \$2 spent on  
14 transportation infrastructure, there's a dollar spent on  
15 zero emission vehicles and equipment.

16           So I hope to see something like that in the  
17 action plan going forward. And then, I'd like to just  
18 echo the comments around public participation. Our  
19 coalition, we have met with a number of the agencies and  
20 will continue to do so. But one of the principles that  
21 was listed there is regional and local collaboration. And  
22 it's especially at those regional and local levels where I  
23 think public participation needs to be guaranteed, when it  
24 comes to transportation infrastructure planning and  
25 funding.

1           And lastly, there were some comments made  
2 yesterday at the CTC about funding and State support. And  
3 so I just want to flag that, because next month you'll  
4 hear the funding plan about the Low Carbon Transportation  
5 Program. A number of the projects are in the heavy-duty  
6 sector. And in the past, we've seen kind of a singling  
7 out of the Clean Vehicle Rebate Project and other projects  
8 on the light-duty side.

9           We really need to make sure that funding is  
10 dedicated to those heavy-duty projects as well as it  
11 simply relates to this freight action plan.

12           Thank you

13           CHAIR NICHOLS: Okay. Thanks.

14           MR. ERVICE: Good morning, Chair Nichols, members  
15 of the Board, and other State agency representatives. My  
16 name is Joel Ervice. I'm a member of the California  
17 Cleaner Freight Coalition and the associate director of  
18 RAMP, Regional Asthma Management and Prevention.

19           I want to applaud the agencies involved for their  
20 sustained and intense work over the past many months.  
21 Coordinating and planning for a freight system that is as  
22 complicated as California's is no easy task. So thank  
23 you.

24           The draft plan had some strong steps that will  
25 promote cleaner skies and healthier communities throughout

1 the State. Examples include deploying zero emission  
2 technology wherever possible, proposals to clean up  
3 engines and fuels through measures like the renewable  
4 diesel and last-mile delivery standards, and then  
5 infrastructure investments in the electrification of  
6 freight.

7           But there's more that the plan can and should do  
8 to promote health and meet our clean air standards.  
9 First, the plan needs quantified emission reduction goals  
10 for PM2.5, NOx, and greenhouse gases, putting 100,000 zero  
11 or near zero-emission vehicles or equipment in the field  
12 sounds good. But having a number that ensures that  
13 gets -- that we get to our emission targets is even  
14 better.

15           Second, we need to better link freight  
16 transportation spending with zero emission support. The  
17 plan should mimic Prop 1B's approach, which set aside \$1  
18 for zero emission vehicles or equipment for every \$2 spent  
19 on infrastructure.

20           Additionally, any freight transportation spending  
21 should be prioritized by how well projects adhere to the  
22 action plan.

23           Third, given what we already know about freight  
24 hot spots, it's disappointing that the plan doesn't go  
25 beyond the freight facility handbook and data collection

1 for freight hubs.

2 We need enforceable standards for freight hubs  
3 sooner, rather than later, to ensure that these are sited  
4 appropriately, and that facility operations decrease the  
5 pollution burden on nearby communities.

6 On a related and final note, the plan needs a  
7 clear and more consistent commitment to equity and the  
8 reduction of pollution hot spots. These hot spots, often  
9 in low income communities and communities of color, are  
10 often where the asthma burden is highest. The plan should  
11 ensure that air quality improvements are targeted to where  
12 they're needed the most.

13 Thank you for your time.

14 CHAIR NICHOLS: Thanks.

15 BOARD MEMBER TAKVORIAN: May I ask something.

16 CHAIR NICHOLS: Yes.

17 BOARD MEMBER TAKVORIAN: My understanding is that  
18 the webcast isn't working. It sounds like we're having  
19 problems with it.

20 CHAIR NICHOLS: Yes, I'm sorry. I meant to speak  
21 from the platform here. So they're having problems with  
22 the webcast. And I believe our folks are working to try  
23 to fix it, but I don't know that they have an estimate as  
24 to when it will be restored. This is an unusual problem,  
25 I would say. We normally do not have a problem with the

1 webcast. So anybody have anymore information than that?

2 Tracy.

3 BOARD CLERK JENSEN: They are working on it. So  
4 as soon as possible, we'll get it back up.

5 CHAIR NICHOLS: Okay.

6 BOARD MEMBER TAKVORIAN: It's unfortunate. I  
7 don't know how you manage it with so much, but there's a  
8 lot of communities watching.

9 CHAIR NICHOLS: I know there's great interest on  
10 the part of the public who aren't able to be here in  
11 what's going on today. We could, I suppose, take our  
12 lunch break now, and hope that it will get fixed in time  
13 to resume. That's about the only thing I could think of  
14 to do. It would not, otherwise, I think make sense to  
15 extend the time for the meeting.

16 BOARD CLERK JENSEN: It will be archived as well  
17 after the meeting, not that they don't want to watch it  
18 eight now, but I'm just saying it will be archived later  
19 to be able to be viewed.

20 BOARD MEMBER TAKVORIAN: So it's being captured.

21 BOARD CLERK JENSEN: Yes.

22 CHAIR NICHOLS: So anyone could -- could get it,  
23 but I should take the pulse of the Board here, whether you  
24 want to try to stop now until they get it back up and  
25 running again, we could do that. It wouldn't -- I mean,



1 we're not legally required to do that obviously, but it  
2 would just be a matter of acknowledging the public  
3 interest in this.

4 Ellen, did you have a thought?

5 CHIEF COUNSEL PETER: Just a comment. We don't  
6 have the ability to -- we don't have it set up where  
7 people can comment remotely. So if there was a situation  
8 where people needed to watch it, so they could, you know,  
9 participate, then I'd be very concerned and would suggest  
10 taking a break to make sure we're -- we would have to take  
11 a break, because then that would be part of the public  
12 policy.

13 The webcast is not -- we don't do it that way,  
14 and so as the Board Clerk Tracy Jensen just pointed out,  
15 it is being recorded. The fact that it's not being  
16 webcast right now does not mean that it's not being  
17 recorded.

18 So we typically put it up. Our contractor often  
19 gets it up within a day. And so we can, during -- after  
20 they resolve the on-line problem, we will check with them  
21 and say when it can go up. So to that extent, it's the  
22 Board's choice if they want to take the break now or not,  
23 but it's not precluding anybody from participating because  
24 it's not working. It's not good, because it's not live,  
25 but we'll see what that happens.

1           As Chair Nichols mentioned, we've used these  
2 people since about mid-2008. And this is very exceptional  
3 that we've had a problem. It's very unfortunate.

4           BOARD MEMBER TAKVORIAN: Well, I want to also  
5 respect the people who are here.

6           CHAIR NICHOLS: Correct. Yes.

7           BOARD MEMBER TAKVORIAN: So I -- while I  
8 appreciate that, I think -- I thought that there was an  
9 ability for folks to comment, so I was concerned about  
10 that. So thank you for the clarification.

11          CHAIR NICHOLS: Sure.

12          BOARD MEMBER TAKVORIAN: I think we can move  
13 forward and hope that we'll catch up.

14          CHAIR NICHOLS: Yeah. Well, as I said, this has  
15 not happened to us in years, as far as I know. We've had  
16 very reliable service from this organization. So I  
17 just -- I hope they can move quickly.

18          CHIEF COUNSEL PETER: And the also just to add  
19 the one point, the comment period is open till July 6,  
20 which staff had mentioned. And so all the written  
21 comments, there is ample time to submit the written  
22 comments.

23          CHAIR NICHOLS: All right. Well, then we'll let  
24 Mr. Cort proceed.

25          MR. CORT: Good morning. Paul Cort. I'm with

1 Earth Justice, and also a member of the California Cleaner  
2 Freight Coalition.

3           And as you've heard, the California Cleaner  
4 Freight Coalition is -- sees a lot of good action in this  
5 plan. But I think what you've also heard is that while  
6 the plan contains positive targets and actions, CCFC will  
7 continue to push for more, because frankly this plan just  
8 does not get us where we ultimately need to go.

9           And, in particular, I wanted to highlight for  
10 this Board the focus on transitioning to zero emission  
11 technologies. The Executive Order directs the agencies to  
12 establish a clear target to transition to zero emission  
13 technologies. And the draft plan sets that target at  
14 100,000 freight vehicles and equipment by 2030. But the  
15 plan does not explain how that number enables that  
16 transition that seems to be envisioned by the Executive  
17 Order or to achieve any of the underlying goals around air  
18 quality or greenhouse gases.

19           CCFC believes that if there were such an  
20 analysis, that the conclusion would be that we need an  
21 even more aggressive target for conversion and transition  
22 to zero emission technologies.

23           I want to highlight this issue with this Board,  
24 because I think the Board has an important voice on this  
25 target in particular in the plan. And we hope that ARB

1 will provide that leadership to strengthen the plan before  
2 it becomes final.

3 Thank you.

4 CHAIR NICHOLS: Thanks.

5 MS. ADEYEYE: Hi. My name is Adenike Adeyeye.  
6 I'm also with Earth Justice and the California Cleaner  
7 Freight Coalition.

8 Thank you so much for all your work on the plan  
9 and for the opportunity to comment. I just have a few  
10 comments that have mostly already been mentioned but I  
11 think they bear repeating.

12 We, as a coalition, support a greater emphasis on  
13 zero emission vehicles in this plan wherever possible.  
14 It's, as people have mentioned, so important for meeting  
15 our clean air standards and our climate goals. And we  
16 think that it's important to set clear emission reduction  
17 goals for criteria pollutants and for greenhouse gases,  
18 because without those clear targets that are based in  
19 science of what we need to get -- what we need to get to  
20 the national ambient air quality standards, it will be  
21 hard to meet those goals.

22 We also like what Joel Ervice said, we think that  
23 enforceable standards for freight hubs are really  
24 important, and it's important to have as a goal in this  
25 plan eliminating the existence of these freight hot spots

1 in environmental justice communities.

2           And finally, I think it's very important to  
3 expand the geographic reach of some of the pieces of the  
4 plan. There's a lot of focus on South Coast, and I think  
5 that's really important because South Coast has a huge air  
6 quality challenge, but there are other regions in the  
7 State that have that same challenge, and we'd like to see  
8 those efforts expanded beyond South Coast to include San  
9 Joaquin Valley, to include all parts of the State that are  
10 suffering under the challenges that dirty air creates.

11           So thank you so much for the opportunity to  
12 comment and thank you for your work on this plan.

13           CHAIR NICHOLS: Thanks.

14           MR. O'DEA: Hi, Chair and Board. Jimmy O'Dea  
15 with the Union of Concerned Scientists and also with the  
16 California Cleaner Freight Coalition.

17           First, I want to thank the Board and staff for  
18 working with other agencies to get this plan out. It's  
19 really apparent that the Governor's Executive Order  
20 facilitated this cross-agency facilitation that's needed  
21 for improving our freight system. Things that we like  
22 about the freight plan, there's -- the zero emission  
23 vehicle targets, in particular, and we think the plan  
24 rightfully identified the range of actions needed for zero  
25 emission vehicles, including analysis, incentives, and

1 regulation kind of the whole range -- the spectrum of  
2 levers were identified.

3           We also think that the plan did a nice job  
4 recognizing that charging and fueling infrastructure are  
5 critical to getting these zero emission vehicles on the  
6 road. So it's not just the vehicle component, but also  
7 the infrastructure.

8           But we do see some ways -- three ways, in  
9 particular, the plan can be improved before being  
10 finalized.

11           First, really integrating community involvement  
12 and equity into the plan. Dr. Balmes mentioned, you know,  
13 it's science and data that really show that, you know,  
14 communities of color, and low-income communities  
15 disproportionately experience the health effects of  
16 freight pollution. And as a science based organization we  
17 certainly see that as well.

18           And so we want to say, you know, that this is  
19 inequitable, that communities are experiencing different  
20 effects. And I want to draw attention to the fact that  
21 sustainability doesn't necessarily mean equity. And so,  
22 you know, just one easy example that could go a long ways  
23 in terms of being able to look back at this planning  
24 document to point to would be just adding two words to the  
25 vision statement.

1           So right now -- so you just -- changing the  
2 vision statement to say, "Utilize a partnership of  
3 federal, State, regional, local...", and adding community,  
4 "...and industry stakeholders to move freight in  
5 California on equitable, modern, safe, integrated,  
6 resilient system. So just two words would really show  
7 that this plan is committed to community and equity and be  
8 a way to point back to.

9           More concretely, We think that equity can be  
10 integrated into the plan by prioritizing deployment of the  
11 100,000 zero emission target into communities that have  
12 been most impacted by freight.

13           And third, we support the proposed actions on  
14 last-mile delivery trucks, and the airport ground support  
15 equipment, but also see drayage trucks as being equally  
16 well-suited for the same type of low NOx standards and  
17 zero emission standards that were proposed for airport and  
18 last-mile delivery trucks.

19           And we think that is particularly important as a  
20 follow on to really make the most of ARB's investment in  
21 drayage trucks with the recent announcement of \$23.6  
22 million for drayage trucks. So we think that standards  
23 would really make that investment go a long ways.

24           So again, thanks for your leadership on this and  
25 look forward to working with you all.

1 CHAIR NICHOLS: Just made it.

2 MS. VAZQUEZ: Hi. Good morning. My name is  
3 Diana Vazquez. I'm here on behalf of Sierra Club  
4 California, and also a member of the California Cleaner  
5 Freight Coalition.

6 And as my partners indicated previously, we  
7 definitely support the advanced technology of really  
8 looking at technology in the different sectors of freight.  
9 We understand technology is not there in some sectors, but  
10 there is some technology available already, and  
11 specifically in the bus sector and then they drayage  
12 sector. So really focusing on the technology that we have  
13 right now and how do we deploy that to those communities  
14 that my colleagues have mentioned, specifically  
15 Disadvantaged communities.

16 One of the things that we really want to kind of  
17 emphasize is the public input. This is something that's  
18 really critical and really bringing the stakeholders  
19 involved, and specifically communities that want to be  
20 involved, but they just don't really know how.

21 We have been doing a lot of outreach, at least  
22 within the coalition, to really bringing people who are  
23 affected by the freight hubs to really get involved in  
24 this plan and really seeing what are the things that they  
25 need, rather than us telling them what they need.



1           And within that, I know in the freight, there's  
2 an actual quote saying that we want to actually identify  
3 regulatory processes to expedite permitting processes.  
4 Our thing is we're afraid in expediting these processes,  
5 you're going to actually lessen community input. We  
6 understand that we have to expedite some of the processes  
7 to actually get projects done, but also being mindful that  
8 a community has to really provide that input with  
9 sufficient time, so we can actually see the goals that  
10 were outlined in Executive Order and be implemented  
11 effectively.

12           So with that, we really look forward in working  
13 with the rest of the agencies. We've been meeting with  
14 them for the last couple months. They've been really  
15 welcoming and really receptive to our comments, So we're  
16 definitely looking forward to actually seeing this plan be  
17 finalized, but also the implementation process, so thank  
18 you for that.

19           CHAIR NICHOLS: Thank you.

20           MR. SCHOTT: Good morning, Madam Chair and  
21 members. Tim Schott on behalf of the California  
22 Association of Port Authorities, which is comprised of the  
23 State's 11 publicly-owned ports, including the nation's  
24 largest container ports and complementary system of niche  
25 ports.

1           Many of our members participated very actively in  
2 the development of the Sustainable Freight Action Plan  
3 draft. And we also participated in some of the component  
4 action plan, such as the freight mobility plan. We are a  
5 member of a broader coalition of industry stakeholders  
6 that include most of the folks in the supply chain. And  
7 we would ask you to consider that as you consider these  
8 comments.

9           We would like to thank the staff, as well as --  
10 the ARB staff, as well as Caltrans, GO-Biz, the Energy  
11 Commission for their efforts to prepare the draft action  
12 plan, and their substantial effort to main a robust and  
13 inclusive process, including multiple meetings of the  
14 Freight Advisory Committee, the Efficiency Strategy  
15 Development Group, and direct meetings with stakeholders.

16           We believe the draft action plan reflects the  
17 challenge and necessity of balancing the objectives  
18 identified in the Governor's Executive Order,  
19 competitiveness, efficiency, and emission reductions.

20           California's work -- California's ports work to  
21 balance these objectives on a continuing and daily basis.  
22 And at the same time, we're facing very significant  
23 increased pressures complicated by an ever evolving  
24 maritime industry and competitive necessity.

25           Closer partnership with our supply chain partners

1 to achieve higher levels of efficiency is now a  
2 competitive necessity. And this is true for emissions  
3 reductions as well. We have achieved tremendous  
4 reductions working in partnership with our customers and  
5 seek to build on this success through additional  
6 collaboration. This is also a competitive necessity.

7 Our experience and continued work in these areas  
8 serves as the basis for our contributions to this  
9 important effort, while we are continuing to review the  
10 draft action plan, and we anticipate providing more  
11 detailed comments to the agencies. We know that achieving  
12 these goals will require a partnership with you, the Air  
13 Resources Board.

14 Your technical and financial assistance in  
15 transitioning to cleaner equipment, maintaining  
16 competitiveness, and achieving greater efficiency will be  
17 a key success factor. We look forward to continuing to  
18 work with you and all the stakeholders as meetings are  
19 continue to be convened to further development the plan  
20 and implement strategies.

21 Thank you very much.

22 CHAIR NICHOLS: Thank you.

23 MR. KENNY: Good morning, Chair Nichols, members  
24 of the Board. My name is Ryan Kenny I'm with Clean  
25 Energy. We're the Nation's largest provider of natural

1 gas and renewable natural gas transportation fuel. We  
2 thank staff for the robust report in the action plan. We  
3 do have a few improvements that we'd like to offer through  
4 our comments today and also in writing.

5 A recent report, as you may have seen, called  
6 Game Changer, which was sponsored by numerous  
7 stakeholders, including the South Coast Air Quality  
8 Management District found that the most cost effective way  
9 to reduce NOx and carbon emissions is via near zero  
10 engines combined with renewable natural gas fuel.

11 It would result in three to eight times more NOx  
12 reductions and five to 14 times more greenhouse gas  
13 reductions compared to EVs and fuel cell counterparts.

14 It's also cost effective, in that you can  
15 purchase four times more near zero natural gas trucks,  
16 which enables a greater greenhouse gas reduction, even  
17 without the use of renewable natural gas.

18 It also supports the argument of why ARB and her  
19 sister agencies should pursue all advanced technology  
20 choices, not just a focus on zero emission vehicle  
21 strategies.

22 Also, with regards to the next item, short-lived  
23 climate pollutants, near zero vehicles also are a great  
24 contributor to reducing those especially when used with  
25 renewable natural gas.

1 I'll just add too, that as was mentioned earlier  
2 regarding the 100,000 zero emission vehicle figure that  
3 was included in the report that's needed by 2030, with  
4 near-zero emission technologies wherever else, there is no  
5 case or strategy presented in the report that justifies  
6 that figure or explains how the agencies will accelerate  
7 zero and near-zero emission strategies to meet the targets  
8 required to reach the federal ozone attainment goals.

9 Conversely, as you'll recall, in the mobile  
10 source strategy document, it does identify the need to  
11 deploy 900,000 near zero engines, and estimates that only  
12 23,000 ZEVs will be available by 2030. This, in our  
13 opinion, is a disappointing part of the action plan. We'd  
14 like to see that addressed in the final draft.

15 Just wrapping up, we believe that the clear --  
16 only clear way to deploy the sheer volume of near zero  
17 trucks required to meet the clean air standards is to  
18 develop a number of strategies that include meaningful  
19 truck incentives, the phase-out of older model year trucks  
20 throughout the freight system, the acceleration of  
21 renewable natural gas production statewide, amongst other  
22 innovative strategies. This was our expectation of the  
23 action plan, and we strongly urge the Board and staff to  
24 consider these comments.

25 Thank you.

1 CHAIR NICHOLS: Thanks.

2 MR. EDGAR: Good morning, Chair Nichols and Board  
3 members. Sean Edgar. I'm the director of  
4 cleanfleets.net, and I feel like I'm the bridge speaker  
5 this morning. I'm going to tie in Mr. Kenny's comments on  
6 natural gas benefits for local trucking. And then I'll  
7 distinguish those from my colleague Chris Shimoda with the  
8 California Trucking Association, who will be talking about  
9 some of the challenges with over-the-road trucks.

10 So Clean Fleets has been proud to assist many  
11 fleet owners in the construction, moving, and storage  
12 industry, and local delivery companies and service  
13 companies, like AT&T, Coke, and just about half the refuse  
14 and recycling industry.

15 So, Mrs. Riordan, and I continue to share a magic  
16 moment over trash trucks. At a prior meeting, I  
17 referenced our 16 years of history implementing the diesel  
18 risk reduction plan, and hopefully my comments can be  
19 focused toward implementing what is called for as an  
20 aggressive strategy over at least the next 15 years.

21 I'll be referencing slide 18 of the staff's  
22 presentation. And specifically, what I'll reference is  
23 that the near-term path to near-zero emissions is really  
24 going to be from local trucking fueled with renewable  
25 fuels. And what I mean by that is that your staff called

1 for -- in action item number 4 of the State agency  
2 actions, staff called for a five-year approach to rolling  
3 out cleaner vehicles.

4           And what we can tell you is that the Game Changer  
5 Report, which I'm going to reference here in a moment, did  
6 a great job in -- Gladstein, Neandross & Associates in its  
7 work for South Coast AQMD and others referenced just in  
8 the past two weeks. Vice Chair Berg attended the ACT Expo  
9 in Long Beach. And the Game Changer Report has some great  
10 possibilities for local trucking.

11           I'll reference that the short-lived climate  
12 pollutant item, which is going to be coming up after  
13 lunch, is really going to be a key discussion about how  
14 fuels can be produced. But what I can tell you is, and  
15 I'd just like to reference a few items out of the Game  
16 Changer Report, and it will be worthwhile just to read a  
17 couple of their conclusions after some exhaustive study in  
18 the time I have left.

19           The first conclusion that the report comes to is  
20 that only one fuel technology platform meets all  
21 commercial feasibility and logistics tests to immediately  
22 begin the transformation to near-zero heavy-duty natural  
23 gas vehicles fueled by increasing volumes of ultra-low  
24 greenhouse gas renewable natural gas. The key thing there  
25 in the findings of the report immediately begin.

1           The second piece that I'll reference is that  
2 while nearly -- with nearly the full range of heavy-duty  
3 vehicles covered, the combination of near -- new near-zero  
4 emission natural engine technology and RNG provide the  
5 single best opportunity for America to achieve immediate  
6 and substantial NOx emissions reductions in the on-road  
7 heavy-duty sector.

8           Natural gas for local transportation is a great  
9 choice, and that should be accented in the report  
10 findings.

11           Thank you.

12           CHAIR NICHOLS: Thanks, Mr. Edgar.

13           MR. SHIMODA: Good morning, members of the Board  
14 and Chairman Nichols. I'm Chris Shimoda with the  
15 California Trucking Association.

16           And I'd first like to thank staff from all the  
17 agencies who had a hand in putting together the draft plan  
18 before us today from the Governor's office, Caltrans,  
19 CARB, GO-Biz the Energy Commission, and CalSTA. I'd also  
20 like to support the comments of my colleague Tim Schott  
21 from the ports and note that our comments today are  
22 reflective of broader freight stakeholder group who's been  
23 working to provide input to staff during the formulation  
24 of this plan.

25           And we appreciate the difficulty of the task that



1 this interagency work group had on their hands this past  
2 year to deliver a draft plan, that balanced zero  
3 emissions, efficiency and economic competitive, as was  
4 called for in the Governor's Executive Order.

5 And the CTNR goods movement industry partners are  
6 reviewing this draft, and we definitely plan to provide  
7 further written and oral comments in the near future. And  
8 we appreciate that so far this draft plan recognizes the  
9 important role that goods movement plays in California's  
10 economy, providing a third of the State's economy in jobs,  
11 and that the transition to zero emission technologies,  
12 getting that done while keeping California competitive  
13 really is a multi-decade effort that's going to require  
14 significant collaboration and incentives to achieve.

15 And we also look forward to continuing to work  
16 with the State agencies as they convene the stakeholder  
17 work groups to begin work to identify and deploy  
18 commercially viable pathways to zero emissions, and  
19 promote competitiveness along the way. And we look  
20 forward to getting that work done shortly after the plan  
21 is finalized, so thank you very much.

22 CHAIR NICHOLS: Great. Thanks.

23 MR. OKUROWSKI: Chair Nichols and members of the  
24 Board, my name is Peter Okurowski. I'm here with the  
25 Association of American Railroads and also BNSF railway

1 and Union Pacific Railroad.

2           The railroads would also like to thank the staff  
3 from the multiple agencies who prepared the draft  
4 document. We have been a part of the broad coalition that  
5 has been mentioned by members -- sorry, by Mr. Shimoda and  
6 Mr. Schott earlier, and the railroads would like to also  
7 support their comments.

8           Thank you.

9           CHAIR NICHOLS: Great. PMSA.

10           MR. JACOB: Good morning, Madam Chair. Mike  
11 Jacob with Pacific Merchant Shipping Association. We  
12 represent ocean carriers and marine terminal operators and  
13 join the chorus of thanks for staff. We're a member of  
14 the Freight Advisory Committee. We're a member of Dr.  
15 Sperling's freight efficiency work group. We're a member  
16 of the GO-Biz Competitiveness Working Group. There's been  
17 no shortage of potential meetings for stakeholders and  
18 staff. And so we appreciate all of the time and energy  
19 that's gone into that, and again, echo the comments of Mr.  
20 Schott on behalf of the Ports. Represent their tenants.

21           And I think obviously we'll be supporting the  
22 processes moving forward as we have from the very start.  
23 We supported the Executive Order. The important thing  
24 moving toward is that we all recognize that the goals in  
25 the executive order can be mutually exclusive, if they

1 aren't implemented well, but they do not need to be  
2 implemented poorly if we're actually investing the time  
3 and energy and money that's necessary to improve the  
4 system that we're talking about.

5 That's what we're all here to do. I think  
6 the comments you've heard from across the spectrum support  
7 that. Our position moving forward, and our comments on  
8 the plan will reflect the fact that we do need to be  
9 moving forward with those investments.

10 Obviously, the great majority of investments in  
11 the system are private, but public investment is necessary  
12 to move forward and beyond where we are now, if we're to  
13 achieve public goals that go beyond what the system can  
14 accommodate right now.

15 So we look forward to working with you on that,  
16 working with staff on making sure that this is focused on  
17 making those investments, targeting the growth that's  
18 necessary, and achieving the goals that we all have and  
19 share.

20 Thank you.

21 CHAIR NICHOLS: Thanks. Agreed.

22 Mr. Magavern.

23 MR. MAGAVERN: Good morning. Bill Magavern with  
24 the Coalition for Clean Air, and the California Cleaner  
25 Freight Coalition. Also, a member of the California

1 Freight Advisory Committee.

2           And I want to thank this Board and the staff of  
3 ARB and the other agencies for your commitment and the  
4 resources you've devoted to cleaning up the freight  
5 sector. You heard a lot of good information in the  
6 presentations about both the benefits and the impacts of  
7 the freight system. And something I want to emphasize is  
8 that although goods movement benefits all of us, the  
9 burdens are very disproportionately placed.

10           So when somebody in say Omaha gets new shoes, a  
11 child in Wilmington is breathing more diesel exhaust. And  
12 so it's really imperative that we do right by those  
13 communities. And you've heard from a number of their  
14 representatives already this morning.

15           We strongly support the agency's vision of  
16 deploying zero emissions technology wherever that's  
17 feasible. And in the sectors where we don't yet have zero  
18 emission options, using near-zero emissions equipment with  
19 low carbon renewable fuels.

20           To realize that vision is going to take a mix of  
21 regulatory measures, and incentive funding, and sound  
22 transportation planning. We're going to need all of those  
23 tools. So we support a number of regulatory measures that  
24 are proposed in your draft to clean up engines and fuels  
25 with standards like renewable diesel standard, last mile

1 delivery standard, improved inspection and maintenance  
2 programs. And these and other regulatory standards are  
3 essential to transforming the freight sector, and they've  
4 demonstrably worked in the past, both to reduce harmful  
5 pollution and to drive technological innovation.

6 We also recognize it's important to ask the  
7 federal government to do its part by setting a new low NOx  
8 standard for trucks and also Tier 5 standards for  
9 locomotives. That is by far preferable, but we agree that  
10 if the federal government does not act, then California  
11 can and should act on our own.

12 The plan should set enforceable standards for  
13 freight hubs, including the facility cap to make sure that  
14 the communities that house those freight hubs do not have  
15 a disproportionate pollution burden.

16 And the proposal to identify regulatory or  
17 permitting process improvements, we're willing to  
18 participate in that discussion, but if that's code for  
19 reducing community input, or enabling more polluting  
20 projects, then you can be sure that we will stand in  
21 opposition.

22 So in conclusion, we urge the agencies and the  
23 Governor's office to strengthen the draft plan in the ways  
24 we have identified, to finalize and issue it by the July  
25 deadline and to implement it rapidly, because our

1 communities have already waited for too long to have the  
2 air cleaned up.

3 Thank you very much.

4 CHAIR NICHOLS: Thanks.

5 MS. WARD-WALLER: Good morning, Chair and  
6 members. My name is Jeanie Ward-Waller. I'm with the  
7 California Bicycle Coalition. And we're here in  
8 collaboration with the Cleaner Freight Coalition. I  
9 support, you know, everything that's already been said to  
10 you by all of those stakeholders.

11 Similar to Shrayas from Coalition for Clean Air,  
12 we think it's important, because this is a multi-agency  
13 effort for those of us who are really invested in this  
14 plan to show up and give our comments to all the agencies  
15 that are involved.

16 So I was also at the California Transportation  
17 Commission meeting yesterday when this plan was presented  
18 in front of that group. And I just want to say, you know,  
19 the tone of this discussion has been very different from  
20 the tone in that discussion. And I think the folks who  
21 are here representing communities and the interests of the  
22 communities that may be impacted or burden by this plan,  
23 there are many more of those here in front of you today.  
24 And I think they're used to talking to you and maybe not  
25 as much interested in talking to the Transportation

1 Commission. So I just want to note that, and have, you  
2 know, all of the agencies involved be very mindful of, you  
3 know, the types of investments that we're making on the  
4 sort of air quality regulatory side, and the types of  
5 investments we're making on the transportation  
6 infrastructure side and who participates in those  
7 processes, because I think that's very important to the  
8 implementation of this plan, not only, you know, this  
9 process of talking about the plan, but then ultimately the  
10 projects that are funded and implemented and who benefits  
11 or is burdened by those investments.

12 So I think, you know, from the bicycle  
13 perspective, there's certainly a direct role that bicycles  
14 can play in the freight sector in providing short trips in  
15 cities, the sort of short haul connections. And I know  
16 there was a pilot project around cargo bicycles. We would  
17 love to see that move forward in the future, but we're  
18 also very interested in the larger community aspects, not  
19 just air quality, but also the safety issues that -- the  
20 safety issues that the trucking and freight burden on  
21 low-income communities of color. That's another big  
22 issue.

23 And I think, you know, the last comment I want to  
24 make and concern that I have, and I think Bill Magavern  
25 alluded to it as well, but the transportation

1 infrastructure, the freight corridors are not just for  
2 freight, but they are also for single occupancy vehicles,  
3 many of them. I mean, whether we're traveling on highways  
4 and freeways, those are single-occupancy vehicle  
5 infrastructure as well.

6           And so where we may be talking about alleviating  
7 congestion to benefit the freight sector and move trucks  
8 through and improve the efficiency of the freight sector  
9 in those places, we will also be inviting more driving.  
10 And so being mindful of how we're potentially allowing for  
11 an increase in vehicle miles traveled, and how that will  
12 run counter to some of the other State goals that we have  
13 is very important to me.

14           So thank you very much.

15           CHAIR NICHOLS: Just a question. Are you -- and  
16 you -- this would be a perfectly reasonable thing to do,  
17 but are you advocating for segregated freight corridors  
18 then, or is that not an issue? I mean, you're just  
19 assuming that any time there's more freight, there's  
20 also --

21           MS. WARD-WALLER: I think that's one option. I  
22 think another option is potential mitigation that gets  
23 more of the single-occupancy vehicles off the road and  
24 gives people other options, transit, bike and walk types  
25 of facilities could alleviate congestion without having to



1 actually add lanes or separate freight corridors. So I  
2 think we have options there.

3 Thank you.

4 CHAIR NICHOLS: Thanks. Last speaker.

5 MR. SCHUPARRA: Madam Chair, members, Kurt  
6 Schuparra on behalf of the Cal-bio Dairy Cluster down in  
7 Kern County, which is, of course, one of your pilot  
8 projects. And we're glad your -- that we're one of the  
9 pilot projects. We've had some of your staff come down  
10 and tour the facility. And I think that went well, and  
11 there's no -- nothing like seeing for yourself what -- you  
12 know, what's happening on the ground.

13 And I know a lot of time has been put in on the  
14 Sustainable Freight Plan. I remember talking with Cynthia  
15 Marvin about it back when I was a member of the Brown  
16 Administration, and that was a number of years ago. And  
17 so it's been a long time in the making. And like fine  
18 wine, you know, it needs to age a little bit. And, you  
19 know, you'll have time to ponder your options, and now,  
20 you know, you're setting forth.

21 I also want to just say that I appreciated -- we  
22 appreciated your comments Madam Chair before I think it  
23 was the Senate Environmental Quality Committee back in  
24 February about the potential for biomethane. And it's  
25 obviously, as you noted, going to require a lot of

1 investment. But we think that the return on that  
2 investment is really great. And I think that there's been  
3 recent analyses by both the Department of Finance and the  
4 Legislative Analysts that shows the bang for the buck, so  
5 to speak, for GHG reductions and other benefits is really  
6 good.

7 So I just wanted to say that Cal-bio strongly  
8 supports your plan, and we look forward working with you  
9 and other stakeholders as we try to -- you know, when the  
10 rubber hits the road, so to speak.

11 Thank you.

12 CHAIR NICHOLS: Thank you. Okay. That concludes  
13 our list. I understand that the webcasting system has  
14 been up and working now for, I don't know, at least 10 or  
15 15 minutes. So hopefully people were able to catch much  
16 of this.

17 And now, I'll turn to the Board for comments.

18 Mr. Gioia.

19 BOARD MEMBER GIOIA: Thanks to the staff and of  
20 all the agencies and the public who have participated in  
21 this process. It's very important, and it's complex.  
22 It's complicated, but I think we're getting there.

23 And I just want to say, as someone who lives,  
24 works, and represents a community that is a freight hub in  
25 the Richmond area with port and rail, there -- I see

1 there's' is the opportunity to prioritize projects that  
2 will benefit those highly impacted communities.

3           So I wanted to offer also a suggestion. I'm glad  
4 to see that one of the guiding principles, which is on  
5 page eight is reduce or eliminate adverse community  
6 impacts, including air pollution, emissions of particulate  
7 matter and so forth, especially for communities  
8 disproportionately affected by major freight corridors and  
9 facilities.

10           However, I don't see that guiding principle  
11 reflected in the potential criteria for consideration,  
12 which is on pages 14 and 15 of the draft. So there's  
13 eight criteria. The last one -- the last criteria,  
14 investing in sustainable communities, I think should be  
15 expanded or could be separate to investing in highly  
16 impacted communities.

17           So taking the guiding principle that you have on  
18 page eight and turning it also into a criteria for  
19 consideration, because, I mean, clearly, it's -- while  
20 it's discussed throughout the draft, it's not listed as a  
21 very specific criteria.

22           I agree that all these other criteria are great,  
23 including investing in sustainable communities, which are  
24 communities that have adopted those strategies to provide  
25 for higher levels of environmental benefits. So I think

1 you can expand that category, again, however it's done  
2 most effectively to include the highly impacted  
3 communities. That's going to be my suggestion on this  
4 draft, which I think, you know, addresses a lot of issues.  
5 However, clearly having greater quantifiable goals, I  
6 think, is also really important in making those goals as  
7 aggressive as possible is always helpful. So those are my  
8 sort of brief comments right now.

9 CHAIR NICHOLS: Very good.

10 Any other specific comments at this point?

11 Obviously, this is going to be out for a while longer, and  
12 board members are also welcome to submit comments just  
13 like anybody else, if they want to.

14 (Laughter.)

15 CHAIR NICHOLS: Ms. Mitchell.

16 BOARD MEMBER MITCHELL: Thank you.

17 Thank you to staff for all the work on this and  
18 for the collaboration with the other agencies, which is  
19 much needed. So, I think, one of my first concerns is  
20 funding, "Show me the money". But there isn't enough  
21 money. I think we need to keep working on funding  
22 sources. We're going to see an end to Prop 1B. I mean,  
23 that's the end of this year. And what is going to replace  
24 that?

25 That money has been very useful in providing

1 money to our trade corridors. And I think we need to work  
2 on that to find replacement for that for the loss of those  
3 funds. I don't know where it is, but I think we've got  
4 some good State agencies here involved in the Governor's  
5 office, and we should be putting our heads together to  
6 think about that.

7 I think somebody mentioned that we should be  
8 careful that we are tying the infrastructure that we're  
9 building and the planning to emission reductions. One  
10 thing about the money is that it isn't really targeted so  
11 much toward air quality improvement. And so I think  
12 that's something we need to be looking at. What money is  
13 going to go to the actual air quality improvements. I  
14 mean, we have a good plan here to go to zero and near  
15 zero, but let's look at the infrastructure, how it can tie  
16 to emission reductions, and where we get the money to do  
17 that.

18 One of the things that's mentioned in here is the  
19 I-710. And it's been, you know, a project -- it's under  
20 review now for expansion. And it's been a project that  
21 I've been very interested in since it's in South Coast,  
22 and it is the major trade route from the ports to the  
23 downtown area of L.A., and then to the east across the  
24 Rockies and to the rest of the United States.

25 A lot of that goes by train, but an awful lot of

1 it goes by truck. And I-710 is now under consideration  
2 for expansion. One of the alternatives includes a  
3 dedicated freight corridor. And I know many of our  
4 stakeholders here, the EJ community, are very interested  
5 in that. That has been the community's preferred  
6 alternative for this project. And community involvement  
7 is really key, I think, to the EJ -- addressing the EJ  
8 issues.

9           It presents an opportunity now that I think if we  
10 don't take advantage of it, we will sorely regret in the  
11 future that we've lost it. We are on the cusp of some  
12 very innovative technologies that get us to zero and near  
13 zero. And if we have a dedicated freight corridor, we can  
14 provide that only clean vehicles are allowed to use that.  
15 And that will promote the marketing of clean vehicles.

16           You can do that through operational mechanisms,  
17 until we get to zero. But in the South Coast, we now have  
18 a pilot project that is Wayside Power, and we recognize  
19 that the truck trips from the port to the intermodal yards  
20 can be 5,000 truck tips a day. And that's right in the  
21 heart of the EJ communities, in Wilmington and some of the  
22 areas that you've heard from our stakeholders here today.

23           So this pilot project is focused on Wayside Power  
24 for that distance, for that -- and it's a relatively short  
25 distant, bus it's a start, but dedicated freight lanes can

1 get you even further.

2           So, you know, some of this is a little -- maybe a  
3 little bit futuristic, but I think it's on -- it's on our  
4 plates. It's here in front of us.

5           Yesterday, we heard from -- some of us were at  
6 the MECA presentations. What was interesting about that  
7 was that there are now retrofits for diesel trucks that  
8 get us close to 0.02 NOx -- 0.02 NOx. We know that we  
9 have a certified CNG engine, but we're going to see that  
10 happening in diesel trucks as well. So we're getting very  
11 close to those near-zero emission vehicles. And so the  
12 plan that provides for that is a step -- a good step  
13 forward.

14           One of our commenters commented about the mission  
15 statement and it didn't -- it doesn't include communities.  
16 I think that was a very good point, because it includes  
17 industry stakeholders, but some of the more -- most  
18 important stakeholders are community stakeholders, the  
19 people that are living in the areas that are impacted by  
20 freight movement.

21           So I would encourage that we take a look at that.  
22 I wondered about the comment that was made that this plan  
23 targets 100,000 zero emission vehicles, whereas our mobile  
24 source strategy targets 900,000. Maybe staff could  
25 respond on that and why we see that discrepancy?

1 TRANSPORTATION AND TOXICS DIVISION CHIEF MARVIN:

2 So this plan is really focused on all of the air  
3 quality goals, including the localized health risk  
4 reduction. But the 100,000 zero emission vehicles and  
5 equipment is based on a ground-up, where do we think we're  
6 going to be with existing regs, with the roll-outs of  
7 technologies based where they -- based on where they are  
8 today, what is a aggressive but attainable goal for 2030?

9 And I believe the goal was expressed as at least  
10 100,000 vehicles and equipment capable of zero emission  
11 operation. So we would certainly like to reach and  
12 surpass that, which is also complementary with the  
13 emphasis in the SIP and the mobile source strategy on the  
14 low NOx investments to try to get us to the criteria  
15 pollutant targets as efficiently as possible.

16 BOARD MEMBER MITCHELL: I would say that's a very  
17 conservative estimate. And I say that, because when  
18 you're talking about vehicles in the ports, we are talking  
19 about all kinds of vehicles, the yard hustlers -- there  
20 are many kinds of vehicles that would be used in port  
21 operations. So I would just, you know, maybe take another  
22 look at that.

23 We know from the Long Beach container terminal,  
24 which is all electric now, everything, the cranes,  
25 everything on that terminal is all electric. That may be



1 an example to kind of look at and see is the 100,000 the  
2 right target?

3 Thank you.

4 CHAIR NICHOLS: Dr. Balmes.

5 BOARD MEMBER BALMES: Well, again, I want to  
6 thank the staff and all the many stakeholder partners that  
7 have worked with staff on the genesis of the plan that we  
8 have so far. And I wanted to follow Ms. Mitchell, because  
9 I agree with her on several points just to reiterate, and  
10 I'll be quick.

11 So I think it was the Union of Concerned  
12 Scientists which said sustainability doesn't equal equity.  
13 And I really like that point. And so I think that should  
14 be one of the driving -- one of the drivers of our work on  
15 the Sustainable Freight Action Plan.

16 And sort of in follow of that, I would say that I  
17 very much support the concept of a facility cap for  
18 freight hubs. I think that's a way to protect the  
19 surrounding communities. I realize the devil is in the  
20 details and probably some of the folks in management would  
21 shutter at that concept. But I think it's an important  
22 one to consider. You know, we have a cap for greenhouse  
23 gases for the State. The idea of caps can be very  
24 effective at controlling emissions.

25 And I just want to reiterate what everybody in

1 the room knows, the investment required to move this  
2 action plan forward is huge. And, you know, I think we  
3 need to be a voice within the State to -- within the State  
4 administration to make clear to both executive leadership  
5 and the legislature that there has to be money behind  
6 moving forward, whether to make the system efficient or to  
7 make it more helpful, in terms of its impacts on the  
8 population.

9           And I thought Ms. Mitchell's point about Prop 1B  
10 is a good one. You know, we -- I personally think we need  
11 another type of funding mechanism like that to move  
12 forward to really make a difference here.

13           CHAIR NICHOLS: Now, Ms. Takvorian.

14           BOARD MEMBER TAKVORIAN: Thank you very much. I  
15 would add my thanks to everyone who has collaborated so  
16 wonderfully in this process. It's critical and it's  
17 really great to see that.

18           I want to add my voice, I guess, to the many that  
19 have been here today to say that there's really no  
20 comparison in terms of the freight impacts and their  
21 impacts on disadvantaged communities. The impacts are  
22 more than disproportionate. The impacts are almost solely  
23 on environmental justice communities, and so it is our job  
24 to really pay attention to this and to take critical and  
25 ambitious and aggressive action, because these communities

1 are really overwhelmed in so many ways by the freight  
2 operations in their communities from an air quality  
3 perspective as well as from a total quality of life  
4 perspective.

5           Huge, huge operations that really change people's  
6 lives. So I really appreciate the many good things in the  
7 action plan. The emphasis on some of the disproportionate  
8 impacts, including the new regulations, the emphasis on  
9 freight hubs I think is a welcome change. And the freight  
10 handbook we think is something that can be really well  
11 used in local communities.

12           In terms of improvement areas, I think that I  
13 would agree with the multiple comments that have been made  
14 today that public participation is critical and really  
15 should be expanded. And that any permit streamlining that  
16 we would appreciate that in terms of advancing the  
17 technologies and getting them into operation. But if it  
18 dilutes public participation, then we can't move that  
19 forward. Public participation really needs to be upped  
20 and expanded.

21           I also want to say that there has to -- I think  
22 we have to keep our eyes on the prize in terms of zero  
23 emissions. Near zero doesn't work. And if you're looking  
24 at a community that's impacted from multiple sources, near  
25 zero adds up to a lot, and nowhere near zero, when you

1 have communities that are impacted from multiple sources.

2           So zero emissions has to be the goal. We have to  
3 keep our eyes on that, and not create technologies, and  
4 operations that are dependent on near-zero technologies  
5 only to then want to shift. I think it's important for  
6 the industry development, as well as for community health.

7           I would also say that I hope that we can add an  
8 explicit goal to eliminate freight pollution hot spots.  
9 These actions have to emphasize the most impacted  
10 communities in the inclusion of incentives and the  
11 enforcement of the existing regulations.

12           A way to do that would be consistency with  
13 existing community plans that are in place in many local  
14 communities. And I hope that we can add that the project  
15 criteria should be developed to evaluate the impact of  
16 freight projects in EJ communities, including the positive  
17 and negative impacts, such as displacement, which I didn't  
18 see referenced in the plan.

19           We could also include development of mitigation  
20 measure concepts that could be considered with the plan,  
21 if there are approvals that include increased impacts.

22           In terms of enforceable standards for freight  
23 hubs, we hope that these are only included as if -- if  
24 they're cited that they have to be cited properly, and I  
25 am thinking about the land-use handbook of long ago, and

1 hoping that there are distance -- in the freight handbook,  
2 that there are distance requirements, that there's clear  
3 criteria and clear explanation of what, if any,  
4 appropriate siting criteria might be in a community, and  
5 that it's quite explicit in that way.

6           And then -- I think with that, I'll stop there.  
7 Thank you.

8           CHAIR NICHOLS: Okay. Thanks. Obviously, we're  
9 not taking a vote on anything today, but I want to make  
10 sure that Board members have an opportunity to express  
11 concerns and/or questions and give any additional guidance  
12 to the staff.

13           Yes. Dr. Sherriffs.

14           BOARD MEMBER SHERRIFFS: Thank. And as many have  
15 said, thanks to the staff. You know, as the public  
16 comments, in fact, they've been looking for ways to  
17 strengthen the product. So I think that's a great  
18 testament to the work that's been done in terms of public  
19 outreach and involvement of stakeholders.

20           Obviously, this is one of the more complicated  
21 things that this Board has taken on. Lots of moving  
22 pieces. Lots of agencies. A couple of specifics. The  
23 100,000 number has been discussed. And I would just offer  
24 I think I heard a number. We have 15,000 in operation  
25 today. Fifteen years, 100,000, that doesn't seem very

1 aspirational and this is a very aspirational group and  
2 industry and stakeholders. That seems like a very modest  
3 number. So I want to -- I want in the subsequent plan  
4 thinking, are we talking a more difficult class of  
5 vehicles of -- and maybe we should be thinking not just  
6 numbers, but what kind of emissions does that six times  
7 number represent.

8           There's been a focus on the 710 and the Otay  
9 corridors, which I think is very appropriate for many  
10 reasons. Their standing is kind of a proxy and what are  
11 we going to learn for other transportation corridors? I'm  
12 not sure how those will apply or what lessons we will have  
13 for 99 and 5 for the issues that we face in the valley.  
14 So I think it might be worth thinking in the plan a little  
15 bit more about what are we expecting to learn. Is this  
16 really scalable?

17           And I suspect we're probably thinking more in  
18 terms of those corridors that so affect the valley, 99 and  
19 5. Well, this is very dependent on the federal  
20 partnership, in terms of mileage standards, in terms of  
21 getting that low NOx standard for trucks, and, you know,  
22 thinking more about a timeline. If they don't do it, when  
23 are we going to do it, and who are the partners at the  
24 State level that we're going to have to be sure are ready  
25 to act on that, if we don't have action at the Federal

1 level, because that will be critical.

2           It's been mentioned thinking about fleet  
3 turnover. And obviously, the money is going to be very  
4 important in terms of how to promote fleet turnover and  
5 move that forward.

6           Yeah, short term, long term, you know, once again  
7 it's about health. And the short term is so important,  
8 because we are talking about thousands of premature deaths  
9 in the State every year and hundreds in the Central  
10 Valley. So I salute the work everyone has been doing on  
11 this

12           CHAIR NICHOLS: Thanks. Anybody else?

13           Let me just maybe make a couple of concluding  
14 comments then. I think this discussion, as well as the  
15 testimony, really underscores the ambition that it has  
16 taken to get this project launched, and the difficulties  
17 that we have faced and overcome, but the fact that there  
18 are still many more in just reconciling our various  
19 different goals around this one extremely important  
20 economic sector for the State of California.

21           Freight is, as by various estimates, responsible  
22 for a third of the economy of the State of California,  
23 some maybe a little more, a little bit less, taking in all  
24 levels of government and many other industries are  
25 dependent on its success.

1           So we're tackling something very large here. ARB  
2 is in this, because we have to be, because there's no  
3 other way to get a handle on the emissions that are of  
4 concern to us. The other agencies of State government are  
5 in it because they know that our environmental goals can  
6 be implemented in ways that are helpful or can be  
7 detrimental to their goals as well. And to be perfectly  
8 blunt about it, you know, the ARB has regulatory  
9 authority, but it's subject obviously to political  
10 oversight.

11           Other agencies have money, not as much as they  
12 want, but a lot more than we do, which they spend on a  
13 regular basis for projects that relate to freight. And  
14 the fact that they are now at the table and we're talking  
15 about ways in which they can do that in support of  
16 environmental goals is a huge step forward.

17           There are a lot of different -- at least there  
18 are multiple definitions of sustainability that exist out  
19 there. But I was brought to believe that it's a 3E  
20 definition, which means environment, economy, and equity.  
21 And that you don't have sustainability without all three  
22 of those.

23           And if we haven't been explicit enough about that  
24 in our discussions in this draft, we need to make sure  
25 that we insert that, because I think that will help with a



1 lot of the other issues that we're facing, in terms of  
2 balancing the impacts on local communities and the  
3 role that they have played, both as resources for land and  
4 other natural resources that are being utilized in our  
5 freight system, and as places where the impacts have been  
6 the greatest. So we, I think, need to be more explicit  
7 about how that factors into what it is that we're doing.

8           And I think the only other thing I would add is  
9 that it's obvious that State, federal, local, and private  
10 sector resources are all going to have to be brought to  
11 bear in implementing a plan with the kind of ambition that  
12 we're talking about here. So the process that we're in  
13 the middle of now, or really at the front end of now, does  
14 represent the best hope that we have for being able to  
15 mobilize those kinds of resources I think.

16           And I'm very hopeful, based on the comments that  
17 we've heard here today, that even though there are still  
18 many concerns that people would like to see more --  
19 better -- would like to see better addressed, coming from  
20 all stakeholders in the process, that the amount of  
21 support that we have heard here today for the draft and  
22 for the process that we're undertaking is very heartening.

23           So I just want to also echo the thanks to the  
24 staff and to all the people who have taken the time to  
25 come here today, and share their thoughts with us, and

1 hopefully to continue as participants.

2           So thank you all very much. I think we will now  
3 recess for a lunch break, and we'll be back. Can we do  
4 this at 1:00 o'clock with 40 minutes for a lunch break.  
5 We don't have an executive session today. So let's try to  
6 be back here at 1:00 o'clock then for the next item, the  
7 short-lived climate pollutant plan.

8           Thank you.

9           (Off record: 12:18 p.m.)

10           (Thereupon a lunch break was taken.)

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1                   A F T E R N O O N   S E S S I O N

2                   (On record: 1:08 p.m.)

3                   VICE CHAIR BERG: Good afternoon. I'd like to  
4 call us back to order. Sandy Berg, your Vice Chair. Mary  
5 Nichols had a conflict the rest of the afternoon, So I'll  
6 be closing up the meeting today.

7                   Our last item on our agenda today is a  
8 presentation of the proposed short-lived climate pollutant  
9 reduction strategies. The super pollutants, as they're  
10 called, are heat trappings and many times the level of  
11 carbon dioxide, but they also tend to have a shorter  
12 lifetime in the Atmosphere ranging from a few days or  
13 weeks to a few decades. They include methane, black  
14 carbon, and fluorinated gases, including  
15 hydrofluorocarbons, or HFCs.

16                   Senate Bill 605 requires ARB to develop a  
17 strategy to reduce these emissions of these powerful  
18 Pollutants. Actions to reduce emissions of the  
19 short-lived climate pollutants will not only help the  
20 State combat our climate change, but will also improve our  
21 air quality and reduce related health risks,  
22 hospitalizations, and medical expenses.

23                   Governor Brown emphasized the need for addressing  
24 these pollutants by making their reduction over the next  
25 decade one of the five pillars of the State's 2030 climate

1 program development. He also included 215 million in his  
2 proposed 2016-2017 budget to support a range of immediate  
3 actions to reduce emissions of these pollutants.

4 A draft of the strategy was released for public  
5 comment in September of 2015, and a revised proposal was  
6 released last month.

7 I want to note that the Board will not be taking  
8 action on this item today. This is the first of two  
9 hearings. But today, we will hear the presentation and  
10 hear testimony, and then be able to give staff direction.

11 Mr. Corey, will you please introduce this item?

12 EXECUTIVE OFFICER COREY: Yes. Thanks, Vice  
13 Chair Berg. So as you mentioned, SB 605 requires ARB to  
14 develop a strategy to reduce short-lived climate pollutant  
15 emissions in California. And ARB staff developed a  
16 proposed strategy pursuant to SB 605 in coordination with  
17 other State agencies and local air districts.

18 Today, staff's presentation will provide an  
19 overview of the short-lived climate pollutant reduction  
20 strategy. As examples, HFCs, hydrofluorocarbons, are the  
21 fastest growing source of GHG emissions, both globally and  
22 in California. Similarly, current projections indicate  
23 methane emissions will not decline in the absence of  
24 successful control measures. If the ARB does not take  
25 near-term action to stop short-lived climate pollutant

1 emissions growth, it will be increasingly difficult to  
2 maintain and continue the 2020 greenhouse gas emission  
3 reduction goal required in AB 32.

4 Staff released a draft of the short-lived climate  
5 pollutant reduction strategy for public comment last  
6 September. After considering comments received, staff  
7 released a revised proposal in April and held three  
8 workshops to receive public comments on the report.

9 We intend to present a final proposed short-lived  
10 climate pollutant strategy to the Board for approval later  
11 this year.

12 I'll now ask Marcelle Surovik of the Industrial  
13 Strategies Division to begin the staff present.

14 Marcelle.

15 (Thereupon an overhead presentation was  
16 presented as follows.)

17 AIR POLLUTION SPECIALIST SUROVIK: Thank you, Mr.  
18 Corey. And good afternoon, Vice Chair Berg and Board  
19 members.

20 In today's presentation, I will provide an  
21 overview of the proposed short-lived climate pollutant  
22 reduction strategy.

23 --o0o--

24 AIR POLLUTION SPECIALIST SUROVIK: First, I will  
25 provide some background information on short-lived climate

1 pollutants or SLCPs. SLCPs are both powerful climate  
2 forcers and harmful air pollutants. They contribute to  
3 regional ozone and PM2.5. They have lifetimes of days to  
4 a few decades and their global warming potential can be  
5 tens to thousands of times greater than carbon dioxide.  
6 They are responsible for about 40 percent of current  
7 global warming.

8           Short-lived climate pollutants include black  
9 carbon, a component of fine particulate matter, methane,  
10 and fluorinated gases, including hydrofluorocarbons or  
11 HFCs.

12           Strong immediate action now to reduce both CO2  
13 and SLCPs is critical to keep average global warming below  
14 two Degrees Celsius this century. Actions to reduce SLCP  
15 emissions can provide a wide array of climate, health, and  
16 economic benefits throughout the State.

17           As the Governor indicated at the United Nations  
18 Climate Summit in Paris last December, addressing SLCP  
19 emissions is the most immediate challenge and the most  
20 important thing to do in the near term to combat climate  
21 change.

22                           --o0o--

23           AIR POLLUTION SPECIALIST SUROVIK: Over the past  
24 several decades, California's actions to improve air  
25 quality, fight climate change, and protect public health

1 have resulted in significant SLCP emission reductions.  
2 California has cut anthropogenic sources of black carbon  
3 emission by more than 90 percent since the 1960s. From  
4 2000 to 2020, California will have cut black carbon from  
5 mobile sources by 75 percent primarily through the State's  
6 diesel engine and fuel regulations.

7           If the world replicated this success, it would  
8 slow global warming by an estimated 15 percent.  
9 California has the nation's strongest standards for  
10 limiting methane emissions from landfills. It has offset  
11 protocols under its cap-and-trade program to encourage the  
12 reduction of methane emissions, and rules under  
13 development to limit methane leaks from oil and gas  
14 production, processing, and storage, and from the natural  
15 gas pipeline system. Altogether, these measures are  
16 keeping methane emissions from rising in California.

17           The State has HFC regulations in place to reduce  
18 emissions from refrigerants, motor vehicle air  
19 conditioning, and consumer products that together will cut  
20 these emissions by 25 percent in 2020. And California's  
21 actions have been adopted at the national level.

22           But there's opportunity for further reductions in  
23 the State, as well as globally through information  
24 sharing.

25                           --o0o--

1           AIR POLLUTION SPECIALIST SUROVIK: Developing a  
2 short-lived climate pollutant strategy was a recommended  
3 action in the 2014 scoping plan update. SLCP emissions  
4 both impede progress towards climate stabilization and  
5 would put continuing pressure on the statewide GHG  
6 emission limit without further controls. Reducing  
7 emissions of these powerful pollutants is an important  
8 part of fulfilling ARB's AB 32 mandate to maintain and  
9 continue GHG reductions.

10           In the fall of 2014, Senate Bill 605, by Senator  
11 Lara, was signed by the Governor requiring ARB to develop  
12 a strategy, in coordination with other State agencies and  
13 the local air districts, to further reduce SLCPs in the  
14 State.

15           In addition, reducing SLCP emissions is one of  
16 the Governor's pillars that altogether would reduce GHG  
17 emissions in California to 40 percent below 1990 levels by  
18 2030.

19           Staff released a concept in May 2015 and a draft  
20 SLCP strategy in September 2015. Last month, staff  
21 released the proposed SLCP strategy for public comment.

22                           --o0o--

23           AIR POLLUTION SPECIALIST SUROVIK: The proposed  
24 strategy was developed in an open and public process. The  
25 process included extensive stakeholder outreach,



1 coordination with CAPCOA, the air districts, and other  
2 State agencies, consultation with the Environmental  
3 Justice Advisory Committee, as I will discuss further in  
4 the next slide, seven public workshops, and hundreds of  
5 letters received providing input on the strategy.

6 --o0o--

7 AIR POLLUTION SPECIALIST SUROVIK: The EJAC has  
8 had an important role in the development of the SLCP  
9 strategy. As a reminder, the EJAC was established per AB  
10 32 to advise the Board in developing the scoping plan and  
11 any other pertinent matter in implementing AB 32.

12 Staff provided an overview of the draft strategy  
13 at the December EJAC meeting, and held a deep-dive session  
14 in March. In April, the EJAC provided recommendations, a  
15 number of which were incorporated.

16 In addition, several EJAC members participated in  
17 the regional public workshops held earlier this month on  
18 the proposed strategy. Staff will continue to solicit  
19 input from the EJAC as we prepare the final SLCP strategy.

20 --o0o--

21 AIR POLLUTION SPECIALIST SUROVIK: The proposed  
22 strategy sets strong targets for SLCP emission reductions.  
23 Targets are proposed that would reduce black carbon  
24 emissions by 50 percent by 2030 and methane and HFC  
25 emissions by 40 percent by 2030. The targets are

1 translated into million metric tons of CO2 equivalent  
2 using 20 year GWP, which is an appropriate metric for  
3 evaluating emission reduction measures for these  
4 short-lived pollutants.

5           These targets are in line with the Governor's  
6 goal to reduce overall GHG emissions by 40 percent below  
7 1990 levels by 2030. And with what the science is telling  
8 us is needed globally to limit warming below two degrees  
9 Celsius through at yeast 2050.

10           Altogether reaching these targets will provide 94  
11 million metric tons of emission reductions annually by  
12 2030. Using 20 year accounting, these reductions are  
13 about the same as what we are getting under AB 32. This  
14 year, Senator Lara, introduced a bill, SB 1383, which  
15 would codify the targets identified in the proposed  
16 strategy.

17                           --o0o--

18           AIR POLLUTION SPECIALIST SUROVIK: As this slide  
19 shows, black carbon emissions are going down between now  
20 and 2030, primarily from mobile sources, but more can be  
21 done. As black carbon emissions decrease, residential  
22 fireplaces represent a bigger share of the inventory.  
23 Off-road mobile sources will continue to represent a  
24 significant share as well.

25                           --o0o--

1           AIR POLLUTION SPECIALIST SUROVIK: As I mentioned  
2 earlier, ARB has a long history of significantly reducing  
3 PM and thus black carbon emissions. This slide highlights  
4 air district and ARB programs that are helping the State  
5 achieve deep particulate matter and black carbon emission  
6 reductions. These efforts are providing significant  
7 health benefits preventing an estimated 5,000 premature  
8 deaths in the State each year.

9                           --o0o--

10           AIR POLLUTION SPECIALIST SUROVIK: For additional  
11 black carbon reductions, we are focusing on incentive  
12 programs to replace wood-burning fireplaces and stoves  
13 with U.S. EPA certified stoves or gas fireplaces.  
14 Multiple air districts have invested in incentive  
15 programs, but additional funding is necessary for further  
16 emission reductions.

17           To support this effort, the Governor's proposed  
18 budget includes 40 million of cap-and-trade proceeds for  
19 wood stove replacements. Beyond the wood stove measure,  
20 the State will realize additional black carbon reductions  
21 from other planning activities under way to meet air  
22 quality and GHG goals. These include the California  
23 Sustainable Freight Action Plan, which you just heard  
24 about, State implementation plans, and the scoping plan  
25 update.

1                   --o0o--

2                   AIR POLLUTION SPECIALIST SUROVIK: The black  
3 carbon target does not include forest-related sources. In  
4 a given year, wildfires can make up two-thirds of the  
5 State's black carbon emissions. However, these emissions  
6 vary from year to year and include significant  
7 uncertainty.

8                   Wildfire risk, and thus black carbon emissions,  
9 can be reduced by thinning over stocked forests and  
10 improving forest health. However, black carbon is only  
11 one element of the State's forest policy. A holistic  
12 approach is needed.

13                   The U.S. Forest Service has established a  
14 restoration goal of 500,000 acres per year in the State,  
15 including fuels reduction. The forest Climate Action Team  
16 has proposed a goal to match this restoration target for  
17 non-federal forest lands. Meeting this target will  
18 require significant investments. The Governor's proposed  
19 budget includes 150 million to support healthy forests and  
20 resiliency programs.

21                   These investments and others could support market  
22 development of beneficial uses of woody waste. Forest  
23 planning goals and targets will be integrated among the  
24 SLCP, the scoping plan update, and the State's forest  
25 carbon plan.

1                   --o0o--

2                   AIR POLLUTION SPECIALIST SUROVIK: Methane  
3 emissions in the State are projected to stay relatively  
4 constant between now and 2030. Nearly, half the emissions  
5 come from dairy operations, specifically from managing  
6 manure and from enteric emissions, cow burps.

7                   Another 20 percent of emissions come from  
8 landfills. The oil and gas sector makes up roughly 15  
9 percent of the statewide emissions. California's organic  
10 waste streams are responsible for half the State's methane  
11 emissions, and represent a valuable energy and soil  
12 enhancement resource. In order to capture the entire  
13 potential value for this waste resource, significant  
14 amount of infrastructure must be built and markets must be  
15 developed.

16                  In addition, barriers must be removed to putting  
17 this waste to beneficial use. These include siting of new  
18 facilities, interconnection to the pipeline or grid, and  
19 funding mechanisms. The next few slides are specific to  
20 waste related sources.

21                   --o0o--

22                  AIR POLLUTION SPECIALIST SUROVIK: The proposed  
23 strategy sets methane reduction targets for the dairy  
24 industry. Reducing GHG emissions from the dairy sector  
25 has been part of ARB's planning efforts beginning with the

1 2008 scoping plan.

2           The 2014 scoping plan update included an action  
3 to develop recommendations for a dairy methane capture  
4 standard by 2016. The strategy includes targets for  
5 reducing methane from manure management practices, by 20  
6 percent by 2020, 50 percent by 2025, and 75 percent by  
7 2030. Using a 20 year GWP, the emission reductions  
8 expected from meeting the 75 percent target are the same  
9 magnitude as from the full implementation of individual AB  
10 32 programs, such as the Low Carbon Fuel Standard.

11           We are proposing to set a 25 percent enteric  
12 methane reduction target by 2030 for California. This  
13 aligns with the voluntary national goal and with some  
14 promising research on feed additives.

15           More research is needed on the viability of  
16 strategies to reduce enteric emissions and the impacts on  
17 animal production -- animal production, animal and human  
18 health, and the environment. We will continue to monitor  
19 research and work with academia, industry, and other  
20 stakeholders to evaluate enteric measures.

21           Overall, these programs will provide methane  
22 emissions -- will reduce methane emissions from dairies by  
23 about 50 percent by 2030.

24   --o0o--

25           AIR POLLUTION SPECIALIST SUROVIK: Meeting the 75

1 percent manure methane target would require significant  
2 investments in infrastructure, or new management  
3 practices. The Governor's proposed budget includes 35  
4 million to support dairy digester development and 20  
5 million for healthy soils. Research is needed to better  
6 understand GHG emission impacts and co-benefits from  
7 alternative manure management practices.

8 We are proposing to establish a work group with  
9 CDFA, industry, and other stakeholders to address  
10 barriers, such as financing to getting alternative manure  
11 management practices in place at California's dairies. We  
12 also intend to begin a regulatory process next year to  
13 ensure that significant emission reductions are achieved  
14 in the sector.

15 The regulation will be developed in a public  
16 process where we will work with stakeholders in developing  
17 measure details and compliance timelines. Our preliminary  
18 analysis indicates that achieving these reductions in the  
19 dairy sector will be relatively cost effective. We intend  
20 to refine our estimates through the regulatory process.

21 --o0o--

22 AIR POLLUTION SPECIALIST SUROVIK: For landfills,  
23 we're proposing to develop a regulation with CalRecycle by  
24 2018 that would virtually eliminate organics disposal in  
25 landfills by 2025. This measure builds on the 2014

1 Scoping Plan Update which included recommended actions by  
2 2016 to phase out landfilling of organic materials.

3           This goal would include -- this measure would  
4 include goals for recovering organic materials through  
5 local food waste prevention and rescue programs,  
6 specifically 10 percent by 2020 and 20 percent by 2025.  
7 It's been estimated that 40 percent of all food in the  
8 country is wasted. Food rescue programs can intercept  
9 unwanted food before it becomes waste and feed it to  
10 hungry people, reducing food insecurity.

11           Diverting organics would require continuing to  
12 build infrastructure to compost or digest organic waste  
13 that is not addressed in food rescue and recovery  
14 programs. The Governor's proposed budget includes 100  
15 million in cap-and-trade proceeds for waste diversion,  
16 including 60 million to support organics infrastructure  
17 costs and 10 million for food rescue and prevention  
18 programs.

19                           --o0o--

20           AIR POLLUTION SPECIALIST SUROVIK: Many municipal  
21 wastewater treatment facilities in the State have  
22 anaerobic digesters. Organics, including food waste,  
23 could be diverted to the digesters that have excess  
24 capacity. These facilities may have the potential of  
25 taking 75 percent of food waste that is landfilled.



1 Co-digesting organic waste at these facilities could  
2 create useful byproducts, such as renewable fuel and  
3 energy, and soil amendments. We will continue to explore  
4 opportunities for co-digestion at existing facilities.

5 Together, the measures for the wastewater  
6 treatment plants, dairies, and landfills provide a  
7 holistic approach to putting waste to beneficial use.  
8 These sectors share common barriers to beneficial uses, as  
9 I mentioned earlier, that will be addressed through  
10 regulatory processes in sector workgroups.

11 --o0o--

12 AIR POLLUTION SPECIALIST SUROVIK: In the oil and  
13 gas sector, ARB is currently developing a rulemaking to  
14 reduce fugitive and venting emissions from oil and gas  
15 production, processing, and storage.

16 Last week, you U.S. EPA released final rules  
17 setting standards to reduce methane and other air  
18 pollutants in the oil and natural gas industry. ARB's  
19 rule is similar in scope to the EPA rule but goes much  
20 farther by addressing existing sources.

21 The California Public Utilities Commission will  
22 develop a rulemaking by 2017, in consultation with ARB, to  
23 minimize methane leaks from the natural gas pipeline  
24 system per SB 1371.

25 These measures create a comprehensive approach in

1 California to addressing methane emissions in this sector.  
2 Coupled with improved monitoring of methane leaks in the  
3 State, as required by AB 1496, they will help meet the  
4 President's goal of cutting methane emissions from this  
5 sector by 40 to 45 percent by 2025.

6 --o0o--

7 AIR POLLUTION SPECIALIST SUROVIK:

8 Hydrofluorocarbons, or HFCs, are the fastest  
9 growing source of GHG emissions both globally and in  
10 California.

11 HFCs include ozone depleting substances, or ODS,  
12 that are being phased out under the Montreal Protocol.

13 HFC emissions are expected to increase 60 percent  
14 by 2030 as they replace ODS.

15 The majority of HFC emissions come from  
16 commercial refrigeration systems.

17 --o0o--

18 AIR POLLUTION SPECIALIST SUROVIK: It is widely  
19 accepted that the best way to address HFC emissions is a  
20 global phase down of their production and use through  
21 international agreement.

22 If no international HFC supply phase down  
23 agreement is reached under the Montreal Protocol in 2016,  
24 California may develop its own phase down, as several  
25 other jurisdictions have done (such as the EU) or plan to

1 do (such as Canada).

2 In order to accelerate early reductions of HFC  
3 before a global or a State phase down, we're proposing to  
4 set GWP limits and bans where alternative low GWP  
5 refrigerants are available.

6 Specifically, by 2020, we are proposing  
7 prohibiting the sale of new very high GWP refrigerants for  
8 existing systems and the use of high GWP refrigerants in  
9 new equipment.

10 --o0o--

11 AIR POLLUTION SPECIALIST SUROVIK: Implementing  
12 incentive programs now for low GWP refrigeration can  
13 provide immediate and ongoing emission reductions.

14 The Governor's proposed budget includes 20  
15 million in cap-and-trade proceeds to offset the cost of  
16 installing new low GWP refrigeration.

17 This program would focus on incentives for  
18 grocery store refrigeration systems in disadvantaged  
19 communities and could have energy efficiency benefits as  
20 well.

21 --o0o--

22 AIR POLLUTION SPECIALIST SUROVIK: Staff  
23 performed an economic analysis of the major measures in  
24 the strategy. These include converting residential wood  
25 stoves, changing manure management practices, diverting

1 organic waste from landfills to compost and digester  
2 facilities, ARB's oil and gas regulations, and replacing  
3 high GWP refrigerants with low GWP alternatives.

4 --o0o--

5 AIR POLLUTION SPECIALIST SUROVIK: The analysis  
6 included direct cost of the measures, such as new  
7 infrastructure costs at dairies and costs for new compost  
8 and digester facilities.

9 It also included direct benefits, such as cost  
10 savings from more efficient alternative refrigerants and  
11 revenue from marketable products such as renewable fuels.

12 The analysis did not quantify benefits based on  
13 social cost of carbon, reduced air pollution, or reduction  
14 in petroleum dependence. As a result, our analysis does  
15 not monetize the potential full benefits of the strategy.  
16 These benefits will be explored in subsequent rulemakings  
17 to implement the proposed measures.

18 The available suite of emission-reduction options  
19 for the waste sector will require significant up-front  
20 infrastructure investments and reliable funding  
21 mechanisms. The reductions these investments will support  
22 are possibly among the most cost effective out there,  
23 particularly if renewable methane is used for  
24 transportation fuel and generate LCFS and federal  
25 Renewable Fuel Standard credits.

1           The SLCP measures will be included in the  
2 macroeconomic analysis of the 2030 Target Scoping Plan  
3 Update.

4                           --o0o--

5           AIR POLLUTION SPECIALIST SUROVIK: SLCP emissions  
6 contribute to both ozone and PM2.5. Taking a holistic  
7 approach to reducing SLCP emissions can provide systemwide  
8 air quality and water quality benefits, especially in  
9 disadvantaged communities.

10           For example, converting wood stoves can reduce  
11 local PM emissions and build on important air quality and  
12 public health benefits.

13           Capturing methane and converting it to renewable  
14 fuels can displace diesel fuel use and improve air  
15 quality.

16           Changing manure management practices from systems  
17 that use water to flush manure from barns to dry scrape  
18 systems could help to improve nutrient management and  
19 water quality.

20           Diverting organics from landfills can reduce the  
21 need for building new or expanding existing landfills.

22           And food rescue and recovery could provide  
23 communities with better access to healthy foods and reduce  
24 food insecurity.

25                           --o0o--

1           AIR POLLUTION SPECIALIST SUROVIK: A Draft  
2 Environmental Analysis was completed for the Proposed  
3 Strategy.

4           Staff determined that the actions in the Proposed  
5 Strategy may have potentially significant impacts to some  
6 resource areas. However, these impacts are mainly due to  
7 short-term construction-related activities.

8           Staff is committed to working with other State  
9 and local agencies to ensure that any steps taken pursuant  
10 to the Proposed Strategy avoid environmental tradeoffs and  
11 maximize potential environmental benefits.

12           A Draft EA was released for a 45-day comment  
13 period, which will end on May 26th.

14           Staff will prepare written responses to all Draft  
15 EA comments received.

16                                   --o0o--

17           AIR POLLUTION SPECIALIST SUROVIK: On to our next  
18 steps.

19           The comment period on the Draft EA and the  
20 Proposed Strategy ends next week.

21           Next month, ARB, the California Energy  
22 Commission, and the California Public Utilities Commission  
23 will hold a joint agency symposium on methane emissions  
24 from California's natural gas system. The symposium will  
25 help inform several State programs and efforts involving

1 methane.

2           Staff will submit the final SLCP strategy,  
3 written responses to comments received on the Draft EA,  
4 and the Final EA for Board consideration this fall.

5           The SLCP reduction strategy will be integrated  
6 into the 2030 target scoping plan that is currently  
7 underdevelopment.

8           This concludes my presentation.

9           We have representatives from CDFA, Natural  
10 Resources Agency, and CalRecycle who would like to make  
11 comments. These include Secretary Ross from CDFA, Howard  
12 Levenson from CalRecycle, and Russ Henly from Natural  
13 Resources Agency.

14           CDFA SECRETARY ROSS: Karen Ross, and I'm  
15 Secretary of the California Department of Food &  
16 Agriculture.

17           And first I have to offer an apology. Our  
18 science advisor, Dr. \*\*Kunisecera, and Deputy Secretary  
19 Jenny \*\*Lester-Moffitt, who is the policy lead for all of  
20 these subjects, are out of town today, so you're stuck  
21 with me. So I'll do my best. I'll be brief. But trust  
22 me, this will be a very high level overview.

23           My main reason for eagerly accepting the  
24 invitation is because, first, I wanted to acknowledge the  
25 really extensive outreach and great collaboration and

1 communication that we have with your staff. It is just  
2 one of the best relationships we have across all of  
3 government. And this administration in particular has a  
4 hallmark for doing cross-agency collaboration. Obviously  
5 that's going to be necessary for us to be successful in  
6 all of the big challenges that we're facing. So I wanted  
7 you to know that that's been a very positive relationship  
8 and we want to do our part to continue that.

9 I did also want to provide just a little bit of  
10 context. I'm going to speak specifically to the methane  
11 issues and all of the work for dairy.

12 Dairy in this State, like many other crops and  
13 good food products that we produce, is the largest in all  
14 of the country. We've been able to do that because we  
15 have such a marvelous climate that allows us to do the  
16 kinds of things that we do as efficiently as we do. And  
17 that's really a key part of what has made dairy so  
18 successful in the State of California.

19 We have been leaders in helping to move the  
20 efficient productivity of our cows from 4,000 pounds back  
21 in 1900 to 23,000 pounds per cow today. And a lot of that  
22 is because of the technology and the innovation that has  
23 happened here in California. We want to continue doing  
24 that, but I also think it's important to put into context  
25 where our dairy sector is.



1           We have gone through over 20 years of significant  
2 growth in the Cal population because of demand driving  
3 that, because of large scale processing being here in this  
4 State. But the dairy industry has changed a lot. When we  
5 started to grow our dairy sector, most of the milk was  
6 consumed right here within our State's borders as liquid  
7 milk. Well, sales of milk continue to do this; but cheese  
8 and butter and specialty powers for protein, and yogurt of  
9 course, have all grown tremendously. So the outlook for  
10 dairy in the long term is very, very good.

11           But here in this State, our dairy producers have  
12 lost 32 percent in what the value of their milk is in the  
13 last two years. Now, 2014 was a record-breaking year.  
14 2015 was a record-breaking year in the opposite direction.  
15 That's a significant drop in prices. And, in fact,  
16 because of the global situation and having too much milk  
17 in certain continents as well as states east of here that  
18 will go nameless, we're really suffering right now and we  
19 expect it to take at least through the end of this year  
20 and into next year before we get that demand and supply  
21 picture back into place.

22           We do -- and we're strong supporters, and Chair  
23 Nichols and I have talked frequently about this exciting  
24 opportunity that's being presented to us, to really  
25 transform our economy by converting waste to energy and

1 especially waste to low carbon transportation fuels. But  
2 that will not come easily and it will not come cheaply.

3           In this State we have had a real challenge --  
4 although we have almost 2 million cows - and that cow  
5 number is declining - it has been a real challenge to get  
6 digester technology on to the farms. When I got here in  
7 2011, I co-chaired a State/federal work group to really  
8 look at what are the barriers to having more digester  
9 technology in the State.

10           For the record, right now we have 13 digesters.  
11 States like Wisconsin have hundreds of digesters.

12           So we looked at technical barriers, we looked at  
13 regulatory barriers, and we looked at economic and  
14 financial barriers. And out of that three-year process to  
15 map out everything and to identify where the challenges  
16 are, I'm happy to say we're poised to help on the  
17 regulatory barriers part.

18           We now have at EPA a consolidated permit review  
19 process that should help this.

20           But we still need to be sending the market  
21 signals to get the developers who have the technical  
22 expertise to come to California, to work with us, to go  
23 through that permitting process, and to make sure we've  
24 got the best technology on the farms.

25           The other thing is that this is highly technical,

1 complex technology. Dairy farmers want to be dairy  
2 farmers. They don't want to be a mini-public utility of some  
3 kind. And so it's really going to require those  
4 partnerships.

5           And the partnership that we really desperately  
6 need right is a really strong one with the Public  
7 Utilities Commission to make sure that we have a system in  
8 place to make the economic feasibility of these things  
9 much more possible than it is today.

10           So those were some of the highlights I wanted to  
11 put in place for you.

12           I will also just reinforce what your staff has  
13 already said: We do need more research. We have very  
14 ambitious targets in this document. And I'll be the first  
15 one to say that 75 percent reduction by 2030 scares me. I  
16 want us to be realistic, and I want to make sure that we  
17 can achieve it.

18           And we do need more research. If we go from  
19 flush management of manure to dry scrape, we need to be  
20 very certain we know what those cross-media impacts are.  
21 And if we are going to make the kinds of investments --  
22 and if I were a lobbyist, I'd be lobbying for more  
23 investment in digester technology across the street -- we  
24 need to make sure we're going to get return for that.

25           So investing in additional research to make sure

1 we understand that whole picture and the potential of  
2 other cross-media impacts is going to be critical.

3 We also need to take a look at the inventory  
4 methodology and make sure with the efficiency per cow that  
5 we have in the State, that we get those numbers right and  
6 we -- I know this agency is known for its remarkable work  
7 of getting the inventory right. Because if you don't have  
8 the inventory right, nothing else matters.

9 As well as making sure the economic analysis is  
10 as robust as it needs to be for impact as well as the  
11 benefits. We're not only the number one ag state in the  
12 country, and one of the top ones in the world; we just  
13 happen to have the number one ag and environmental college  
14 in the world 20 miles down the road, and there's some  
15 tremendous expertise there that we need to tap into.  
16 We've done some preliminary outreach. We want to be a  
17 convener with you to make sure that we have the best minds  
18 here in the State, many of them who are world experts in  
19 what they do, helping us on this; to make sure that we get  
20 it right; and that we are realistic with the targets that  
21 we're setting here.

22 I appreciate that this will be a very robust  
23 public process. I want you to know that we're committed  
24 to being your partner in this. We're doing this at a  
25 critical time for our dairy sector. We've seen dairymen,

1 long-time dairy families leave the State of California,  
2 and they could continue to do that. We have strategic  
3 advantages here. We want to keep dairy healthy and  
4 thriving in this State, especially when I think about,  
5 it's not just about the cows and what they produce on the  
6 milk side of things. I'm the only Secretary that gets to  
7 talk about dairy waste and cow poop, to be frank with you.

8 (Laughter.)

9 CDFA SECRETARY ROSS: And the exciting  
10 opportunity we have to turn that into something that  
11 really helps us with our renewable energy resources, helps  
12 to reduce short-lived climate pollutants. It's an  
13 exciting time. But we must be careful, and no one knows  
14 that more than the Air Board with the kind of remarkable  
15 work that you've done on so many of our air issues in the  
16 past; and I look forward to being your partner going  
17 forward.

18 So thank you for allowing me to fill in for my  
19 staff today. Thank you.

20 VICE CHAIR BERG: And thank you.

21 We do have a question for you, Secretary Ross.  
22 But before --

23 CDFA SECRETARY ROSS: Now, we're going to see the  
24 thin ice that the staff was --

25 BOARD MEMBER SHERRIFFS: No, no. It's clarifying

1 something you've said.

2 VICE CHAIR BERG: But before he asks the question  
3 I wanted to say thank you very much for taking the time  
4 and personally coming here and testifying and giving us  
5 that great information. So we really do appreciate that.

6 And my colleague will be kind.

7 Doctor.

8 BOARD MEMBER SHERRIFFS: And I'm sure UC  
9 Riverside, Pomona, Fresno State will not be offended by  
10 your reference to that other ag school down the road.

11 (Laughter.)

12 CDFA SECRETARY ROSS: When you have one only 20  
13 miles away.

14 BOARD MEMBER SHERRIFFS: My question. You said  
15 there are hundreds of dairy digesters in --

16 CDFA SECRETARY ROSS: In other states.

17 BOARD MEMBER SHERRIFFS: Okay. You weren't  
18 picking out a single state as --

19 CDFA SECRETARY ROSS: I was not picking out a  
20 single state. But I will comment, I had the great honor  
21 of being chief of staff to U.S. Department of Agriculture  
22 Secretary Tom Vilsack. And when I left to take this  
23 position, the last thing he said to me was: "Get more  
24 dairy digesters. Why do we have them in other states?"  
25 And I tried to explain to him our environmental framework

1 in California and that it wasn't as easy here but it was  
2 always worthwhile getting it done.

3 BOARD MEMBER SHERRIFFS: Okay.

4 VICE CHAIR BERG: Thanks.

5 CALRECYCLE DEPUTY DIRECTOR LEVENSON: Vice Chair  
6 Berg and Board members, good afternoon. I'm Howard  
7 Levenson. I'm Deputy Director of CalRecycle. I get to  
8 follow Secretary Ross; that was pretty inspirational. But  
9 I think what you're doing here today is equally  
10 inspirational and aspirational, and I want to congratulate  
11 you for the work that's been done to date.

12 I'm speaking here on behalf of my Director, Scott  
13 Smithline. I want to convey CalRecycle's support for the  
14 proposals that are contained in the plan that's before you  
15 today.

16 We've been working -- just as Secretary Ross  
17 indicated, we've been working cooperatively and closely  
18 with ARB staff for many years on a lot of different  
19 things. And this goes back really prior to the  
20 development of the first scoping plan in 2008. And that  
21 scoping plan articulated the significance of recycling and  
22 organics waste management in achieving greenhouse gas  
23 emissions. And as we heard in 2014 scoping plan, that was  
24 even emphasized even more.

25 So our cooperative efforts go way back. This

1 effort's been no exception. I want to thank Director  
2 Corey and Ryan and Emily and others for engaging this  
3 early on in this process. And so we're really pleased to  
4 continue that.

5 Of particular significance to CalRecycle is the  
6 call for 90 percent diversion of organics from landfills  
7 by 2025, effectively eliminating disposable organics.  
8 This goal is obviously necessary to reach the Governor's  
9 climate and your own Board's climate goals.

10 And it's equally important for our own goals at  
11 CalRecycle. We have Assembly Bill 341 which was passed a  
12 couple of years ago that establishes a new statewide goal  
13 of getting 75 percent of the solid waste that's going into  
14 landfills out of landfills by 2020, whether that's by  
15 source reduction or composting or anaerobic digestion.

16 Landfills have been relatively cheap, so it's  
17 been easy to get, as it keeps sending materials there. It  
18 is difficult and expensive to influence these other kinds  
19 of options, but that's what we're trying to do by 2020 for  
20 our particular goal.

21 To get anywhere near meeting our 75 percent goal,  
22 organics are key. They really have to be aggressively  
23 diverted from landfills. They make up about 40 percent of  
24 what goes into the landfills right now, and it's a major  
25 source of methane. And half of what's going -- of those



1 organics is food waste. So the emphasis on food waste is  
2 equally important.

3           So the 2025 goal in this short-lived climate plan  
4 of diverting 90 percent of organics from landfills is very  
5 much in line with our own 75 percent goal by 2020. In  
6 fact, our goal is probably a little bit more aggressive,  
7 but both are equally difficult. But we think they're  
8 doable.

9           Just as Secretary Ross alluded to, there are  
10 anaerobic digesters for food waste and other kinds of  
11 organic waste. Hundreds of them in Europe. A few in the  
12 United States. Only a few here in California that are  
13 handling solid waste from landfills at this point.

14           We're -- with the funding that we received in the  
15 first cycle of the cap-and-trade funding a couple years  
16 ago, we were able to fund three new -- five new projects,  
17 two composting and three anaerobic digestion projects, and  
18 are hopeful that the proposal in the Governor's budget  
19 will enable us to fund a lot more.

20           So we do believe this is doable. We know it's  
21 difficult. We're working with a lot of different State  
22 agencies, local agencies, in the private sector to  
23 increase that infrastructure, and also to increase market  
24 demand for compost products for renewable gas; it could  
25 come from transportation fuels; it could come from an

1 anaerobic digester.

2           There are many, many efforts going on across all  
3 those agencies. I just would like to mention a couple.

4           We work closely with ARB staff on many, many  
5 different fronts: On low carbon fuel standard and the  
6 development of the pathway for anaerobic digestion, which  
7 is one of the lowest carbon intensity pathways to date.

8           We're working with -- we're presenting next week,  
9 co-presenting with ARB staff at the CAPCOA meeting to talk  
10 about some of the air quality issues in relation to  
11 organics. So there's a lot of things going on just within  
12 the Air Board.

13           Energy Commission has its Transportation Fuels  
14 Program, and we're linked in with that.

15           And then of course the Department of Food & Ag's  
16 Healthy Soils Initiative; it's another key effort in the  
17 Governor's five pillars, and we're working very closely  
18 with Food & Ag.

19           So we really appreciate what the Air Resources  
20 Board has done. We look forward to the discussions we'll  
21 here today and over the next few months, and hopefully to  
22 adoption of this proposal later in the year. And once  
23 that's done, we are certainly ready to work with ARB staff  
24 and whatever rulemaking is necessary to implement this  
25 aspect of the Short-Lived Climate Plan.

1           So thank you very much for your attention, and we  
2 look forward to hearing more from you.

3           VICE CHAIR BERG: And thank you very much, Deputy  
4 Director Levenson, also for taking your time to come out  
5 and speak to us. And this multi-agency process is  
6 critical in order for us to attain all of our goals, and  
7 we really appreciate your efforts.

8           CALRECYCLE DEPUTY DIRECTOR LEVENSON: Thank you.

9           RESOURCES AGENCY ASSISTANT SECRETARY HENLY: Good  
10 afternoon, Vice Chair Berg, members of the Board. My name  
11 is Russ Henly. I'm the Assistant Secretary of Forest  
12 Resources Management at the California Natural Resources  
13 Agency.

14           My Resources Agency colleague, \*\*Clair \*\*Johns,  
15 could not be here today, but she's worked extensively with  
16 Air Board staff on the Short-Lived Climate Pollutant  
17 Reduction Strategy. And echoing Secretary Ross, we all  
18 very much appreciate the great collaboration we've had  
19 from ARB on this planning as well as the scoping plan work  
20 and everything else we have done with the Air Board staff.

21           The Natural Resources Agency is very involved  
22 with the Forest Climate Action Team on the development of  
23 the Forest Carbon Plan. I believe that the SLCP reduction  
24 strategy provides a very -- does a very good job of  
25 framing out the forestry sector with respect to black

1 carbon issues and emissions.

2 As pointed out in the staff presentation this  
3 afternoon, and further drawn out in the strategy, the  
4 Forest Carbon Plan will be the lead guidance document for  
5 forest and carbon and emissions in California.

6 And in particular, the forest health restoration  
7 and woody materials utilization approach that we're taking  
8 with the Forest Carbon Plan will seek to reduce the black  
9 carbon in other greenhouse gas emissions that occur from  
10 wildland fire as well as from the frequent pile burning of  
11 forest waste that occurs in California's forest lands.

12 This approach too was laid out in the Forest  
13 Carbon Plan concept paper that we released and  
14 work-shopped earlier this year in April. And as we  
15 continue our work on the Forest Carbon Plan, we will be  
16 releasing a draft of that full plan for public review in  
17 August, and looking to complete that report by the end of  
18 year.

19 Our work with the Forest Carbon Plan has included  
20 a very substantial collaboration with ARB staff and  
21 CalEPA, and I think that's going to help to ensure that we  
22 have a seamless fit among the Short-Lived Climate  
23 Pollutant Reduction Strategy, the 2030 Target Scoping Plan  
24 Update, as well as the Forest Carbon Plan.

25 And, again, I just want to emphasize that it's

1 been very positive and very productive working with Air  
2 Resources Board staff, and we look forward to continue  
3 working with them through the Forest Carbon Plan and on  
4 with its implementation.

5 Thank you.

6 VICE CHAIR BERG: Well, thank you very much, Mr.  
7 Henly; and we really appreciate your effort to show us  
8 that these four very important agencies are just really  
9 key to getting this job done. And thank you for your  
10 efforts and for coming today.

11 With that, I think we're ready to jump to public  
12 comment, if that is all right with my fellow Board  
13 members.

14 We have about 40 commenters. And we're going to  
15 have a list up here to my left. And as you see your name  
16 as the person in front of you is testifying, make your way  
17 down so that we can get your comments.

18 We're going to start out today with Larry Greene  
19 if...

20 BOARD MEMBER SPERLING: Vice Chair Berg, could I  
21 ask a question based upon those presentations?

22 VICE CHAIR BERG: Do you want to do that now  
23 rather than waiting till after the commenters?

24 BOARD MEMBER SPERLING: I do, because from  
25 Secretary Ross, I mean we heard just pointed observations

1 that these digesters, two of our main targets, you know,  
2 for dairy and for landfill, that other states have many  
3 more digesters, are doing much more than us; and yet we're  
4 the ones with all these targets and goals and regulations.

5 Can I just get a short response from the staff  
6 why are we doing so much worse than everyone else, since  
7 this is the primary target -- primary targets of this  
8 whole program here?

9 I mean just simple. Is it regulations? Is it  
10 permitting? It's, you know, CEQA. What's the problem?

11 SCIENCE & TECHNOLOGY POLICY ADVISOR McCARTHY:

12 I'll give it a shot. Ryan McCarthy.

13 I think -- so my understanding is, you know,  
14 there's been some changes in the industry and some sort of  
15 significant reshuffling over the last -- historically but  
16 including over the last 15 years. There's certainly -- so  
17 they, you know, have sort of moved locations, reset up  
18 operations, as maybe before we were talking about some of  
19 these goals. Certainly, utility issues. I don't know if  
20 or why they're different than in other places. But I  
21 don't know, just like --

22 BOARD MEMBER SPERLING: All right. Then let me  
23 just suggest --

24 SCIENCE & TECHNOLOGY POLICY ADVISOR McCARTHY:

25 -- that this is clearly the opportunity. There

1 have been some national assessments that show that -- a  
2 tremendous opportunity for dairy digesters in particular  
3 but biogas in general resides in California more than our  
4 share. You know, a third or more of all the estimated  
5 dairy digesters in the country. The potential is here.  
6 The U.S. Department of Ener -- pardon me -- of Ag has  
7 strong goals. They want 500 digesters in ag. And it  
8 seems like the opportunity is really here in California.

9           So if we haven't been able to capture it in the  
10 past, you know, the hope and commitment is to really  
11 capture that opportunity in the future.

12           BOARD MEMBER SPERLING: Okay. Let's just focus  
13 on those questions this afternoon and going forward,  
14 because it's nice to have all these reports and numbers,  
15 but let's understand why it's not happening. Maybe we'll  
16 hear that from testimony.

17           VICE CHAIR BERG: And Supervisor Serna.

18           BOARD MEMBER SERNA: Thank you, Vice Chair Berg.

19           I really appreciate Professor Sperling's  
20 question. And wearing my local government hat as a county  
21 supervisor here in Sacramento, we're currently dealing  
22 with our first vanguard effort at making feasible  
23 biodigestion activity mainly as it relates to food waste.  
24 And one of the things that wasn't emphasized -- I didn't  
25 hear emphasized but may partially respond to your great

1 inquiry is the fact that the ability to be successful  
2 isn't just -- doesn't just rest at the feet of the  
3 operators. It also rests with those that have to provide  
4 the feedstock. And when you don't have the infrastructure  
5 in place throughout a community, whether it be a city, a  
6 county, a state, to have the kind of delivery of feedstock  
7 that is necessary for these operators to become -- for it  
8 to be feasible in the first place, I think therein lies a  
9 large part of the issue. That's what I'm hearing here in  
10 Sacramento from our -- from our one operator, who hopes to  
11 go from currently 40 tons to 100 tons, and tells us at the  
12 air quality management district, those of us that also sit  
13 on the local regional sanitation district - because there  
14 are some wastewater implications for these types of  
15 operations as well - that there is a threshold passed  
16 which things become relatively less complicated. And what  
17 I understand is we're -- here -- at least here in  
18 Sacramento we're not anywhere near that. And that  
19 requires the cooperation and the ability for especially  
20 restaurants to -- restaurant owners and operators to be  
21 able to understand the landscape of what they're expected  
22 to do to help provide that feedstock.

23           So I just wanted to add that.

24           VICE CHAIR BERG: So as we can see, we're going  
25 to have some great discussion here. And so let's get to



1 our list of public testimony. And also we'll have some --  
2 when some of the dairy people come up, it will be also  
3 good follow-up.

4 Hi, Mr. Greene.

5 MR. GREENE: Good afternoon. Vice Chair Berg and  
6 members of the Board, I'm Larry Greene. I'm the air  
7 director at Sac Metro Air Quality Management District.

8 I just would like to express my district's and  
9 our board's strong support for this effort. This is  
10 important in so many ways. As I look across the list of  
11 programs that were discussed during the presentation,  
12 there are many points of contact for current programs and  
13 for future programs, and we already have significant work  
14 underway between ourselves and the Air Resources Board  
15 staff in making all those programs happen. And it's been  
16 a good cooperative effort. I think we've made huge  
17 progress, and there's much to go. And these programs are  
18 going to be very important in reducing air pollution and  
19 the exposure of our citizens in Sacramento as we move  
20 forward. Lots of potential here, not only on greenhouse  
21 gases but for criteria pollutants. So we very much  
22 appreciate this, and we look forward to continued strong  
23 support of working together with the Air Resources Board.

24 VICE CHAIR BERG: And thank you for all your  
25 efforts as well.

1 BOARD MEMBER GIOIA: Vice Chair Berg, can I just  
2 follow up to Mr. Greene on Supervisor Serna's comments.

3 So what role do you see local air districts  
4 having in addressing some of the issues that Supervisor  
5 Serna raised?

6 MR. GREENE: We have been very involved, as  
7 Supervisor Serna knows in his office on a number of  
8 occasions, trying to integrate between our needs at the  
9 air district the programs we have and other agencies that  
10 look at odors, impacts to local neighbors, trying to  
11 figure out how we divert food waste, how we work with the  
12 county; and are meeting with our county waste management  
13 folks here next week to try to further this discussion.

14 One school equals five restaurants. Schools are  
15 very wasteful for food; because the kids don't eat the  
16 food, right. Restaurants are very good at not wasting  
17 food. So how -- and we have 200 schools in Sacramento.

18 BOARD MEMBER SERNA: They're good restaurants.

19 (Laughter.)

20 MR. GREENE: So how do we get those 200 schools  
21 into a system where we can get that food waste in a manner  
22 that can be effectively transported to the digester. And  
23 there are 20 or 30 different streams of that same  
24 conversation.

25 So it's a very complex. And we're in the middle

1 of the conversation, but it's going to be a multi-agency  
2 effort.

3 I hope that answered the question.

4 BOARD MEMBER SPERLING: Yes.

5 BOARD MEMBER GIOIA: Yes, it did.

6 MR. LAPIS: Hi. Good afternoon. Nick Lapis with  
7 the environment group Californians Against Waste.

8 Following up on the conversation you're having  
9 now. We're in strong support of the goals you're  
10 proposing in the SLCP plan. And specifically we're  
11 supporting of the commitment to adopt strategies to phase  
12 down the disposal of organic waste.

13 As a state, we have spent considerable amount of  
14 time debating back and forth about what the exact  
15 emissions are from landfills; and I think you might get a  
16 little more of that today. Some advocates say 80 percent  
17 of landfill methane is never captured. Some industry  
18 folks say that 90 percent is captured. CalRecycle came up  
19 with a 62 percent number. I think the ARB released a 74  
20 percent number a couple weeks ago.

21 What we do know is that no gas collection system  
22 can capture emissions before installed or for the decades  
23 after it is removed. And paraphrasing Director Smithline,  
24 the emissions from landfills are fortunately much easier  
25 to reduce than they are to measure.

1           To that point, we know that diverting organic  
2 waste accomplishes more than avoiding the emissions at  
3 landfills. These materials in landfills represent an  
4 opportunity cost for the rest of our economy. When  
5 managed outside landfills, these same organic materials  
6 can be made into a valuable soil amendment that sequesters  
7 carbon, increases soil water holding capacity, and reduces  
8 the need for and impacts of synthetic fertilizers.

9           Most private composters tell us that they sell  
10 out of every ounce of compost that they make at their  
11 facilities.

12           Additionally, you can divert this material to  
13 digesters to make valuable biogas to fuel vehicles or  
14 generate renewable energy.

15           And a significant proportion of the food that we  
16 throw away every single year is perfectly edible and could  
17 be diverted to feed those who are food insecure.

18           To the discussion that was just had, I would just  
19 say we're not reinventing the wheel at this agency or in  
20 Sacramento. There are a lot of communities that have  
21 implemented comprehensive organics programs, both in  
22 California and around the country and round the world. In  
23 fact, 23 states have some form of prohibition on the  
24 disposal of organic waste. Most of Europe prohibits the  
25 disposal of organic waste. And all over California,

1 especially all over the Bay Area, there are communities  
2 that have great programs that are perfect models for the  
3 rest of us around the State.

4           Establishing mandatory organics programs has been  
5 proven time and time again to spur the development of  
6 processing and recycling infrastructure; because  
7 composters and digester companies can compete with each  
8 other for this material as opposed to competing with  
9 artificially low landfill tip fees.

10           That said, to ensure cost-effective  
11 implementation of this plan, the ARB and CalRecycle and  
12 the State as a whole will need to play an active role in  
13 the development of these facilities. And we are pleased  
14 to see the focus on infrastructure development in both  
15 this document and the investment plan.

16           It also makes sense to partner with our local  
17 organizations and local agencies to discuss what else we  
18 can do to incentivize these facilities.

19           And, finally, we'll be submitting detailed  
20 comments. But if I could leave you with one thing, it's  
21 again a recommendation to spend some time with the  
22 communities in the Bay Area that have implemented these  
23 programs to see what works, what doesn't work, how to get  
24 that material from the schools and the restaurants to the  
25 digesters and the composting facilities.

1 Thank you.

2 VICE CHAIR BERG: Thank you.

3 MR. NOYES: Good afternoon, Vice Chair Berg,  
4 members of the Board. My name's Graham Noyes. I'm an  
5 attorney at Keys, Fox & Wiedman, speaking here today on  
6 behalf of my client, Sierra Energy.

7 Sierra Energy is an energy and fuel company based  
8 in Davis, California, that's doing amazing things with  
9 municipal solid wastes. They have a gasification process  
10 called the FastOx Gasifier, that takes municipal solid  
11 wastes and many very difficult to handle waste streams,  
12 gasifies that, and can convert that both to  
13 Fischer-Tropsch diesel fuel, so a liquid diesel fuel; they  
14 also have a DOE grant to go into hydrogen with that  
15 material. And they're currently developing a facility at  
16 the Fort Hunter Liggett Army Garrison in Monterey County  
17 that's going to take about 10 tons a day of the basis  
18 municipal solid waste, gasify it through a CEC grant.  
19 They're going to be making Fischer-Tropsch diesel fuel.  
20 And as I mentioned, they're also going to be going into  
21 hydrogen with that.

22 We have already submitted written comments, so  
23 I'm going to be very brief with you here today, to focus  
24 on two things:

25 Overall, we strongly support the Short-Lived

1 Climate Pollutant Plan. We applaud the efforts of staff.  
2 We've been engaged for about the past year on this  
3 providing this -- Sierra Energy's perspective on the plan  
4 and the opportunities here, and essentially looking at  
5 opportunities beyond just anaerobic digestion and organics  
6 diversion, which are great things to do but still leaves  
7 most of the waste going into the landfill, much of it  
8 being contaminated organics and other material that has  
9 this energy and fuel value.

10           And so where we see the immediate opportunities  
11 to sort of put this plan into action are actually in two  
12 separate places, things that other agencies are working  
13 on.

14           First of all with CalRecycle, you may be aware  
15 they have the AB 901 proceeding going on now, which is  
16 going to categorize the various waste streams, build out a  
17 much more robust system of following waste through the  
18 overall process, so to speak. That's an opportunity where  
19 we see a separate category for waste to fuels ought to be  
20 recognized so that we can see the effectiveness level  
21 around waste-to-fuels diversion. So we want to highlight  
22 that in this proceeding.

23           Second factor is taking this 20-year GWP that's  
24 used in this Short-Lived Climate Pollutant Plan and  
25 rolling that out in the Greenhouse Gas Reduction Fund

1 methodologies that measure effectiveness of grant spending  
2 out there. As everyone knows, how we spend money matters  
3 a lot. How we measure success in those programs matters a  
4 lot as well. So we'd recommend these two as immediate  
5 opportunities.

6 That's my time for Sierra Energy.

7 I have in the past represented some developers of  
8 anaerobic digesters and would be glad to just provide a  
9 minute on that perspective of the challenges to California  
10 if you would like to hear that.

11 VICE CHAIR BERG: Yes, one minute.

12 MR. NOYES: So in terms of California, these are  
13 specifically companies looking at anaerobic digestion and  
14 going into the highest value opportunity, which is low  
15 carbon fuels and particularly the biogas sector.  
16 Something I'm sure you'll hear about today that's an  
17 enormous barrier is the inability to get on to the  
18 pipeline system, so you can't get that highest revenue  
19 level that you can out there. You also see in states like  
20 Washington and Iowa and Wisconsin a streamline process for  
21 addressing all of the individual issues like CEQA and  
22 water quality and air quality, which are each individual  
23 challenges. So they're all really nuts-and-bolts  
24 development challenges, permits all those little pieces  
25 that add up to lots of development dollars and make it



1 harder to do here.

2 VICE CHAIR BERG: Thank you very much for that.

3 MR. NOYES: Thank you.

4 MR. MACY: Good afternoon, Air Board members.

5 I'm Jack Macy, Zero Waste Senior Coordinator for the City  
6 and County of San Francisco Department of the Environment.

7 I am here to express our strong support for the  
8 proposed banning of organics in landfills, to reduce  
9 methane emissions, and provide higher value uses for  
10 organics, with multiple co-benefits for the climate and  
11 for the economy.

12 We applaud your staff for this critically needed  
13 and bold plan to move organics out and being --  
14 identifying the challenges and providing strategies to  
15 address them.

16 San Francisco in partnership with the Recology  
17 Companies has been implementing composting programs for  
18 food scraps for 20 years, and even longer for other  
19 organics recycling programs such as edible food recovery  
20 supporting that sector, and pleased to see that as well.

21 San Francisco has in effect banned organics from  
22 landfill. Since 2009 we've mandated the separation of  
23 food scraps and other organics from our trash landfill  
24 stream for all sectors across the city. And as a result  
25 of implementing mandatory with associated financial

1 penalties and the assistance we provide, we now have over  
2 99 percent of all our properties in the city that are  
3 composting service compliant. That includes the 350,000  
4 households, including about 9,000 apartment buildings and  
5 90,000 businesses and institutions across the city.

6           So we are showing that you can get after these  
7 organics and capture them. And this is resulting in  
8 significant gains. When we did mandatory, we really saw a  
9 big jump. We were having a sort of a slow increase over  
10 the years. We implemented mandatory and it just shot up.  
11 And so having that key policy driver has made a  
12 significant difference and we continue to see the growth  
13 in that.

14           With compost, at two regional composting  
15 facilities being made at a high value nutrient soil  
16 amendment, feeding hundreds of vineyards and farms that  
17 are demonstrating that they are able to reduce or  
18 eliminate the use of energy-intensive pesticides and  
19 fertilizer, reduce irrigation, and sequester carbon, build  
20 healthier soils and healthier plants. And basically these  
21 programs are largely achieving what is being set out here.

22           So composting programs provide a triple win for  
23 the climate. We're preventing methane emissions from the  
24 landfill, they promote soil health and increase the soil  
25 carbon sequestration, and they decrease the need for water

1 and synthetic fertilizers. We've seen that once you're  
2 producing a consistent quality product, the market demand  
3 exceeds what you can produce for that.

4           So I just wanted to say that there's many social  
5 benefits from this, with increased jobs throughout the  
6 supply chain. And our climate action strategy is  
7 incorporating this as a key component. And we thank you  
8 for this vision and the proposed funding investment that  
9 is an important piece of it. And we're helping to share  
10 our experience to help move this along.

11           Thank you.

12           VICE CHAIR BERG: Thank you.

13           BOARD MEMBER TAKVORIAN: Vice Chair, may I ask a  
14 quick question?

15           VICE CHAIR BERG: Yes.

16           Mr. Macy.

17           BOARD MEMBER TAKVORIAN: Mr. Macy, I just  
18 wondered if your program is mandatory for schools and  
19 restaurants as well?

20           MR. MACY: That's correct. It is for all  
21 properties -- it's for everybody in San Francisco.

22           BOARD MEMBER TAKVORIAN: Thank you.

23           MS. LUPIEN: Good afternoon, Vice Chair Berg,  
24 members of the Board. My name is Sandra Lupien. I live  
25 in Oakland where I work for the organization Food & Water

1 Watch. We're an advocacy organization with 170,000  
2 supporters here in California. And I want to start by  
3 thanking you for your work, staff, Board, and  
4 stakeholders, on the Short-Lived Climate Pollutants  
5 Reduction Strategy. It's a heavy lift and it's urgent  
6 work, and I think we all agree we need to get it done.

7           So I'd like to begin by applauding the Air  
8 Resources Board's to move to make California the first  
9 state, I believe, to require dairies to reduce their  
10 manure methane emissions. Huge important step mandating  
11 such reductions is critical toward making polluters  
12 accountable for protecting the climate and the health of  
13 Californians. So thank you so much for that.

14           And we also hope that you will make enteric  
15 emissions reductions mandatory as well in time in this  
16 plan.

17           However, we are very concerned about the heavy  
18 reliance of the strategy on the use of methane digesters,  
19 which I think is going to be a point of controversy today.  
20 We believe, and so do some of our colleagues who are here  
21 today, that they're not an effective long-term solution to  
22 methane emissions from factory dairies. We believe the  
23 technology's expensive and it frequently results in leaked  
24 methane as well as other greenhouse gases like carbon  
25 dioxide, nitrogen oxide, and those cause smog and public

1 health issues like asthma.

2           Furthermore, methane digesters fail to address  
3 the root cause of methane pollution from factory dairies,  
4 which is of course too many animals producing an  
5 unmanageable amount of manure-based and enteric methane.

6           So if the Air Board moves toward implementing the  
7 strategy next year, we hope it will eliminate or reduce  
8 digesters as an approach to reducing methane; and instead  
9 work collaboratively with appropriate State agencies to  
10 craft policies that reduce methane emissions by promoting  
11 sustainable dairy operations in California that emphasize  
12 pasture-based methods as well as appropriate herd sizes.

13           And, finally, we are pleased that the -- that by  
14 mandating methane reductions from factory farms, the  
15 strategy would if implemented ensure that such reductions  
16 are truly additional by eliminating new projects from  
17 eligibility as offsets to be sold in the State's  
18 cap-and-trade market.

19           And in order to ensure that the strategy achieves  
20 its targets, we urge the Air Board to also remove existing  
21 projects from the State's Cap-and-Trade Program instead of  
22 allowing them to generate offsets for up to 10 years of  
23 operation. And, likewise, we don't support any generation  
24 of Low Carbon Fuel Standard credits for any of these  
25 projects.

1           So we thank you for the opportunity to weigh in  
2 on the Short-Lived Climate Pollution Reduction Strategy.  
3 And once the strategy is finalized, we look forward to  
4 working with you to develop and implement a regulation  
5 that will achieve the targets for methane reductions from  
6 dairies while protecting communities and public health in  
7 California.

8           Thank you.

9           VICE CHAIR BERG: Thank you.

10           MS. LEVIN: Good afternoon. Julia Levin with the  
11 Bioenergy Energy Association of California. We represent  
12 more than 50 public agencies and private companies in  
13 California that are working to convert organic waste to  
14 energy.

15           We thank you, thank the Air Board and the staff  
16 for your leadership in this area, and we strongly support  
17 the goals of the strategy - they are challenging goals,  
18 appropriate given the urgency of reducing short-lived  
19 climate pollutants - and all of the co-benefits, which I  
20 think there haven't been enough discussion of today.

21           But to meet those goal it's really going to take  
22 several very important steps.

23           And, Dr. Sperling, to your question, I would take  
24 issue with your framing dairy issue as the primary  
25 strategy, because actually the single largest source of

1 short-lived climate pollutants is black carbon from  
2 wildfire. And I think that kind of highlights the fact  
3 that the strategy doesn't include a goal for black carbon,  
4 and so there is this perception that we just need to focus  
5 on dairy methane. And I think we need to set a goal for  
6 black carbon. The fact that it varies from year to year  
7 is not an excuse for not setting at least a decadal goal  
8 or some sort of a goal over time, in part because  
9 maintaining the carbon sequestration in our forests is a  
10 critical part of achieving our AB 32 goals.

11 In all of the organic waste sector, whether it's  
12 dairy waste, diverted urban organic waste, or forest  
13 waste, there are really three things that we need to  
14 answer your question.

15 We need a guaranteed market for the biogas. That  
16 has been a huge problem for the industry across all  
17 sectors. And the draw strategy actually recognizes that  
18 and said that we need a statewide policy to promote  
19 biogas. Senator Allen has introduced SB 1043 that would  
20 require the Air Board to do just that, so that we have a  
21 market for the biogas, which is a critical leg of a  
22 three-legged stool. Much like we have an RPS in the  
23 electricity sector or we have the LCFS in the fuel sector,  
24 we need that in the gas sector now.

25 The second leg of the stool is investment. It is

1 going to take a massive amount of public as well as  
2 private investment to make these very significant and  
3 important transitions across all organic waste sectors.

4           We strongly support the Governor's proposed  
5 budget items for cap-and-trade revenues to support  
6 bioenergy. But how those are spent is going to be  
7 critical. And pointing to the Air Board in particular,  
8 you spent a lot of time this morning discussing the  
9 sustainable freight strategy. That's part of a \$500  
10 million proposal from the Governor for low carbon  
11 transportation, and yet only a tiny, tiny fraction of that  
12 right now is planned to go to low carbon transportation  
13 that reduces short-lived climate pollutants. That should  
14 be a filter over every investment that this Board makes.  
15 It shouldn't just be a small item off to the side in a  
16 \$500 million fund to reduce carbon from transportation.  
17 The best way to do that is ultra-low NOx trucks that  
18 replace heavy-duty diesel trucks and run on  
19 carbon-negative biogas made from organic waste that  
20 reduces carbon in short-lived climate pollutants every  
21 step of the way.

22           The third leg of the stool is removing regulatory  
23 barriers. And the strategy correctly points to a number  
24 of important ways to do that so we can put biogas in the  
25 pipeline and on the electricity lines. We are working



1 with this Board and the PUC to do that.

2 Thank you very much, and we look forward to  
3 implementing this together.

4 VICE CHAIR BERG: Thank you.

5 MR. HELGET: Chair Berg and members of the Board.  
6 I am Chuck Helget and representing Republic Services.

7 Julia is such a hard act to follow. I'll try to  
8 do my best here.

9 Thank you for letting us, by the way, do the  
10 group testimony. We've tried to organize our comments so  
11 that we avoid redundancy.

12 I'm going to be followed by Mary Pitto and Frank  
13 Caponi and Jason Rhine from the League of Cities; so  
14 they'll be taking different pieces of our group comments.

15 As a group we have supported legislation and  
16 regulatory action to divert organics from landfills, and  
17 we will continue to do so. Therefore there is much in the  
18 Short-Lived Climate Pollutant Strategy that we -- and in  
19 the economic analysis that we do support. We believe that  
20 both documents once refined can actually provide a  
21 framework for working and helping us achieve the  
22 short-lived climate pollutant's 2030 waste sector goal of  
23 reducing methane by 5 million metric tons of CO<sub>2</sub>e.

24 We believe that local government, the solid waste  
25 industry, and State government have a history of

1 developing effective market-based solutions for diversion  
2 programs, including organics diversion. And those  
3 programs have been and continue to be an important  
4 component of the waste sector's GHG reduction strategy.

5 Recently implemented programs such as mandatory  
6 commercial recycling and mandatory commercial organics  
7 recycling are aggressive; and our analysis show that they  
8 can effectively reduce methane emissions without organics  
9 ban. Both programs have strict but achievable targets.  
10 They have effective milestones that will ensure targets  
11 are monitored and enforcement mechanisms that will help  
12 ensure that we're working in good faith to achieve your  
13 methane reduction goals.

14 While we do not disagree with the 2030 targets  
15 for the solid waste sector, we do disagree with the timing  
16 set forth in the strategy and the very stringent  
17 requirement that the waste sector effectively eliminate  
18 organics disposal by 2025. Doing so would require that we  
19 nearly triple our organics food and green waste processing  
20 capacity, compost facilities, anaerobic digestion  
21 capacity, and markets in under a seven-year period.

22 It has taken us 20 years to develop and build the  
23 current capacity of roughly 180 compost and AD facilities.  
24 Just building an additional 100 facilities under current  
25 CEQA requirements in air quality regulations will require

1 unprecedented cooperation from both industry, the State,  
2 and local regulators.

3           Finally, the economic analysis is based on  
4 several key assumptions. It assumes that facilities can  
5 be built without a significant impact on rates, and the  
6 GGR funding on the front end and LCF and RIN credits on  
7 the back end will offset costs. We do disagree with those  
8 assumptions since historically when we have added  
9 recycling programs and recycling infrastructure, funding  
10 came primarily through rate increases negotiated with our  
11 local governments.

12           Those rate increases take time and normally have  
13 been added to the garbage rate, leaving the assumption  
14 that recycling services are free. Unfortunately increased  
15 organics recycling will not be free.

16           We will be submitting written comments and we  
17 will be providing additional comments to your staff, and  
18 we look forward to working with them on some of these  
19 concerns.

20           Thank you.

21           MS. PITTO: Good afternoon, Vice Chair Berg and  
22 Board members. I am Mary Pitto with the Rural County  
23 Representatives of California, which represents 35 of our  
24 rural counties. I'm also here speaking on behalf of the  
25 California State Association of Counties that represents

1 all of California counties.

2 I'm going to address the current organics  
3 diversion requirements and then some facility siting and  
4 permitting concerns.

5 Mr. Helget referred to the solid waste industry  
6 group supporting organics diversions requirements. A  
7 coalition of both public and private sector solid waste  
8 industry representatives worked for several years on  
9 some -- to help craft some legislation dealing with  
10 organic waste diversion.

11 AB 1826 by Assemblyman Chesbro was enacted in  
12 2014. This statute mandates commercial organics  
13 diversions that will be phased in over time to construct  
14 the extra infrastructure necessary to handle the  
15 additional organics that will be diverted. Its  
16 implementation just began in April of this year, and with  
17 the requirements for those businesses generating the most  
18 organics waste. And then next year, we'll go down to a  
19 smaller amount. And then finally in 2019 with its final  
20 implementation we'll go down to the smaller amount -- the  
21 smallest amount of this legislation to be diverted.

22 CalRecycle estimated that we would need 100  
23 new -- 100 new or expanded either AD or composting  
24 facilities to accommodate this extra diversion. The draft  
25 strategy totally passed up the AB 1826 and then set a new

1 goal for 2020 at 75 percent instead of 50 percent, and  
2 then 90 percent by 2025.

3 We appreciate ARB staff meeting with us and  
4 listening to our concerns. And while the proposed  
5 strategy has eliminated the 75 percent diversion goal in  
6 2020, it maintains the 90 percent diversion goal in 2025.

7 We appreciate this flexibility very much but we  
8 still believe that it is not sufficient to overcome the  
9 challenges that exist in providing the infrastructure  
10 necessary to meet the 90 percent diversion.

11 These are complex and complicated projects.  
12 While we don't deny some projects can be accomplished  
13 quicker, there's still individual site-specific,  
14 feedstock-specific taking generally five to 10 years to  
15 get them permitted, constructed, and operational. Just to  
16 give you one example from a member county, Glenn County  
17 was first approached by a developer in 2009 to build a  
18 mixed -- wow.

19 (Laughter.)

20 VICE CHAIR BERG: It does go fast.

21 I will give you a one-sentence wrap-up if you can  
22 please.

23 MS. PITTO: Well, they just were -- they started  
24 in 2009. They submitted a completed application in 2013.  
25 It went to their board because it was appealed in December

1 of 2015. It went their board in March. And it is now  
2 expected to be litigated. And they were given a  
3 six-months extension to provide additional environmental  
4 information. And they do expect litigation of this  
5 project.

6 And we look forward to continue working with ARB  
7 staff into the future to have a successful and efficient  
8 project.

9 Thank you.

10 VICE CHAIR BERG: Thank you.

11 MR. RHINE: Hello. Good afternoon, Madam Vice  
12 Chair and members. Jason Rhine, League of California  
13 Cities. Thank you very much for allowing us to speak.  
14 And I'm going do my best to not repeat some of the things  
15 that have already been mentioned, but I do want to  
16 emphasize a couple things, you know.

17 One, I think the League and -- of Cities and, you  
18 know, our coalition, we have a long track record of  
19 working with both the Air Board and CalRecycle and the  
20 legislature on these important issues to get organics out  
21 of our landfills.

22 We certainly are supportive of the goals and  
23 objectives that are outlined in your report. We think  
24 that the timeline is a bit tight and will be very  
25 difficult I think for us to meet it. However, we're not

1 saying no. And we certainly want to be partners and want  
2 to continue to work on this issue. I mean, get those  
3 organics out of landfill.

4 We at local government, we're not wed to the idea  
5 of putting organics into a landfill. I mean, we want to  
6 put it to its best and highest use. If there's a better  
7 place to put it, if there's infrastructure in place for us  
8 to take it to, we certainly would rather take it there. I  
9 mean, it makes a lot of sense to do that.

10 To touch on some of the infrastructure that's  
11 needed: Mr. Helget mentioned the number of facilities  
12 that are currently available. We have about 13 digesters  
13 and about 169 existing compost facilities where we can  
14 take this material. That amount of infrastructure is  
15 completely inadequate if we are going to meet the goals  
16 and objectives in the report. We're going to need to  
17 triple that infrastructure. And by tripling an  
18 infrastructure, we're going to have to do siting at the  
19 local level, we're going to have to do CEQA, we're going  
20 to have to, you know, go through the zoning process. I  
21 mean, it's going to be a big deal.

22 It's not insurmountable, but it is a process.  
23 And we want to make sure we honor that public process  
24 before our city councils and we want to make sure the  
25 public is heard. We don't want to locate these facilities

1 in communities that have been overburdened to begin with.

2           So it just takes time. And I think if there's  
3 anything that I can leave you with is we can do it but  
4 it's just -- it's going to take time.

5           So since we're going to have to triple that  
6 amount of infrastructure that we need, it's going to be  
7 costly. And right now the amount that it costs to bring  
8 forward one of these projects really varies. It varies  
9 quite widely depending upon the size of the project. But  
10 the projects generally run from about 10 million to 50  
11 million, depending on the size. So we're going to need 2-  
12 to 3 billion dollars in the next six to seven years in  
13 order to construct the various facilities that we are  
14 going to need.

15           And where is this money going to come from?  
16 Certainly it's going to come from local government. We're  
17 going to either use our general fund or our ratepayers are  
18 going to help fund that infrastructure. We're going to  
19 need assistance from industry. They're clearly going to  
20 need to help out.

21           And then of course the State. I think you've  
22 heard a couple speakers already reference the GGRF funds  
23 that are available, or potentially available I should say.  
24 The Governor has really shown leadership on this. He's  
25 brought forward a couple budgets in the last few years



1 that have earmarked funds for organics. The staff  
2 presentation, you know, accurately pointed out there's  
3 about 60 million for organic infrastructure, which is  
4 absolutely needed. But 60 million really, I mean, if  
5 we're talking 2- to 3 billions really is a bit of a drop  
6 in a bucket. But it is meaningful. So our coalition has  
7 certainly been very supportive of those funds and we will  
8 continue to be supportive of those funds.

9 And if I could just, you know, one last piece. I  
10 mean, surely the markets. We've talked a little bit about  
11 the markets. Biogas, we're going to hear more from Frank  
12 Caponi here in a second, and then Julia Levin also  
13 mentioned the need to clear up some of the regs or  
14 hurdles.

15 But compost itself. We need mark -- that does go  
16 quick. All right.

17 (Laughter.)

18 MR. RHINE: My last sentence. We need markets  
19 for compost. We've seen bills in the past that have asked  
20 the State to purchase some of those materials. They  
21 failed. We certainly would think that the State should  
22 lead by example and help build a market for the material.

23 Thank you.

24 VICE CHAIR BERG: Thank you.

25 Good afternoon.

1           MR. CAPONI: Good afternoon. Vice Chair Berg,  
2 members of the Board, my name is Frank Caponi with L.A.  
3 County Sanitation Districts. Carry along with the group  
4 testimony.

5           I wanted to talk about the environmental  
6 framework - and I like that term that was used earlier -  
7 as also the barriers, as well as some of the opportunities  
8 that are out there.

9           First on some of the environmental framework.  
10 You heard from a representative from San Francisco that  
11 they're able to compost their waste and doing a tremendous  
12 job up there.

13           Well, let's move further south, say, to the South  
14 Coast Air Quality Management District or the neighboring  
15 San Joaquin Valley, which are the extreme nonattainment  
16 areas -- two of the extreme nonattainment areas in the  
17 country -- and try to see if we could do the same thing  
18 there.

19           Well, of course the answer is we can't. To build  
20 a compost facility, say, in the South Coast AQMD you have  
21 to essentially enclose that entire compost facility, vent  
22 the entire thing to a biofilter to clean up VOCs as well  
23 as ammonia. These are extremely expensive facilities.  
24 These aren't your old backyard "let's turn the compost."  
25 These are highly technical facilities.

1           So building these in these areas, which are the  
2 most populous areas of the State, are nearly impossible or  
3 highly -- very, very expensive.

4           So that drives us to digestion. You heard about  
5 some of the permitting barriers and some of the siting  
6 barriers from Mary Pitto. Those are very real and extreme  
7 barriers in siting these facilities.

8           But let's take the other component of it, the  
9 biogas. Biogas is a great product from these. But once  
10 again, we're not, say, in the Bay Area or some other area.  
11 We're in the South Coast AQMD or the San Joaquin Valley.  
12 Back in the day we liked to take that gas and throw it in  
13 an engine. But we can't do that anymore, because the air  
14 emissions are just -- are just -- are too much from those  
15 facil -- from those projects.

16           Board Member Mitchell knows all the years that we  
17 fought on biogas engine rules down in the South Coast  
18 AQMD.

19           So the best use of that gas is clean it up and  
20 put it in the pipeline. And this now goes to Dr.  
21 Sperling's comment about why can't we do this stuff here?

22           We heard about an inter connects costs well lets  
23 look numbers. It takes 10 to 20 percent of the capital  
24 costs of a project, 10 to 20 percent of the -- just to  
25 hook up to the pipeline if you want to do pipeline

1 injection. These are extremely expensive. If you go to  
2 other areas of the country, that cost is a fraction of  
3 that.

4 And then there's the cleanup. And so the cost of  
5 doing this is tremendous. But it can be done. With the  
6 right incentives and the proper funding, these things can  
7 be done.

8 And let's just talk about opportunities. We have  
9 a lot of organics, we've heard, to move out of landfills.  
10 We need the ability to do it as quickly as possible to  
11 meet the very stringent goals that have been set forth.

12 One of the opportunities is wastewater treatment  
13 plants. You heard that in the presentation. And these  
14 wastewater treatment plants are there, they're ready to  
15 take organics really tomorrow. We have the infrastructure  
16 in place to do that. And with the proper support and the  
17 proper funding, we can make a huge dent in the organics  
18 coming out of landfill and we could do it very quickly.

19 Thank you.

20 VICE CHAIR BERG: Thank you.

21 DR. BREZNY: Good afternoon, Vice Chair Berg and  
22 members of the Board. I'm Rasto Brezny with the  
23 Manufacturers of Emission Controls Association. Our  
24 members develop and commercialize the emission controls on  
25 mobile sources, including the high efficiency diesel

1 particulate filters that are over 99 percent effective at  
2 reducing black carbon.

3           Our industry has continued to support ARB's  
4 efforts to develop innovative emission control programs to  
5 address air quality problems. And we certainly support  
6 staff's development of this Short-Lived Climate Pollutant  
7 Strategy. And I think there's a number of opportunities  
8 to go beyond what's proposed in this strategy, which I'd  
9 like to highlight.

10           We'll provide detailed comments in our written  
11 statement, but I just want to highlight some additional  
12 controls, for example, from mobile sources.

13           The reduction of black carbon from on-road  
14 vehicles has certainly been a success story in California,  
15 through the Diesel Risk Reduction Program, as well as  
16 other regulatory measures.

17           And since 2007, diesel particulate filters have  
18 been required on diesel engines for new vehicle -- new  
19 diesel vehicles. However -- and these devices reduce  
20 black carbon by over 90 percent below the regulated  
21 standard. And these opportunities, however, are lost on  
22 the off-road sector, where over 50 percent of these Tier 4  
23 final engines are certified without diesel particulate  
24 filters.

25           So I think there's some opportunities for some

1 further reduction measures from the off-road sector.

2 We also believe that, you know, ARB's efforts to  
3 improve the Heavy-duty Inspection and Maintenance Program  
4 is also going to ensure that diesel particulate filters  
5 are working over the truck's entire operational life. And  
6 some of these inspection and maintenance measures could be  
7 applied into other sectors as well, such as the off road.

8 We support ARB's development of the inventory for  
9 methane leakage from the gas sector and the  
10 infrastructure. However, we believe some funding could be  
11 allocated to also understand leakage from fueling and  
12 operation of vehicles as well to get a complete picture of  
13 the climate change impact of methane leakage.

14 So with that, I want to thank you for your time,  
15 and I'd be happy to address any questions you might have.

16 VICE CHAIR BERG: Thank you very much.

17 MR. NOBLE: Hello, Madam Vice Chair Berg and  
18 Board. Than you for the opportunity. My name IS Dan  
19 Noble. I'm the Executive Director of the Association of  
20 Compost Producers. We are the California State chapter of  
21 the U.S. composting Council. And you can find us on the  
22 web at [healthysoil.org](http://healthysoil.org).

23 We are in support of the Short-Lived Climate  
24 Pollutant Reduction Strategy. In fact, if you counted the  
25 amount of times compost was mentioned in there, it was no

1 less than four dozen times. So compost factors in big to  
2 the strategy, only behind manure, which I think was  
3 mentioned just slightly less than a hundred times in the  
4 Strategy.

5 (Laughter.)

6 MR. NOBLE: But you two actually work together,  
7 because you can not only anaerobically digest manure; you  
8 can also compost it. And if you -- and you -- when you  
9 produce anaerobic digestion, you produce digestate, which  
10 itself has to either be land applied or composted or  
11 turned into some other soil amendment.

12 So we very much are in support of the strategy.  
13 However, how it gets implemented will -- as you've heard  
14 already and will continue to hear, depends on, you know,  
15 the investment and the markets and the technology and  
16 certainly the permitting.

17 So we looked -- our goal is to look at markets.  
18 That's our mission. But when we talk about markets, it's  
19 not just the markets for compost. It's the markets for  
20 the feedstocks to compost. And in our association, we  
21 compost all of the organic feedstocks, various members do,  
22 whether it's biosolids from the wastewater treatment  
23 plants, whether it's the green waste from landscape,  
24 whether it's manure, or also food scraps which are of  
25 course now entering more into the waste stream.

1           So, there's feedstock markets and they're  
2 competing right now against landfill tipping fees. Within  
3 the compost world there's kind of this rule of thumb  
4 called the 60/40 rule, where 60 percent of your income  
5 comes from the tipping fee, which means you're competing  
6 against the landfills. And if landfills are losing that  
7 material, how are we going to maintain the landfills in  
8 perpetuity even if we close them. So there's a financial  
9 issue about those investments that become stranded as a  
10 result of implementing the strategy.

11           On the other side of that you have the -- you  
12 know, all the different technologies in the technology  
13 streams which have to be invested in. Then you have the  
14 bioproduct markets including compost; but there's eight  
15 others, like biochar and biogas and animal feed and so  
16 forth. And then of course there's the market for capital.  
17 We talked about all the benefits of compost. We're  
18 engaged in some of those benefits for water conservation  
19 low-impact development. But those aren't being monetized  
20 in the marketplace yet. So who realizes those benefits  
21 and how does that feed into the system?

22           We propose, you know, working with industry  
23 through the implementation of this strategy so that all of  
24 these market barriers and benefits can become realized.  
25 So that's a piece we want to see as part of the strategy.



1 And we'll be including our comments with that.

2 VICE CHAIR BERG: Thank you very much.

3 BOARD MEMBER GIOIA: Sandy, can I ask him a  
4 question, just a quick one?

5 VICE CHAIR BERG: Yes. We have one question for  
6 you, sir.

7 BOARD MEMBER GIOIA: So what do you -- what  
8 suggestions do you have of what we local air districts,  
9 others, could do to help develop more markets that then  
10 drive the need for more facilities like the desired \*\*AD-1  
11 facilities permitted?

12 MR. NOBLE: Well, as I gave in testimony and as  
13 we've discussed in some of our letters, we're right at the  
14 cusp of moving from a disposal economy to a renewable or  
15 regenerative economy. So we're actually having a  
16 wholesale transition -- or transformation of our markets  
17 right now. We're in the midst of it. And that creates a  
18 lot of chaos in the capital markets. Because Wall Street  
19 doesn't really know how to invest in a circular economy,  
20 and Main Street doesn't much either. So I think there's  
21 an issue here about how do we analyze the markets. We  
22 need to have market research ongoing and financial  
23 research ongoing, and we all need to work from a similar  
24 model. We don't have that model right now.

25 I presented a model at biocycle conference last

1 month in San Diego, which we are just calling the  
2 bioproducts market assessment framework, that includes all  
3 of these. But that's not what, you know, economists are  
4 learning in school. So when they come out, they're not  
5 learning circular economics. Although the environmental  
6 economists are starting to do that.

7           So I think we need -- all need to work from a  
8 similar framework or at least agree on that framework, and  
9 then do the research that supports that.

10           BOARD MEMBER GIOIA: Thank you.

11           VICE CHAIR BERG: John Dans.

12           Laura Ferrante.

13           MS. FERRANTE: Good afternoon. My name is Laura  
14 Ferrante. I'm here on behalf of Recology, which is a  
15 fully integrated -- recovery company.

16           Oh sure.

17           We operate -- I'm Laura Ferrante with Recology.  
18 We operate 10 organics facilities -- organics processing  
19 facilities on the West Coast. And last year we composted  
20 over a billion pounds of yard trimmings and food scraps.  
21 And I'm here today to express our strong support for the  
22 proposed strategy, particularly the organics diversion  
23 goals intended to reduce methane emissions.

24           I also would echo some of the comments we've  
25 heard already on this issue, particularly those by Jack

1 Macy and Nick Lapis.

2           We do know some of the substantial hurdles  
3 to reaching 90 percent diversion by 2025, namely,  
4 permitting of new and expanded facilities -- organics  
5 recycling facilities, which will require much coordination  
6 and cooperation with local jurisdictions; as well as the  
7 financial challenges of developing these facilities, which  
8 industry cannot bear alone.

9           However, we don't see these as reasons to not  
10 move forward with these goals. Our facilities have had  
11 much success with evolving practices and technologies  
12 while dealing with some of the same air nonattainment  
13 issues that have been mentioned earlier today. That's  
14 some of the other areas of the State are encountering.  
15 And we are still succeeding and moving forward.

16           Additionally we do not necessarily agree that  
17 the -- there is -- that the market for finished compost is  
18 not already fairly robust. In our experience we can't  
19 make compost fast enough. There's always a need for more.

20           Eliminating disposal of organics will guarantee  
21 feedstock at our facilities and at new and expanding  
22 facilities, such that the demand for compost products may  
23 be better met.

24           Look forward to continuing to work with the Air  
25 Resources Board and CalRecycle moving forward in

1 developing these regulations and implementing these goals.

2 Thank you.

3 VICE CHAIR BERG: Thank you.

4 I'm going to have anybody who is interested in  
5 signing up for this item, if you could do so now. We're  
6 going to cut off the testimony here in five more minutes.  
7 So if you want to testify, the remaining -- we have about  
8 30 people left. And so we would really appreciate if you  
9 could really explain to the Board succinctly - really  
10 kudos under three minutes - but we're going to have to  
11 absolutely acknowledge the three-minute rule. Otherwise  
12 we're going to be having dinner together.

13 And so we would appreciate if you could really  
14 explain to us the key points that you want us to address.  
15 Okay?

16 All right. So let's continue with Christopher  
17 Berry please.

18 MR. BERRY: Good afternoon. And thank you,  
19 Board, for addressing this issue and for all the work that  
20 you put into it. My name is Christopher Berry. I'm an  
21 attorney at the Animal Legal Defense Fund headquartered  
22 here in California. And I live in Berkeley, California,  
23 as well.

24 I want to again express gratitude for looking  
25 into this issue. To the best of my knowledge, this is the

1 first time that a regulatory body has proposed regulating  
2 the animal agriculture for its impact on climate change,  
3 and I think that's really important.

4 But I've sensed some tepidness in the proposed  
5 strategy and from some of the comments today that I think  
6 is really unwarranted.

7 So I want to step back just for a moment to give  
8 sort of a high level overview of the impact of animal  
9 agriculture on the environment.

10 Animal agriculture takes up about a third of  
11 earth's land. And that's primarily to produce feed that's  
12 used to then feed the cows. It's a very inefficient way  
13 to produce nutrients and protein and it's grossly  
14 unsustainable.

15 In addition, half of all water in the United  
16 States is used for animal agriculture. Again, that's  
17 mostly for the animal feed and is highly unsustainable.  
18 It's an enormous source of nitrate water pollution. It's  
19 responsible for 14.5 percent of all greenhouse gas  
20 emissions, which is roughly comparable to the entire  
21 transportation sector, which has received a ton of  
22 regulatory attention.

23 And of course here in California, about -- over  
24 50 percent of methane emissions are attributable to the  
25 livestock industry.

1           So, frankly, we should be thinking about animal  
2 agriculture the same way we think about fossil fuel.  
3 There are much more efficient ways to get nutrients and  
4 protein than by funneling all these resources through  
5 animals that produce so much methane emissions.

6           And we can see that echoed by a lot of  
7 authoritative statements by high level officials here in  
8 California. Last year Governor Brown said, frankly, we  
9 should be eating more veggie burgers in response to the  
10 drought in California, which I think is equally applicable  
11 to climate change.

12           In the Paris Climate Talks in December of last  
13 year, Governor Schwarzenegger, who of course signed AB 32,  
14 said that we should be shifting to a vegetarian diet.

15           And other authorities, including the UNFAO, has  
16 been sounding the alarm on the livestock industry since  
17 2006.

18           I would encourage everyone who hasn't read it to  
19 read Livestock's Long Shadow by the UNFAO, or at least  
20 read the Wikipedia entry about it to get the general gist  
21 of what it says.

22           But subsequently the U.N. has continued to  
23 ringing the alarm bells about it, and it's received very  
24 little regulatory attention.

25           Accordingly, I think strong action is necessary,

1 it's equitable; and it's sound public policy for this  
2 Board to take decisive action. I think it should do so  
3 with strong direct regulation or market-based approach and  
4 shift away from this voluntary incentive approach that  
5 it's been taking and it's been failing so far.

6 Thank you, everyone.

7 VICE CHAIR BERG: Thank you, Mr. Berry.

8 MS. BROWN: Hi. Thanks to all of you on the Air  
9 Resources Board for your significant commitment and work  
10 on this climate crisis that we're facing. I'm here from  
11 SCS Global Services. We're a California benefit  
12 corporation providing third-party environmental and  
13 sustainability certification. And we're an accredited  
14 verifier under the California Cap-and-Trade Program.

15 Let me just say -- I was going to talk about a  
16 litany of issues of what we're observing. But the most  
17 important thing is that what we're observing in terms of  
18 climate change now, it's very sobering to realize that all  
19 of these changes we're experiencing at levels far below 2  
20 degrees Celsius, the Paris goal, and even far below the  
21 1.5 degree aspirational goal of the Paris Treaty. Things  
22 are happening right now in front of us that we need to  
23 address.

24 Our net radiator forcing levels are rapidly  
25 increasing from the current levels of about 2.3 watts per

1 square meter to 2.6 watts per square meter, which is the  
2 threshold above which we will hit 2 degrees Celsius in  
3 temperature rise. So we must take very prompt and  
4 concerted action within the next five to 10 years, not  
5 2030, 2050. We need to be thinking now, because we're  
6 going to set into motion within this next five to 10 years  
7 things that we can't pull back.

8           What is needed to complement your very good work  
9 in the proposed strategy is an updated analytical  
10 framework to better assess the relative benefits, costs,  
11 and trade-offs of all the mitigation options you've put  
12 forward, including an ability to determine whether the  
13 scale of each type of project will meaningfully influence  
14 climate change and push the bar.

15           Fortunately, there is work nearing completion  
16 within the American National Standards process to develop  
17 updated climate accounting metrics that are based on the  
18 latest climate science reflected in the IPCC 5th  
19 assessment report. The new metrics integrated the IPCC  
20 framework with advanced lifecycle assessment midpoint  
21 characterization. In a nutshell, this approach makes it  
22 possible to evaluate each mitigation option more fully in  
23 terms of the scale of its potential benefits as well as  
24 the full range of environmental trade-offs. The net  
25 result is that we can more clearly identify and prioritize



1 the projects so that we're spending the money most wisely.  
2 We can't spend money on everything. There isn't enough  
3 money to really go around; and you've heard a lot of  
4 competing desires for that -- where that money needs to  
5 go. So we -- the analytical framework will help that  
6 process.

7 I'm also pleased to tell you that the same new  
8 advanced metrics with climate scientists supporting these  
9 metrics are being put forward in the international forum.

10 I had two very, very quick last things.

11 One, it would be very beneficial --

12 VICE CHAIR BERG: If that's two sentences, that's  
13 fine. Not five.

14 MS. BROWN: Would be very beneficial if the scope  
15 of the scope of the proposed strategy would consider  
16 upstream vendors to the State in the public and private  
17 sectors. And it would be very helpful to include the  
18 formation of tropospheric ozone within your scope of  
19 short-lived climate forces, not just the ones that have  
20 been included.

21 Thank you very much.

22 VICE CHAIR BERG: Will my timer please change the  
23 time to 2 minutes 45 seconds.

24 (Laughter.)

25 VICE CHAIR BERG: Okay. So let's go with

1 Christina.

2           And then, Kevin, will you tee up so we can keep  
3 it moving. Thanks.

4           MS. BENZ: Good afternoon. I'd like to start by  
5 thanking the Board and the staff for your leadership on  
6 climate. My name is Christina Benz. I'm here today  
7 representing Napa Climate NOW, a Napa County citizens  
8 organization formed to advocate for smart action in  
9 response to the climate crisis we face at the community,  
10 state, national, and international levels.

11           We're very encouraged that you have recognized  
12 the importance of mitigating short-lived climate  
13 pollutants as a priority for California. And in the  
14 interests of further strengthen the State's climate change  
15 position, we hope you take these additional observations  
16 to heart.

17           One of the keys to tackling climate change is to  
18 focuses on radiative forcing, as the IPCC has done in its  
19 5th assessment report and not just on temperature rise.  
20 The net increase in radiative forcing drives the rise in  
21 global mean temperature.

22           As the previous speaker mentioned, we are very  
23 close to a critical radiative forcing threshold. In  
24 short, this means that we need to make every minute and  
25 every dollar count. We are taking efforts to mitigate

1 methane, black carbon, and fluorinated gases in our -- in  
2 the draft strategy. But we should also be addressing  
3 tropospheric ozone head on, as it is 1,000 times more  
4 potent than CO2.

5 We also need to think about getting the most bang  
6 for our buck. And that means investing not just within  
7 the State's borders but beyond our borders. It turns out  
8 that we could significantly multiply the effect of our  
9 mitigation dollars on global temperature rise if we  
10 invested it in black carbon hot spots around the globe.  
11 That would make California a true leader in the global  
12 climate fight and set an important example.

13 Your actions and decisions will be crucial for  
14 all of us operating at the city and county levels to  
15 create effective local climate action plans.

16 We look forward to tracking your progress and  
17 continuing the dialogue.

18 Thank you very much.

19 VICE CHAIR BERG: And thank you, Christina.

20 Hi, Kevin.

21 MR. MESSUER: Hi. Kevin Messuer. I represent  
22 the Association of Home Appliance Manufacturers. I can  
23 and will be brief.

24 Two things: Organics. Think of food waste  
25 disposers. Actually that can divert it from landfill.

1 And that's not a theoretical situation. Philadelphia  
2 actually delved into this whole pilot and is implementing  
3 that as a reduced organic.

4 Second thing I wanted to mention is on  
5 refrigerants. The alternatives to go to for refrigerators  
6 and air conditioning, yes, they're available. But  
7 availability is simplify -- overly simplifies it. There's  
8 problems and -- or there's challenges that need to be  
9 overcome. I'm only going to mention one - safety.

10 There are safety standards that exist out there  
11 that are problematic -- well, I shouldn't say  
12 problematic -- that exist out there. The safety standards  
13 in the U.S. are stricter than in Europe in this area, and  
14 so it limits the charge size.

15 And so that's one of the big barriers. And the  
16 manufacturers don't have control of these safety standard  
17 organizations. And, believe it or not, CARB doesn't have  
18 control even over the safety standards. So we don't have  
19 control over these things. And we can't control when and  
20 if and how they'll do these standards.

21 Now, the proposal recognizes that and understand  
22 it so that's good. But at the same time it proposes a  
23 potential ban of these refrigerants. So you can't ban on  
24 a certain date if there's barriers there on safety issues  
25 that have to be resolved in others. So I just wanted to

1 highlight that to the Board. We're not trying to be  
2 obstinate here. There is a safety standard issue that has  
3 to be overcome, among some other things.

4 So thank you.

5 VICE CHAIR BERG: Thank you.

6 CHAIR NICHOLS: Mr. White, hello.

7 MR. WHITE: Hello. Thank you, Madam Chair and  
8 members. I'm now retired from Waste Management, but I'm  
9 still providing consulting services to the solid waste and  
10 recycling sector.

11 I don't oppose this plan. In fact I support it  
12 overall. But I do want to discuss that one sentence:  
13 "ARB in conjunction with CalRecycle will develop a  
14 regulation by 2018 to effectively eliminate the disposal  
15 of organics in landfills."

16 We've already heard about the fact that  
17 California's got aggressive legislation in place to remove  
18 as much as 50 percent or more by 2020. Yet by 2018 you  
19 want to move forward with other -- further policies.

20 There's a big question about what the cost is  
21 going to be, which could run into millions; who's going to  
22 pay for it; what the facility's siting is going to be; the  
23 environmental reviews; and the permitting.

24 One of the concerns I have is that doesn't it  
25 seem that strategy has recognized the landfill early

1 action measure that was one of the first actions adopted  
2 by the Board after AB 32 that resulted in very tight  
3 controls over the emissions of methane from landfills.  
4 That doesn't seem to have been factored into this  
5 strategy.

6 Further, the strategy recognizes there's a  
7 tremendous uncertainty over landfill methane emissions.  
8 Quantify -- Your own report says quantifying landfill  
9 emissions is difficult due to the area-wide nature, and  
10 estimates vary from all over the place. You rely on your  
11 projections using a first order decay model, which many  
12 folks feel is relatively inaccurate and relies on a  
13 tremendous number of assumptions and our view has not been  
14 field verified. There's been a myriad of direct  
15 measurement studies that don't -- aren't incorporated into  
16 the plan to recognize what is being done in the industry  
17 to minimize methane emissions from landfills.

18 California what, lead the way in developing a new  
19 model called the \*\*CalMem model that was financed by  
20 California Energy Commission to have a better handle on  
21 methane emissions. Yet that hasn't been used or  
22 recognized. And we certainly recommend you taking a  
23 look -- a strong look at that model moving forward.

24 Look at landfill -- improved landfill strategies.  
25 I think Nick Lapis mentioned the problem of early

1 emissions of methane after the initial placement of waste.  
2 Well, there could be things done to immediately install  
3 gas collection systems at the time of waste placement.  
4 \*\*Remenias \*\*Danya in nearby Yolo County is evaluating  
5 that.

6           And my final point really is that Low Carbon Fuel  
7 Standard is heavily relying on renewable natural gas from  
8 landfills, mostly outside of California being piped in.  
9 If you cease the development of methane capabilities from  
10 landfills, no one's going to invest in further development  
11 of those in California, and you're going to be totally  
12 relying on landfill gas coming from out of state.

13           I would suggest that the Board consider amending  
14 that one sentence I referred to and take a look at all the  
15 opportunities for reducing short-lived climate pollutants  
16 from the solid waste and recycling sector and not move  
17 into a banning, in a sense, or effectively eliminating  
18 regulation in 2018. Wait until some of these other  
19 programs and policies have been further evaluated and  
20 played out.

21           Thank you.

22           VICE CHAIR BERG: Thank you.

23           Mr. Abbs, good afternoon.

24           CAPCOA EXECUTIVE DIRECTOR ABBS: Good afternoon,  
25 Vice Chair Berg and members of the Board. My name is Alan

1 Abbs with the California Air Pollution Control Officers  
2 association, representing the 35 local air districts. We  
3 are in full support of the strategy.

4 I'd like to start by commending staff on the  
5 development of the strategy and for setting aggressive  
6 goals for reduction of short-lived climate pollutants.  
7 And I appreciate the acknowledgement of the past work in  
8 achieving reductions both at the State -- both by the  
9 State through ARB and at the local district level.

10 We're ready to continue our partnership with ARB,  
11 and this strategy has a lot of opportunities for that to  
12 happen:

13 Landfill and organics diversion, dairies, oil and  
14 gas, wastewater treatment plants, prescribed fire and ag  
15 burning, wood stove replacement, diesel equipment, and  
16 refrigerant equipment.

17 Air districts have a lot of experience at these  
18 facilities. And in some of these areas, like oil and gas,  
19 we've been working together with ARB for a long time, so  
20 we have a good head start on meeting some of these goals.

21 With respect to organics, the air districts are  
22 gearing up district staff to look at local air district  
23 permitting and siting of these facilities so that we can  
24 help be part of the solution for the 2018 regulations  
25 package, and we hope to be a part of that process as well.



1 I'd also like to thank ARB for supporting  
2 CAPCOA's wood stove replacement proposal in the 2016-2017  
3 State budget. And we think incentive programs like this  
4 are going to be able to deliver quick and quantifiable  
5 reductions for the Short-Lived Climate Pollutant Strategy.

6 The last comment I have is to echo staff's  
7 comment about co-benefits from this reduction strategy.

8 And as we move forward, I hope that we focus on  
9 programs that achieve these co-benefits and also get the  
10 highest and best possible uses of the byproducts so that  
11 we can see NOx and PM reductions along with reductions in  
12 methane and not going at cross-purposes where we get  
13 increases in one at the expense of reductions in another.

14 So in sum, thank you for the opportunity to  
15 comment. And the air districts look forward to working  
16 with ARB to get these reductions.

17 Thank you.

18 VICE CHAIR BERG: Thank you.

19 Diana.

20 On to page 2. Sarah.

21 MS. DESLAURIERS: Hello, Vice Chair Berg and  
22 Board members and other staff and State agencies.

23 My name is Sarah Deslauriers. I'm the program  
24 manager for the California Waste Water Climate Change  
25 Group, the numbers of which represent the waste water

1 community perspectives on climate change issues.

2           And we applaud the staff for the hard work and  
3 extensive cooperation developing the proposed Short-Lived  
4 Climate Pollutant Reduction Strategy. And we continue to  
5 strongly support the inclusion of the wastewater sector as  
6 part of the solution to reducing methane.

7           Municipal wastewater treatment plants, as you  
8 know, provide a media pathway for significant methane  
9 reductions capable of accepting upwards of the 75 percent  
10 of food waste and fats, oils, and grease from landfills as  
11 was mentioned in the presentation today, and taking that  
12 material and co-digesting it with sewage sludge. The  
13 products are bioproducts, biogas and biosolids, and both  
14 can be beneficially used, the biogas for energy production  
15 or putting that -- processing it and putting into a  
16 pipeline, as well as processing it into a transportation  
17 fuel as was included in the economic analysis.

18           Also, soil amendments are the biosolids used as a  
19 soil amendment to offset synthetic fertilizer use and  
20 production, sequester carbon in the soil below, and offset  
21 irrigation demand because of the moisture that's already  
22 in the biosolids, and increase crop yield as well as plant  
23 health.

24           And it can also be used to reclaim fire-ravaged  
25 land.

1           We do want emphasize that it's critical that  
2 there's a plan in place for the beneficial use of  
3 biosolids. There is acknowledgement of it as a soil  
4 amendment. But it's not addressed explicitly in the  
5 Healthy Soils Initiative nor is it in the natural and  
6 working lands efforts or in the ag sector's Forest Carbon  
7 Plan.

8           So to make all this happen, then we do see the  
9 wastewater sector being a partner with the waste  
10 management sector, the waste management sector providing  
11 the pre-processing of diverted organics into a digestible  
12 form. And because infrastructure is in place, some of the  
13 necessary permits are already in place, and trained staff,  
14 the municipal wastewater sector is uniquely positioned to  
15 take on that material and help the State achieve not only  
16 diversion goals but renewable energy goals, low carbon  
17 fuel goals, methane reduction goals, and contribute toward  
18 the Healthy Soils Initiative through land application of  
19 biosolids.

20           We are preparing a letter providing a full set of  
21 the comments as well as some detailed comments on the  
22 economic analysis.

23           We thank you for your time today, and we look  
24 forward to continued discussions with ARB, the Air  
25 Resources Board, and other state agencies in helping

1 achieve all of these goals.

2 So thank you.

3 VICE CHAIR BERG: Thank you.

4 Katerina, followed by Debra please.

5 MS. ROBINSON: Good morning, Chair and members.

6 Katerina Robinson on behalf of John Wick, cofounder of the  
7 Global Compost Project and the Marin Carbon Project. I  
8 want to thank you and Board staff for working with us and  
9 other stakeholders in the last few weeks.

10 First, we're here to strongly support the goal of  
11 diverting 90 percent of organics from landfills by 2025.  
12 This organic material can be beneficially reused to  
13 improve the State's soil and natural -- and help natural  
14 and working lands be more resilient to climate change  
15 while sequestering carbon in soils.

16 Research from the Marin Carbon Project and UC  
17 Berkeley shows that a one-time dusting of compost on range  
18 lands can lead to a one ton per acre of CO2 equivalent  
19 sequestration of carbon every year in the soils, and then  
20 that can persist just from a one-time application for 30  
21 years and potentially up to a decade -- or up to a  
22 century. I apologize.

23 This carbon is permanently removed from the  
24 atmosphere and stored deep in soils. And further compost  
25 application on range lands and farm lands reduces water

1 use by about 25 percent, which helps farms and  
2 agricultural facilities be more resilient in the face of  
3 climate change.

4           Though there are some existing capacity concerns  
5 for compost facilities today, we think that it is  
6 completely feasible for the facilities to be built up in a  
7 timely manner to accept this organic waste. And we  
8 strongly support programs to provide financial incentives,  
9 particularly to small and medium-sized compost facilities  
10 that are struggling under existing regulations.

11           Turning to methane reductions from California's  
12 dairies, we support the goals of the Board to create more  
13 sustainably managed farms and to reduce emissions from  
14 dairy facilities. But we hope that the staff can continue  
15 to work with stakeholders to ensure that the methane  
16 emissions reductions are real and that we aren't just  
17 leading to dairy industries moving out of state where they  
18 will continue to produce methane emissions.

19           We thank the Board for the inclusion of  
20 conversion to dry scraped areas in the current plan, which  
21 we feel will reduce methane from lagooning of dairy  
22 manure. And conversion of dry scraped dairies will also  
23 aid in addressing local water quality concerns, which is  
24 key to protecting low income communities struggling with  
25 contaminated well water.

1 Further, dry manure will be able to be  
2 co-composted with organic material and other agricultural  
3 green waste and even dead and dying trees, to create more  
4 composts that can be used on agricultural lands.

5 From our work with landowners and resource  
6 conservation districts, we have found that landowners are  
7 willing to engage voluntarily in these practices, and we  
8 feel that incentivizing the industry to shift practices is  
9 the appropriate course of action at this stage.

10 The main concern I think with landowners is the  
11 fear and the risk of adopting new practices. Digesters  
12 can be costly and complicated, and dry scrape conversion,  
13 sometimes less expensive, is also frightening. But if we  
14 can help incentivize landowners, then we can turn the  
15 corner with landowners and help them see this as something  
16 they're willing to move into with our next generation of  
17 our farmers.

18 Thank you very much.

19 VICE CHAIR BERG: Thank you very much.

20 MS. KAUFMAN: Good afternoon. I'm Debra Kaufman  
21 with Stop Waste, the Alameda County Waste Management  
22 Authority. Our county includes 17 jurisdictions, housing  
23 1.5 million people.

24 I'm here to express our agency's support for the  
25 development of a regulation to reduce and ultimately

1 eliminate organics from landfill to reduce methane  
2 emissions.

3           Our county banned planned debris from  
4 landfills -- Alameda County landfills in 2009. All our  
5 jurisdictions offer weekly organics collection service.  
6 And our cities are urban and suburban and range in size  
7 from 10,000 in Emeryville to 300,000 in Oakland.  
8 Residential and commercial organics collection has worked  
9 well across the county and communities, large and small.

10           Our cities and county would not have been able to  
11 achieve a diversion rate that exceeds 70 percent without  
12 diverting organics from landfill.

13           Combining regulatory and financial assistance to  
14 increased compost and anaerobic digestion processing  
15 capacity combined with phased-in ban on organics at the  
16 landfill will help the State and our jurisdictions meet  
17 high diversion and greenhouse gas reduction goals. It  
18 will also help us divert edible food to hungry people.

19           Additionally, it will help our agencies meet demand  
20 for compost and mulch, which will help them meet water  
21 conservation goals, improve soil quality, and increase  
22 climate resiliency.

23           Many of our communities send their organics out  
24 of county to counties that are in nonattainment for VOCs;  
25 and compost facilities have many cost-effective and

1 practical ways for minimizing and reducing VOCs, including  
2 applying finished compost to windrows.

3           So I want to thank you for the opportunity to  
4 comment.

5           VICE CHAIR BERG: Thank you very much.

6           Paul. And followed by Rachel please.

7           MR. SOUSA: Good afternoon, Board members. My  
8 name is Paul Sousa. I'm with Western United Dairymen.  
9 I'm the director of environmental services.

10           While California dairy families have made  
11 tremendous strides to reduce the carbon footprint of each  
12 gallon of milk by over 60 percent since World War II, we  
13 are prepared to do our part to make further reductions.

14           We insist however that that be done based on  
15 sound science, realistic goals, in an economically  
16 feasible way.

17           Unfortunately the goals outlined by staff are  
18 entirely unachievable by 2030 under the best of  
19 circumstances, let alone the circumstances that currently  
20 exist.

21           The current proposal unfortunately sets up our  
22 dairy families and this Board and the State for failure.

23           We can show -- we can only show further  
24 leadership for the rest of the nation and the world if we  
25 work together to develop realistic goals and an



1 economically feasible path forward. If we try to force  
2 this issue, the end result will be broad emissions leakage  
3 as dairies exit the State. The State will not only lose  
4 control of emissions, but the San Joaquin Valley will lose  
5 countless tens of thousands of jobs.

6 We have lost more than 600 dairies in the last  
7 decade alone, going from over 2,000 to just 1,400 family  
8 dairies today.

9 We lost over 40 dairies last year, and we have  
10 seen a significant number of closures or moves this year.  
11 Some are closing, while others are choosing to set up  
12 operations in other states such as Idaho and Texas and  
13 others.

14 It's also important for the Board to understand  
15 that dairies have zero ability to pass on increased  
16 regulatory costs to our customers. Our prices are set by  
17 the State Department of Food and Agriculture. This  
18 reality will further exacerbate leakage if greenhouse gas  
19 policies are not balanced and economically feasible.

20 The plan as proposed does not achieve that  
21 balance and will fail. We encourage you to direct staff  
22 to work with us to develop balanced, economically  
23 feasible, and realistic goals to further reductions and a  
24 clear path forward on how to achieve these goals. Western  
25 United Dairymen is working with Dairy Cares to provide

1 comments specifically on the economics.

2 And I thank you for your time, and if you have  
3 any questions.

4 VICE CHAIR BERG: Thank you very much.

5 MS. O'BRIEN: Good afternoon, Board and staff.  
6 Rachael O'Brien with the Agricultural Council of  
7 California.

8 Ag Council is a member-supported organization  
9 advocating for more than 15,000 farmers across California  
10 and the State's three largest dairy cooperatives.

11 California dairies have been an engaged partner  
12 throughout this process; and while they're committed, as  
13 Paul mentioned, to doing their part, there are many  
14 concerns that persist.

15 Currently we see the planned dairy methane  
16 reduction goals as unworkable and unrealistic. Setting a  
17 reduction goal of 75 percent by 2030 when no clear plan  
18 exists on how to get there is troubling for our dairymen.

19 Far more research is needed to identify,  
20 validate, and quantify the opportunities for dairy methane  
21 reductions. Removing economic barriers and obstacles is  
22 needed as well as understanding the cross-media  
23 environmental impacts.

24 We contend that more information is needed to  
25 chart realistic time frames for achieving the proposed

1 reduction goals.

2 Another concern remains on the front of enteric  
3 emission reduction targets in the dairy sector. Industry,  
4 as Paul noted, has made grade strides in the past in  
5 improving our efficiency and the GHG footprint for each  
6 gallon of milk produced in California. And for those  
7 reasons we really contend that ARB should put in voluntary  
8 approaches that could be more effective in achieving  
9 reductions at facilities without causing leakage of  
10 California dairies across the State.

11 You'll hear more comments from others, but Ag  
12 Council does ask the Board to direct staff to continue to  
13 working with us to resolve our concerns and find  
14 opportunities where we can get this right. You know,  
15 we've had I think a really good process thus far with  
16 staff. They've always had the door open. We've been able  
17 to take them out to dairy operations and show them on the  
18 ground how this works. We want to continue to have that  
19 open door.

20 And we do thank you all for your time.

21 VICE CHAIR BERG: Thank you.

22 Good afternoon, Kevin.

23 MR. ABERNATHY: Good afternoon. Thank you,  
24 Madam, members of the Board.

25 Dr. Sperling, thank you for asking your question.

1 And, Ryan, I really appreciate you giving it a shot there.

2 It's complicated.

3 (Laughter.)

4 MR. ABERNATHY: Now, that's about the only way to  
5 put it. Dr. Sherriffs and Mr. Eisenhut.

6 The process for putting together a digester --  
7 and there's been so many ebbs and flows through this  
8 process over the iterations of funding cycle starting,  
9 funding cycle stopping, starting to build projects. I  
10 actually have been working with as part of an  
11 interdisciplinary team of all the different layers of  
12 folks that it takes to put together a digester project  
13 from a dairy family's concept mentally to actually seeing  
14 one up and running and push the button and the switch  
15 starts and it's actually creating power.

16 That process requires a tremendous dedication on  
17 behalf of the dairy families, also a tremendous amount of  
18 capital investment on the front side of things, with  
19 potentially not being able to get a power purchase  
20 agreement that actually will pay for the project, in  
21 combination with getting an interconnect proposal from  
22 PG&E, as an example, that doesn't cost more than the  
23 project to build. I personally turned \$5.4 million back  
24 into 1603 funds because the interconnect proposal was more  
25 than the project we were going to build.

1           So there's a lot of complicated things that go  
2 along with this.

3           And we talk a little bit about, you know, leakage  
4 and other things. California dairy families, they're good  
5 at milking cows. The complexity of running a digester is  
6 just that. It's a whole 'nother entity within an entity.

7           But I want to make this comment. I usually don't  
8 talk about pricing at all. But California dairy families  
9 from 2010 to last month have an economic pricing  
10 disadvantage compared to the federal milk pricing orders  
11 where cumulatively California dairy families have not  
12 received \$1.9 billion in funds based on our pricing  
13 system.

14           That's just shy of \$1.2 million for an average  
15 thousand-cow dairy since 2010.

16           "So, jeez, do I want to put up with all the rules  
17 and regulations in California or do I want to move to  
18 Iowa? There's none of that and I make more money."

19           So that's one of the reasons that this leakage is  
20 such a prominent discussion, and it's a reality. I  
21 actually happen to work for most of the families that  
22 either have facilities existing out of state that have  
23 been built in the past 10 years because we've had one  
24 profitable year in the past 10, and that was 2015.

25           Staff has been great. Let us keep working with

1 staff. We need to put together a reliable program because  
2 we want to do what's right. And we can do what's right if  
3 we have the time and the dollars to implement it.

4 Thank you.

5 VICE CHAIR BERG: Thank you very much.

6 MR. CATIVIELA: Good afternoon, Madam Vice Chair  
7 and the members of the Board. My name is J.P. Cativiela.  
8 I'm here for Dairy Cares.

9 I want to start by pointing to an earlier  
10 commenter who pointed out a United Nations FAO report on  
11 livestock emissions, and just say if you read the rest of  
12 the story of that report, it very clearly points to North  
13 America, and the United States in particular, as the most  
14 efficient producer of milk in the world from a GHG  
15 standpoint per unit of milk.

16 And its greatest suggestion in that report is  
17 that more countries produce milk the way we do. And that  
18 was kind of left out when the impact of that report was  
19 discussed.

20 The staff in analyzing the dairy industry in  
21 California has stuck to sort of an emissions factor per  
22 cow approach. And we think it's very important that we  
23 use in California the same standard that everyone else in  
24 the world uses, which is emissions per milk produced. On  
25 that, we are clearly world leaders in efficiency.

1           Doing it the way we do it now is a little bit  
2 like comparing a bus to a small car, where even though the  
3 bus has slightly more emissions, it can carry 50 people  
4 instead of a couple of people. And that's really what we  
5 have here. We produce much more milk with the same  
6 emissions as cows in other places.

7           I'm here today to focus on the impacts to air  
8 quality that could result from a rushed approach that sets  
9 goals or mandates without research to understand the  
10 environmental and economic factors related to those.

11           In particular, this strategy focuses on three  
12 components - digesters, converting dairies from flush  
13 systems to scrape systems, or converting dairies to  
14 pasture. All three of these prevent significant problems.  
15 Digesters create NOx; flush to scrape systems will create  
16 VOC, ammonia, and PM emissions; and pasture dairies,  
17 although we support our pasture dairies, it's not even  
18 clear that this wouldn't increase GHG emissions to force  
19 that type of an increase.

20           And they certainly would not use the resource of  
21 manure to create energy. They would use more water and  
22 more land to create the same amount of milk. And they  
23 increase in enteric emissions.

24           So for all those reasons we should examine this.

25           The Environmental Analysis provided with the

1 draft strategy is inadequate. It mentions that impacts  
2 exist, but often there is no serious discussion or  
3 evaluation of those impacts. For example, on flush to  
4 scrape systems in digesters, you have very little  
5 information except that VOC, NOx, PM may increase or they  
6 may decrease, with almost meaningless evaluation of what  
7 that means. The shoulder shrug does not help us. We can  
8 and should do a better job of evaluating these emissions  
9 impacts.

10 VICE CHAIR BERG: Thank you very much for your  
11 testimony.

12 MR. CATIVIELA: And in conclusion I'd just say  
13 that California dairies have already done more than almost  
14 anywhere else. We're willing to do more, but it must be  
15 done in a smart and strategic way. And we urge you to  
16 direct your staff to work with us to develop a feasible  
17 plan with achievable goals.

18 Thank you.

19 VICE CHAIR BERG: Thank you.

20 MR. BOCCADORO: Thank you. And I'm going to go  
21 fast. Michael Boccadoro also on behalf of Dairy Cares.

22 And I'm going to try and give you a little  
23 perspective on why I think Secretary Ross said she was  
24 scared of targets. And it's because they really are  
25 unrealistic.



1           We've already talked about the 14 dairy  
2 digesters -- it's not 13. We commissioned the 14th  
3 earlier today just a few short miles from here and were  
4 able to make it back.

5           We have 14 digesters today. The plan assumes  
6 we're going to have 500 -- or dairy digesters serving 500  
7 dairies by 2030. How do we go from 14 in the last 12 to  
8 14 years to 500 in the next decade?

9           Unachievable.

10          The plan is built on the concept of 55 regional  
11 digesters where we would haul waste from multiple dairies  
12 to a centralized location. We don't have one like that  
13 today in California. We had one. It failed down in the  
14 Chino basin due to economic reasons.

15          So again, we think that that part of the plan is  
16 unachievable.

17          The plan assumes significant revenue from dairy  
18 methane into transportation projects. And I'm one of the  
19 biggest proponents of that. And I know this is an area  
20 Mr. Sperling has a lot of expertise. But that -- those  
21 revenues, 80 percent of the revenues in a dairy biogas to  
22 transportation project comes from LCFS in wind credits.

23          Okay. Those credits are volatile, they're  
24 unpredictable, and they're politically dependent. You can  
25 finance today a dairy biogas to transportation fuel on

1 credits. Impossible. If you can find a bank that will  
2 give us the loans, we'll put the projects.

3 That's another reason why we think it's highly  
4 unlikely these projects are going to get built.

5 The plan assumes the overwhelming projects will  
6 inject pipeline biomethane. We don't have a single  
7 project -- dairy project in California injecting pipeline  
8 biomethane today. We'd like to get there. But we're not  
9 there yet. We're certainly not going to have 500 of those  
10 projects in the next 7 to 10 years.

11 And, finally, the plan assumes regulation at some  
12 point in the future. Understand, once you regulate and  
13 mandate these types of projects, the reductions -- the  
14 revenue streams from the credits go away. Okay. Or they  
15 get substantially reduced, and make the economics, that  
16 are already difficult, worse. And for that reason, we  
17 think it's unrealistic.

18 So in closing, we're not saying, as others have  
19 said today, that we can get more done. We can. But we  
20 need to do this in a smart way. If we do it in a smart  
21 way and work with staff to come up with a realistic plan,  
22 we cannot only get methane reductions, and significant  
23 ones, but we can actually improve water quality in the San  
24 Joaquin Valley and we can dramatically improve air quality  
25 through replacing diesel with renewable transportation

1 fuel.

2 Please direct your staff to continue working with  
3 us to get to a reasonable plan.

4 I'm happy to answer any questions people have.

5 VICE CHAIR BERG: Thank you.

6 MR. BOCCADORO: Thank you.

7 MR. ANGERMANN: Good afternoon. My name is Till  
8 Angermann. I am the technical program manager for the  
9 Central Valley Dairy Representative Monitoring Program,  
10 and I have been providing technical services to that  
11 organization since its inception in 2010.

12 I also served on the ag expert panel convened by  
13 the State Water Board in 2014 to make recommendations for  
14 reduction of nitrates in groundwater.

15 I'm presently leading the research efforts in  
16 collaboration with University of California agronomists  
17 towards identifying dairy farming management practices  
18 that are protective of groundwater quality.

19 The proposed SLCP reduction strategy proposes  
20 conversion of flushed areas to solid scraped areas as a  
21 means to reduce methane emissions. I am here today to  
22 bring to your attention the fact that the strategy's  
23 proposal fails to consider, let alone solve, very basic  
24 realities of nutrient management and water quality  
25 protection.

1 Nitrogen is one of the primary elements that  
2 farmers apply to crops to support plant growth. Nitrogen  
3 uptake is crop specific and it varies throughout the  
4 growing season.

5 Corn, which is the most important forage crop  
6 grown by California dairies, is known to agronomists as  
7 being particularly challenging for nitrogen management  
8 because uptake is extremely variable throughout the  
9 growing season.

10 One of the most basic tasks for a farmer is to  
11 match in applications to the crop demand to ensure good  
12 yields and minimize impacts to groundwater. Dairy farmers  
13 presently do this by blending liquid manure with  
14 irrigation water at different rates throughout the growing  
15 season. Converting dairies from flush to scrape converts  
16 manure from the liquid to the solid form and it derails  
17 the mechanism for delivering manure nutrients to crops  
18 when they are needed for plant growth. There is currently  
19 no application mechanism to deliver solid manure  
20 throughout the growing season to the crops.

21 So the strategy's proposal to convert dairies  
22 from flush to scrape removes dairy operator's ability to  
23 locally recycle manure nutrients by fertilizing the crops  
24 at the right rate throughout the crop growing season.

25 Worse, it would require farmers to purchase large

1 amounts of synthetic fertilizer to replace the manure  
2 nutrients that they can no longer use while creating  
3 another yet-to-be-solved challenge. The farmers would  
4 have to secure a reliable mechanism to export vastly  
5 increased amounts of solid manure. There is presently no  
6 market for this low value commodity, which can  
7 economically be hauled over short distances only.

8 My colleagues and I will provide more detailed  
9 written comments to you on this issue. So we urge you and  
10 your staff to consider conversions from flush to scrape  
11 much more carefully before relying on it as a strategy for  
12 reducing GHG emissions.

13 Thank you.

14 VICE CHAIR BERG: Thank you.

15 Cynthia.

16 MS. CORY: Cynthia Cory, California Farm Bureau.  
17 Thank you, Vice Chair Berg.

18 This has been said and I'm going to say very  
19 short and sweet: If we don't keep it voluntary, you're  
20 going to break the number one commandment of AB 32,  
21 leakage. And you're going to get it. They will leave.  
22 We will increase are carbon footprint. And we will, I'm  
23 sure, as many of us enjoy our many flavors of yogurt and  
24 our wonderful cheese, they'll come from North Dakota and  
25 Nevada instead of Lodi and Sonoma, and that is a travesty.

1           So we need to rethink it. I -- Dr. Sperling, I  
2 encourage you, if you haven't gotten a full answer about  
3 why these aren't working and why we only have 14 now in  
4 this State after trying really hard, I assure you we can  
5 give you more answer.

6           I would encourage you to turn to page 109 or 114,  
7 it depends on -- I pulled mine off the web a little  
8 earlier. But Chapter 8, Table 11. And it's got all of  
9 the economic assumptions there. As Michael said earlier,  
10 if we don't have RIN credits and we don't have LCFS  
11 standard - which you know very much about - then these all  
12 go away. Those assumptions that these are built on, all  
13 that revenue, all that cost effectiveness, goes away.

14           So there's folks out there that are willing to do  
15 it. But we got to work with them. We've got to keep this  
16 voluntary.

17           And I ask you to ask the staff hard questions, to  
18 look at these assumptions carefully. And we want to work  
19 with you. We want to work with the staff and continue to  
20 find a viable solution. But what you have in front of you  
21 now is not it.

22           Thank you.

23           VICE CHAIR BERG: Thank you, Cynthia.

24           Stacey.

25           MR. SULLIVAN: Thank you. Stacey Sullivan,

1 Policy Director with Sustainable Conservation.

2 We appreciate the opportunity we have had over  
3 the last year and a half to work with the staff on --  
4 based on our experience -- a long-standing experience  
5 working with the dairy industry on issues having to do  
6 with waste -- the environmental impacts of waste on air,  
7 water, and greenhouse gas emissions.

8 We appreciate -- we've appreciated being able to  
9 work with them. We appreciate the fact that a study that  
10 we did last year has -- was cited by the staff in the  
11 draft.

12 We're an environmental organization. We have  
13 worked with the dairy industry, but we are not the dairy  
14 industry.

15 Our concern is to get real reductions in  
16 greenhouse gas and real reductions in risks developed in  
17 air and water quality as well. We are very concerned  
18 about leakage. We feel -- and we got a very strong sense  
19 from the administration that what they're trying to do is  
20 to create like a model approach to greenhouse gas  
21 reduction that can be replicated in other places.

22 I'm very uncomfortable being up here having had  
23 to fill out an "opposed" card. I wish there had been one  
24 that was -- said "concerned and puzzled."

25 (Laughter.)

1           MR. SULLIVAN: But the -- we will be submitting  
2 comments. We made a lot of comments on the draft  
3 regulations. We feel that to a very large extent they  
4 were not addressed. But there are two new elements in the  
5 current draft that we want to bring attention to. One is  
6 the increased emphasis on regulation. And also the  
7 economic analysis, particularly those areas based on, as  
8 Michael was referring to, some of the assumptions being  
9 made on both the costs and the benefits that can be  
10 accrued from -- both from flush to scrape conversion and  
11 from vehicle fuel and pipeline injection.

12           We are concerned that this regulatory process is  
13 going to have the effect of locking in the targets and  
14 making -- basically making them mandates before we  
15 understand how we're going to get there. And we feel  
16 that's backwards. We really feel that we should know what  
17 is it -- you know, what is the cost of flush to scrape;  
18 what are the exact reductions that we can get from it;  
19 what are the possible impacts on other environmental  
20 concerns, particularly air quality? Do we have a market?  
21 Do we have an infrastructure? Do we have the technology  
22 for vehicle fuels? Do we have these things for pipeline  
23 injection? Have we figured out how to deal with the  
24 interconnection issue?

25           But these are things that need to be figured out



1 before any steps are taken to turn any of these targets  
2 into mandates. And we feel that keeping things voluntary  
3 is the way to go.

4 Thank you.

5 VICE CHAIR BERG: Thank you very much.

6 Brent Newell.

7 Okay. Nathan.

8 Oh, Brent, there you are.

9 MR. NEWELL: Thank you, Madam Vice Chair, members  
10 of the Board. I'd like to thank the staff for all their  
11 work on the plan. It's -- you know, there's been multiple  
12 drafts, multiple workshops. They also did an evening  
13 workshop to ensure community participation.

14 The plan is supposed to prioritize the  
15 development of measures that provide co-benefits, the air  
16 quality, the water quality that benefit disadvantaged  
17 communities. So within that lens, we want to applaud the  
18 plan's mandatory regulation strategy for manure  
19 management.

20 We also want to highlight that the plan does not  
21 require mandatory regulations for enteric emissions, which  
22 account for 20 percent of the State's emissions. So it's  
23 important that the plan also address enteric emissions and  
24 not leave that to a voluntary strategy.

25 The goal here is to reduce methane, not to

1 achieve the lowest greenhouse gas intensity per gallon of  
2 milk produced in California. We've got to reduce methane.  
3 Dairies emit 45 percent of the State's methane, at a  
4 global warming potential of 84. That's huge. That's a  
5 huge impact.

6           Now, this Board and other leaders in California  
7 made a big deal about the Aliso Canyon leak at Porter  
8 Ranch. Well, dairies on average per day emitted 2.3 times  
9 the amount of methane that came out of Aliso Canyon. Even  
10 at the peak of that leak dairies in California emitted 1.4  
11 times the amount of methane coming from Aliso Canyon.  
12 There is no reason why the Board should continue a  
13 voluntary control strategy for dairies that it has been  
14 using since the 2008 scoping plan. Years of unabated  
15 methane emissions have entered the atmosphere.

16           It's time to immediately and as quickly as  
17 possible adopt and implement mandatory controls at dairies  
18 to reduce these emissions.

19           Towards those ends, the Board should support the  
20 transition to pasture-based systems. Pasture-based  
21 systems provide multiple co-benefits, including carbon  
22 sequestration and healthy grasslands. That's a negative  
23 greenhouse gas impact. Pasture-based systems avoid the  
24 emissions of methane from liquefied manure.

25           Pasture-based systems also don't rely on massive

1 amounts of have corn silage, which is the largest source  
2 of volatile organic compounds in the San Joaquin Valley.  
3 We're talking about massive co-benefits.

4           Digesters burn methane gas and emit NOx in that  
5 same air basin in the San Joaquin Valley. That doesn't  
6 benefit disadvantaged communities. It harms disadvantaged  
7 communities by increasing emissions compared to the  
8 emissions from a natural gas combined cycle power plant.  
9 Those power plants are much more efficient at generating  
10 electricity than dairy digesters.

11           So in conclusion, please regulate methane.

12           Thank you.

13           VICE CHAIR BERG: Thank you very much.

14           MR. BENGTTSSAN: Good afternoon, Board members.

15 Nathan Bengtssan with PG&E.

16           Let me start by saying that PG&E strongly  
17 supports the State's GHG reduction goals and that the  
18 ARB's focus on SLCs is highly warranted and rightly  
19 introduced as a temporal dimension into the State's  
20 evaluation of GHG emissions.

21           We've done a great deal of work on methane  
22 emissions from our natural gas system in recent years.  
23 And we're proud to have been recognized by the Obama  
24 Administration for some of our voluntary efforts on the  
25 future of methane emissions. We're with you on this.

1           There are many parts of this plan to celebrate in  
2 our written comments and I will address them in my now 2  
3 minutes 30 seconds today. I want to focus on the  
4 sector-specific targets for methane.

5           So, believe it or not, with this baby face, I had  
6 been a professional long enough to have been a third grade  
7 teacher in a past life. And in the classroom, as in  
8 combating climate changes, as this group well knows,  
9 setting good goals is critical. They should be ambitious  
10 but feasible. Where you're going, transparent, how you  
11 get there. And based on good data, where you're coming  
12 from.

13           So first the idea of where we're going and how  
14 we're going to get there. ARB's methane emissions  
15 reduction target for the oil and gas sector is based on a  
16 U.S. EPA proposed emission standard, which might be an  
17 imperfect proxy for California.

18           Also, reductions are expected from rules and  
19 procedures still under development at the ARB and CPUC and  
20 elsewhere. And the SLCP does not provide a really good  
21 breakdown of the emissions reductions for each measure.  
22 Nor does a critical component, the CPUC leak OAR, quantify  
23 expected reductions.

24           So we urge the ARB to continue the discussion  
25 with us and the rest of industry to ensure that the

1 methane target for the natural gas sector is indeed  
2 achievable. At the least, clear quantitative lines need  
3 to be drawn between the sector-specific targets in each of  
4 the measures to obtain them.

5 More generally on the state of goals, it's  
6 critical that the individual pollute reductions broadly,  
7 take into account technical potential and cost  
8 effectiveness.

9 GHG reductions are best achieved under a flexible  
10 policy framework that optimizes sustainable and  
11 cost-effective reductions from the portfolio. And the  
12 SLCP does not currently provide sufficient information on  
13 total cost and associated emissions for all of those. It  
14 does in some cases.

15 We recommend that the strategy consider these  
16 issues in greater depth before finalizing the  
17 sector-specific target.

18 Also really quickly, where we're coming from, the  
19 issue of data. I don't think any teacher would use their  
20 third grader as kindergarten beginning of your diagnostics  
21 to plan for their end-of-year goals. Similarly, we urge  
22 the ARB to update the methane inventory data and  
23 business-as-usual scenarios before finalizing the  
24 emissions targets.

25 The 2013 ARB emissions inventory uses 2007 oil

1 and gas survey to estimate emissions. This may not  
2 capture the many gas infrastructure improvements that have  
3 been made. And additionally there are other academic  
4 efforts and regulatory efforts to improve this inventory.  
5 We hope that they're considered. And we look forward to  
6 working with staff on hopefully pushing these refinements  
7 forward.

8 Thank you very much.

9 VICE CHAIR BERG: Thank you.

10 MR. SKVARLA: Hi. My name is Mikhael Skvarla.  
11 I'm here on behalf of the California Council for  
12 Environmental and Economic Balance.

13 We appreciate all the work that staff's done.  
14 However, we're here to -- we've got some concerns and  
15 questions.

16 Initially we question the environmental and  
17 economic efficacy of single emission caps of short-lived  
18 climate forces. We believe that a comprehensive climate  
19 policy is the best way to approach a climate change in  
20 general. And the Pacific Northwest Laboratory has brought  
21 this up in a study from 2013 that the benefits of going  
22 directly at methane, black carbon, and other short-lived  
23 climate forcers may not get the outcome for the costs that  
24 we're looking to achieve. And since economics and the  
25 budget is finite, we must encourage you to go for the

1 biggest bang for the buck, which we still believe is the  
2 Cap-and-Trade Program.

3           Furthermore, we have concerns about how these  
4 individual caps in some of the proposed regulations may  
5 impact the Cap-and-Trade Program, specifically  
6 additionally and the ability to -- of the flexibility that  
7 that program provides in reducing costs and allowing us to  
8 achieve great emission reductions for the lower possible  
9 costs.

10           And, again, the 20-year versus hundred-year  
11 values that -- the global warming potential, that is kind  
12 of factored in with the -- as we look at the programs as a  
13 whole. By focusing on a 20-year value versus a  
14 hundred-year value, it puts us out of synch with the  
15 international progress that's taking place right now. And  
16 we want to make sure that our base lines are also in synch  
17 with those. And this policy proposes a different base  
18 line than what we've base -- what we've been moving  
19 forward with, which was 1990. By saying 1990 on the black  
20 carbon front, we lose all the emission reductions that  
21 we've achieved. And a research project that's been  
22 presented in front of this Board has shown that we are 85  
23 percent below 1990 levels for black carbon due to our  
24 diesel rules.

25           Now, you're discounting the billions of dollars

1 of investment by industry and the compliance entities in  
2 making that progress and misleading the public in a  
3 certain sense that they are unaware of the fact that now  
4 we're trying to achieve another 50 percent on top of that  
5 85 percent. Which I think roughly on the back of the  
6 envelope is 96 percent reduction from 1990 levels. It's  
7 pretty substantial and creates some issues when you start  
8 to think about that from anthropogenic sources only, which  
9 is what the \*\*Lar legislation proposes. We do believe  
10 that looking at the black carbon from the sense of  
11 forestry is a great thing, because a forest fire can often  
12 diminish all of the efforts that have been made in the  
13 SIP.

14 So with those, we'll present the rest of our  
15 comments in writing.

16 Thank you.

17 VICE CHAIR BERG: Thank you very much.

18 Bonnie, we're going to go ahead and take a  
19 10-minute break to give our reporter a break.

20 But we're going to stick to 10 minutes. I'm  
21 actually going to sit here and just do email.

22 (Laughter.)

23 VICE CHAIR BERG: So be back 10 minutes. Okay?

24 Thank you very much.

25 (Off record: 3:43 p.m.)



1 (Thereupon a recess was taken.)

2 (On record: 3:50 p.m.)

3 VICE CHAIR BERG: So if we can get back to our  
4 seats quietly, then we will have Bonnie Holmes-Gen start  
5 us off.

6 Thank you, Bonnie.

7 MS. HOLMES-GEN: Thank you, Vice Chair Berg and  
8 Board members, and thank you for the 2 minutes 41 seconds.

9 The American Lung Association in California and  
10 health organizations are strongly behind your efforts to  
11 develop and adopt this short-lived climate pollutant  
12 package, or what we call the super-pollutant package.  
13 We're strongly supportive of the targets, the regulatory  
14 measures, incentives, and the phaseout of harmful  
15 pollutants.

16 We believe the targets are necessary and  
17 achievable and long overdue. And we -- we certainly  
18 support incentives, are supporting over 200 million in  
19 incentives. The Governor's proposal. And we're  
20 supporting augmentations of those incentives. But there's  
21 nothing that can replace the certain and ongoing emission  
22 benefits that we can get from regulations. So we strongly  
23 support that emphasis.

24 We know that there will be concrete health  
25 payoffs from the measures that are in this strategy. And

1 we appreciate that you have a health analysis and hope you  
2 continue to flesh out some of those benefits.

3           Just to quickly run through. These measures are  
4 going to cut heart, lung, and cancer risk hospitalizations  
5 and premature deaths associated with pollutants like  
6 diesel exhaust, residential wood smoke and the smoke from  
7 fires, improve local air quality, reduce food and security  
8 and food waste. We've had a long discussion about that.  
9 And reduced the broader health impacts from climate change  
10 as we substantially slow the climate change -- the  
11 acceleration of climate change, which is so important for  
12 our health leaders.

13           Some quick recommendations as we move forward  
14 with this strategy. We urge you of course to maintain a  
15 strong focus on these regulatory approaches, as opposed to  
16 voluntary approaches to cut super-pollutants and improve  
17 health.

18           We are strongly supportive of regulation on the  
19 dairy waste and oil and gas sectors that you've discussed  
20 today. It's really important to move forward as quickly  
21 as possible with these measures.

22           We support a strong emphasis in the strategy on  
23 transitioning the freight and off-road equipment sector to  
24 zero emission as broadly and as quickly as possible. I  
25 know you had a long discussion this morning. And we

1 appreciate the goals, targets and specific emphasis in the  
2 mobile source strategy and the sustainable freight  
3 strategy on zero emission.

4           And we support action to reduce wood burning for  
5 residential heating. And we'd like to work with you and  
6 work with the air districts to do everything we can to  
7 align the regulatory efforts and incentive programs to  
8 support this goal of moving away from residential  
9 combustion. It's really important for health and air  
10 quality attainment around the State.

11           So, finally, we will be submitting a letter. We  
12 already have a letter in with over 34 health organizations  
13 supporting strong targets to cut super-pollutants.

14           Thank you for your time.

15           VICE CHAIR BERG: Thank you very much, Bonnie.  
16           Bill.

17           MR. MAGAVERN: Hi. Bill Magavern with the  
18 Coalition for Clean Air. And we've been for many years  
19 advocating for action to reduce these short-lived climate  
20 pollutants. So today's an important step along the way.  
21 It's urgent that we reduce these pollutants, both because  
22 it buys us some time for the carbon reductions we need to  
23 get out of the climate crisis; and also because many of  
24 these pollutants are also harmful at ground level.

25           So we worked closely Senator Lara on SB 605, and

1 I would say that the plan you have before you today is a  
2 faithful implementation of that law, although it's a  
3 little bit past the deadline. Which I say just to  
4 emphasize the fact that we need to move speedily towards  
5 implementation.

6 I also want to make clear that before SB 605 this  
7 Board already had the authority to address these  
8 pollutants, both under AB 32 and under the California  
9 Clean Air Act. So whether SB 1383 passes or not - I hope  
10 it does - but you will continue to have that authority.

11 It is essential that we use a time frame of 20  
12 years or fewer because of the urgency of getting these  
13 pollutants under control. And no sector should be exempt.  
14 The organics diversion goal is absolutely crucial, and we  
15 heard Howard Levenson from CalRecycle say that it's  
16 doable. Doing it by 2025, we don't need any new  
17 inventions to make that happen. That can be done.

18 The oil and gas rule also, which has been pending  
19 here for a while, that needs to be adopted by ARB. And we  
20 need to make sure that in the future we don't have any  
21 more Aliso Canyons. That catastrophe cannot be repeated.

22 The dairies of course need to be regulated. As  
23 you've heard, they are the biggest emitter of methane in  
24 the State. Purely voluntary approaches don't work. We  
25 need a mix of carrots and sticks.

1           And the HFC phase down, we also support where  
2 there are substitutes available. We need to get those  
3 more greenhouse friendly refrigerants into place as soon  
4 as possible.

5           So we are eager for this plan to go forward. I  
6 know you're not doing that today, but hope that you will  
7 adopt it later this year.

8           Thank you.

9           VICE CHAIR BERG: Thank you, Bill.

10          Martha.

11          MS. ARGUELLO: Good afternoon. My name is Martha  
12 Arguello. I'm the executive director of Physicians for  
13 Social Responsibility, and also a member of EJAC for the  
14 last -- well, since 2006.

15          I want to -- I'm very excited that this plan is  
16 finally out. We want to commend the staff, and we want to  
17 thank the staff for also incorporating some of the EJAC  
18 recommendations, and we'll continue to work and push to  
19 make sure more of those are incorporated.

20          Our organization -- as an organization,  
21 Physicians for Social Responsibility has long argued that  
22 we need to act on the short-lived climate pollutants to  
23 stabilize the climate, but also because these pollutants  
24 at the ground level, at the community level will have real  
25 impacts on health. And reducing these will have real

1 benefits to people.

2           So I want to focus right now around the methane  
3 issues. We want to make sure that around the dairy  
4 regulations that they are mandatory. We have many years  
5 of experience of watching voluntary programs fail. And  
6 this is too important for the health of our communities  
7 but also to start finding the alternatives so that we can  
8 have milk and that we don't have to sacrifice health of  
9 the planet in ours to have milk. We can figure that out.  
10 But we're not going to do that if those measures are  
11 voluntary. We're going to have to lead the horse to water  
12 and make that horse produce milk and then drink it.

13           (Laughter.)

14           MS. ARGUELLO: So, yes, I know it's not going to  
15 be that easy.

16           And we also want to focus on the oil and gas  
17 issues. We work with many urban communities that are  
18 living next door to oil and gas operations. And we  
19 need -- we need assistance because we're finding that  
20 local governments are not coming to the rescue of  
21 communities that live on those fence lines. So we are  
22 depending on you to have strong oil and gas regulations so  
23 that we're not pulling oil where people live, learn,  
24 worship, and that we don't have another Aliso Canyon. And  
25 that my big fear is that the next one will happen in a low

1 income community, a community of color that is already  
2 being ignored for many years around these issues.

3 So, again, we encourage you to take strong  
4 action. And we will -- both EJAC but also my organization  
5 and many of our allies will continue to work with you to  
6 ensure that we stabilize the planet, clear the air, and  
7 make it healthier for everyone.

8 Thank you.

9 VICE CHAIR BERG: Michael -- sorry, Tim. Tim  
10 Carmichael.

11 MR. CARMICHAEL: Good afternoon, members of the  
12 Board. Tim Carmichael with Southern California Gas  
13 Company. We're generally supportive of the plan before  
14 you. We're going to submit more comments in writing.

15 I'll just flag one issue. We've been in touch  
16 with the staff, Ryan and others, talking about some of the  
17 data that's being used on the oil and gas portion that was  
18 referenced earlier. But there's a disconnect between what  
19 we think some of the data points are and what staff seems  
20 to be using, both historical and projections. And we'll  
21 continue to work with the staff on that piece.

22 Thank you very much.

23 VICE CHAIR BERG: Thank you very much.

24 Gary.

25 MR. LISS: Gary Liss. I'm here representing Zero

1 Waste U.S.A. I'm also on the board of the U.S. Zero Waste  
2 Business Council and the National Recycling Coalition.

3 I'm here to strongly support the 90 percent by  
4 2025 goal to phase out organics from landfill. This is  
5 critically important, particularly to get food to people,  
6 then animals, and getting the organics back to the soil.

7 There are many national initiatives that are also  
8 helping to support this. In your document you reference  
9 the Paris Climate Accords and the President's Climate  
10 Action Plan and his methane initiative. But there's also  
11 very exciting initiatives that are also underway. I just  
12 participated in the G7 alliance on resource efficiency. I  
13 had -- the first U.S. workshop in Washington D.C. This is  
14 an effort by the G7 nations to focus on efficiency as the  
15 key to the circular economy and the future for sustainable  
16 materials management.

17 Those are all the key new buzz words that  
18 everyone's talking about, EPA's promoting.

19 EPA also has the food recovery challenge. It's  
20 the first national goal for solid waste ever in the  
21 history of the United States. So the fact that this could  
22 contribute to helping provide the resources for the  
23 support of getting food to people for those who need it is  
24 really important.

25 The EPA has a website on managing and



1 transforming wastestreams that I just helped to develop.  
2 Over five years of effort to develop a hundred different  
3 policies and programs and 250 examples with real life  
4 examples of ordinances, programs, contracts, and other  
5 initiatives are listed, and if you go to EPA.gov, managing  
6 and transforming waste streams.

7           In zero waste it's all about efficiency and it's  
8 also about getting the health benefits. I just heard Bill  
9 Magavern and a couple of other people speak about the  
10 health benefits. I'd really encourage you to strengthen  
11 that. When I worked on the Prop 23 -- the anti-Prop 23  
12 campaign that was to repeal AB 32, that was one of the  
13 messages we were trained on. I was mayor and on the  
14 council of Loomis, California, at the time. And in the  
15 training they emphasized that people get clean, they get  
16 health. That's what really is most important to stress.

17           So, yes, climate change is important, and I don't  
18 want to see the 80 feet rise in 10,000 years that we're  
19 going to see in the oceans.

20           But what people get is the health benefits. So I  
21 really encourage you, as you roll this out, as you  
22 highlight this, that emphasize that the health benefits  
23 are really important.

24           For our particular piece of the plan on organics  
25 out of landfills, one of the things that we've heard is

1 that some landfill operators are saying, "No, no, keep it  
2 in there." These are the same operators that have worked  
3 to reverse bans of yard waste in other states to get more  
4 organics in landfill in order to create landfill gas  
5 recovery systems. That is the least efficient way to  
6 recover that energy. If you want to recover energy, put  
7 it in anaerobic digesters, don't put it in the landfill.

8 Thank you for your time.

9 VICE CHAIR BERG: Thank you very much, Gary.

10 Dr. Sawyer.

11 Welcome.

12 DR. SAWYER: Thank you, Vice Chair Berg and Board  
13 members. I'm Bob Sawyer. I'm a professor of energy  
14 emeritus of the University of California at Berkeley and  
15 former chair of the Air Resources Board.

16 When I arrived at the Board 10 years ago, I had a  
17 to-do list. And on that to-do list was acting on  
18 short-lived climate pollutants. Staff at that time  
19 convinced me it was a bad idea, citing three reasons:

20 One, that the scientific understanding,  
21 especially the quantification of the warming potentials,  
22 the appropriate time, and the inventories were just not  
23 adequate to take action; two, that developing a regulatory  
24 policy would be extremely complicated; and, three, that  
25 the staff resources were inadequate.

1 I'm delighted to see that all of those blocking  
2 reasons have disappeared and that you're ready to move  
3 ahead at this time.

4 I commend the staff on the program that they're  
5 bringing forward, and I encourage the Board to act  
6 appropriately when it's presented to them.

7 Thank you.

8 VICE CHAIR BERG: And thank you. And thank you,  
9 Dr. Sawyer, for all your dedication and work.

10 Sean Edgar.

11 MR. SEAN EDGAR: Vice Chair Berg and Board  
12 members. Sean Edgar. I'm the director of Clean Fleets.  
13 And I'm going to have some focused comments on fleet  
14 emissions, black carbon from the non-forest sector.

15 I'll just open by saying that the hour is late,  
16 the time is short. And my working title was going to be  
17 "How to get from here to there." But I'm not Burt  
18 Lancaster, so it won't be "From Here to Eternity." I'll  
19 make my comments very focused.

20 The staff estimate on black carbon emissions  
21 looks at the base case of 2013, and 58 percent of the  
22 black carbon emissions are from mobile sources. And that  
23 drops to 32 percent in the 2030 case, and presumably  
24 reflects the reduction in emissions that are anticipated  
25 from the historic diesel regulations I've been working on

1 for the last 16 years with the Board.

2           And I guess my only challenge there would be,  
3 it's a great projection but they're efforts that have not  
4 yet occurred, and I'm not certain that this -- you know,  
5 having been in this chamber for many years on how  
6 aggressive the Board makes the regulations, I'm challenged  
7 that, similar to the testimony on sustainable freight  
8 earlier today, without adequate resources to make the  
9 investments that are needed, I'm not sure that California  
10 fleet owners are going to get to the clean fleets that the  
11 Board envisions.

12           So I have a couple focused items specific to  
13 small fleets if 41 percent of the trucks are still owned  
14 by small fleets. And those decision points are somewhere  
15 over the next two to four to six years for them to make  
16 decisions on how to get to the cleanest vehicle, absent  
17 the incentives for them to get to the cleanest vehicle,  
18 they aren't going to get there on their own. And I say  
19 that because on the Board's behalf I've been out in front  
20 of over 5,000 fleet owners doing training across the  
21 country on your regulations and many of the fleet owners  
22 that I speak to just aren't quite ready to get to the  
23 first clean truck, let alone the second, third, and fourth  
24 or fifth cleaner truck for technology that's not really  
25 moving strongly today.

1           So I'll just reiterate that by saying that Prop  
2 1B is the last year here, and so that's going to -- my  
3 encouragement will be that the Board should redouble its  
4 efforts toward finding financial incentives to get to  
5 those cleaner trucks if we're going to be reducing black  
6 carbon emissions together.

7           In the time remaining I'll just reiterate my  
8 colleague Julia Levin did a great job on talking about  
9 harnessing a larger portion of the low carbon  
10 transportation funding at \$500 million, harnessing more of  
11 that to get the low carbon transportation. Because what's  
12 currently proposed for the near-zero engine is about  
13 \$23,000,000, and we would like to see funding for that  
14 increased in the short term. So if a short-term action is  
15 needed to reduce short-term pollutants, we're here to work  
16 with you and suggest that you strengthen the plan in the  
17 ways we've recommended.

18           VICE CHAIR BERG: Thank you very much, Sean.  
19           Neil Edgar.

20           MR. NEIL EDGAR: Good afternoon.

21           VICE CHAIR BERG: Good afternoon.

22           MR. NEIL EDGAR: Or good evening. I'm Neil Edgar  
23 on behalf of the California Compost Coalition, and we're  
24 here in full support of the methane reduction strategy  
25 elements related to landfill -- removing landfill

1 organics.

2           We represent about half of the current compost  
3 production in those materials that are being moved.  
4 That's about 10 million tons of material, putting them to  
5 higher and better uses in climate, smart agriculture,  
6 water efficient landscapes, renewable fuels production and  
7 other purposes that have positive impacts in all five of  
8 the pillars.

9           We are selling all of the compost that we can  
10 produce. Markets continue to grow. We've heard from  
11 landfill owners today, both public and private, who are  
12 opposed to removing those organics from their income  
13 stream. We understand that. It's probably a problem for  
14 them.

15           Another myth that I've heard today was landfill  
16 gas being a renewable resource. I don't think we can  
17 consider a waste byproduct a renewable resource, but some  
18 folks will likely shave it that way.

19           Our members are eager to get to work achieving  
20 the goals that you're setting forward. We have many  
21 operators ready to develop the needed capacity. This  
22 strategy will provide some certainty of feedstock. That  
23 will help provide clarity of investment.

24           It will help stimulate investment by building  
25 economies of scale. AB 1826 is a good first step, but

1 it's only the commercial sector. It doesn't go far enough  
2 or fast enough, and we're hearing backlash from  
3 jurisdictions in Southern California in particular that  
4 they don't believe it's enforceable and they're just going  
5 to wait for somebody to show up and tell them they need to  
6 be in compliance. We don't know when that's going to  
7 come. But in the meantime that's inhibiting the ability  
8 of our industry to grow. And investors do not like  
9 uncertainty.

10           They will -- people will come forward, people  
11 will step up. They'll see this as a market signal to  
12 start moving forward on projects. Some of the landfill  
13 operators you heard from today are fully prepared to put  
14 composting facilities at their landfills. And if you  
15 force the issue, they will continue to develop those  
16 operations.

17           You've heard about cost factors. And, yes, it  
18 will be costly. If you refer to Appendix D, Table 23 in  
19 your document, you'll see that the combination of AD and  
20 compost is most cost efficient. The Legislative Analyst's  
21 Office issued a report last week that said organics  
22 processing loans and grants were among the most cost  
23 efficient investments, with greenhouse gas reduction funds  
24 right at the top of the list of about 50 items.

25           So we look forward to working with staff and

1 helping to move forward with a policy that seems to make  
2 sense. But the time is now to move forward. Waiting on  
3 this is only going to delay implementation.

4 Thanks.

5 VICE CHAIR BERG: Thank you very much.

6 And our last speaker, John Dans.

7 MR. DANS: It's a hard act to follow the two  
8 Edgar brothers. And for the record, I'm not the third  
9 Edgar brother. He's not here today.

10 My name is John Dans, and I'm the executive  
11 director of the California Resource Recovery Association.  
12 We have a variety of members. But germane to this  
13 conversation, we have many who are local recycling  
14 coordinators who work for public agencies.

15 We have been and we continue to be supportive of  
16 your efforts to address short-lived climate pollutants,  
17 particularly through the reduction strategy that you're  
18 currently fine-tuning.

19 We naturally have a particular focus on methane  
20 emission reductions from landfills. We encourage you to  
21 continue your work with CalRecycle implementing the  
22 provisions of AB 1826. It's operational now. It presents  
23 immediate practical challenges for many of our members.  
24 And we hope that ARB and CalRecycle coordinate those  
25 efforts between the regulations that we see coming



1 downstream and the requirements of AB 1826 right now.

2           Once again, we're supportive. We appreciate the  
3 opportunity to say so.

4           Thank you.

5           VICE CHAIR BERG: Thank you very much.

6           Well, that concludes our witness lists for today.  
7 Since today is the first of two public hearings, there is  
8 no need to close the record today. And we will go to  
9 Board comments.

10           Before we do that, I would like to ask Richard  
11 Corey if he could help the Board frame up the fact that  
12 what we're looking at today is a plan much like the  
13 scoping plan. And we've heard some very deep concerns,  
14 specifically from the dairy, and, quite frankly, from the  
15 landfill and organic waste and a few others about the  
16 suggested reductions, about the cost containment, about  
17 the investments that are going to be needed.

18           And the fact that a lot of this does translate  
19 into regulation, can you please for the Board frame up the  
20 conversation so that we understand the -- what the intent  
21 of the plan is and what you're thinking and your staff is  
22 thinking about what you're going to be doing for next  
23 steps and interacting with these stakeholders. And then  
24 event -- this is going to come back to us in a form of a  
25 vote on a plan and how that translates into the next steps

1 of regulation.

2 EXECUTIVE OFFICER COREY: Sure, Vice Chair Berg.

3 So just at the highest level, SB 605 recognized  
4 the importance of short-lived climate pollutants in terms  
5 of their contribution to climate change. And the  
6 directive was develop a plan, basically to, one, look at  
7 the emissions of short-lived climate pollutants in the  
8 State, look at opportunities for reductions. What the  
9 plan does is both those things.

10 The inventory, as best that we can characterize  
11 it, to where the potential opportunities lie. And I'd  
12 characterize it as it clearly identifies options for  
13 further reductions. But I wanted to dig a little bit more  
14 into that.

15 The conversations from the folks really that --  
16 the range of folks that testified, we've had a number of  
17 really constructive conversations. And I think that came  
18 through. Not always necessarily in agreement, but I think  
19 a healthy exchange. And the fact is, what we did in this  
20 draft plan -- and I'm characterizing this -- is put our  
21 cards on the table. Put our cards on the table in terms  
22 of where we believe the reduction opportunities lie, put  
23 our cards on the table in terms of the potential measures,  
24 as well as a current characterization of costs and  
25 benefits. And what I heard from folks, a number of folks

1 say that with respect to the comment deadline of next  
2 week, we're going to be getting a number of written  
3 comments. I think you're going to go, based on what I'm  
4 hearing, pretty detailed in terms of responding to the  
5 information and documentation that we've put out. I  
6 actually am looking very forward to that. I think that  
7 actually is very useful, and that's the kind of exchange  
8 that we need to have. I heard specific concerns about  
9 with respect to, Vice Chair, the point you just made,  
10 dairies and the organics diversion.

11           Heard concerns about barriers, concerns about  
12 interconnection, concerns about leakage. Those are  
13 fundamental issues that need to be having a clear  
14 understanding of the underlying economics, the  
15 opportunities and the risks. And to me, for folks to lay  
16 that out from their perspective, I think its going to be  
17 really useful.

18           So from a next-steps standpoint, here's what I  
19 think needs to happen. We get those comments next week.  
20 And my commitment, our team's commitment is to sit down  
21 with the commenters, particularly on those two areas I  
22 just talked about, organics diversion and the dairy  
23 digester folks. Deep dive, particularly in economics.  
24 That the -- I heard comments about the value of the, just  
25 as an example, low carbon fuel standard RIN credits, which

1 you all know low carbon fuel standard credits are quite  
2 high right now. But I heard concern about you can't  
3 finance against those credits and there's uncertainty.  
4 We're going to do a deeper dive on that conversation.

5 We also need to have a deeper conversation with  
6 respect to leakage concerns. Because you all know that  
7 a -- you know, I'll call it the prime directive for any  
8 Star Trek fans here -- is you don't win if you just push a  
9 business out of state and the activity continues  
10 elsewhere, in fact, often with higher emissions.

11 Understanding what leakage risks -- what the  
12 leakage risks are and the underlying economics is a key  
13 question. It's an important one to us. And I would say  
14 that's embedded in the type of measures that we brought  
15 before this Board. And this is -- it's clearly a priority  
16 of this Board that we not -- that measures and actions  
17 that are taken not translate into significant  
18 leakage-related issues.

19 That'll be the conversation. That'll be the  
20 deeper dive. That'll be the nature of the analysis and  
21 follow-up. And the question's going to be, does that  
22 underlying work -- how does it inform any revisions to  
23 this plan that we will be bringing back to the Board in  
24 the fall? So it will allow time. And I don't think --  
25 this is not going to happen in one meeting. We're going

1 to have to -- we're going to have to iterate on this. But  
2 I think where it starts is a deeper analysis. We  
3 certainly would have constructive conversations. But I  
4 think the report in a way is forcing a deeper level  
5 conversation because the analytics are now in there.

6 I want to answer one -- though one more element,  
7 Vice Chair Berg, because I think it's an important one.  
8 And you posed this question. And I think it's the  
9 distinction between a plan and a regulation or a measure.

10 And I don't want to in any way minimize the  
11 importance of a plan. This plan is really important,  
12 clearly is laying out a roadmap for a priority to deal  
13 with short-lived climate pollutants. It's laying out a  
14 roadmap where we think the opportunities for reductions  
15 are. It's also laying out a roadmap where we think  
16 incentive-based strategies or regulatory-based strategies  
17 would be a viable approach.

18 But if I use the scoping plan as an example. If  
19 you look at the original scoping plan, you could say the  
20 same about the second scoping plan or the update. What  
21 that plan did was lay out -- California has a target to  
22 get to a 2020 GHG -- basically to get to 1990 emissions by  
23 2020. And what that plan did was lay out -- here's our  
24 inventory. Here's where the emissions are currently  
25 coming from. Here's BAU, our best characterization that

1 business is usual in 2020. Here are the opportunities for  
2 reductions, reductions from the HFO -- these. There were  
3 mobile-source-related measures. There were the landfill  
4 measure. About two dozen measures in that plan.

5 But what we found out -- and it was our best  
6 assessment at that point as to where the opportunities for  
7 reductions were. But when the Board acted on that plan,  
8 basically the Board directed us, go forth and do the  
9 analysis on those individual measures. And what that  
10 meant was, even though the plan was a considerable amount  
11 of work, the actual deep dive on individual measures was  
12 even much more, because anything that becomes regulation  
13 typically is a two-year -- at least a two-year process of  
14 iterating, going deeper on economics, often independent  
15 studies, expensive exchanges with a broad spectrum of  
16 stakeholders to ultimately develop a proposal that we  
17 bring back to the Board. And if you ask the question of,  
18 well, you know, how did it play out with the original  
19 scoping plan in terms of -- so you'd identified a number  
20 of measures. I'd put what we actually did and what we  
21 actually brought to the Board in a few different bins.

22 Some measures, we'd actually -- as we identified  
23 them or described in the scoping plan the ultimate  
24 regulation, it was pretty close to what we ultimately  
25 brought to the Board, and we were getting the reductions

1 pretty close to what we anticipated.

2 Others, there -- what we found, we did the  
3 analysis, there wasn't as much there. Some didn't move  
4 forward. We didn't actually move the measures forward  
5 because there wasn't enough opportunity.

6 Some what we actually thought was the measure, as  
7 we worked through the process with stakeholders it morphed  
8 into another approach because it was -- the original  
9 approach as it was conceived in a scoping plan, as you  
10 learn more and go deeper, it was, well, actually this is  
11 not the quite right way to do it. The process allowed for  
12 the natural evolution that plays itself out when you go  
13 through a deeper dive of learning.

14 So I don't look at the short-lived climate  
15 pollutant plan any different -- any differently, because I  
16 think -- and again, I think, again, it's important because  
17 the original scoping plan was important. But the process  
18 of forwards, that sort of learning and evolution that  
19 takes its place -- that takes -- you know, that plays  
20 itself out. But no doubt, if there -- the concerns that  
21 are raised here, we want to get as close to right and  
22 complete as we possibly can. But I think this distinction  
23 between a plan and a regulation, which I heard several  
24 references to it being a regulation, I think the  
25 distinction is an important one to make here.

1           VICE CHAIR BERG: All right. Thank you very much  
2 for framing that up for the Board members.

3           And so I'll start down with Mr. Eisenhut. Will  
4 you kick us off on -- what we're looking for are  
5 recommendations from the Board to the staff as we go  
6 forward with this plan.

7           BOARD MEMBER EISENHUT: Thank you, Vice Chair  
8 Berg.

9           Mr. Corey addressed some of the concerns I had,  
10 but let me work through this. I would suggest that the  
11 answer to Dr. Sperling's question, while it's more nuanced  
12 than this, is largely a matter of access. Because access  
13 for the -- either the gas or the electricity produced  
14 by -- and I'm going to confine my comments to the dairy  
15 sector of this discussion.

16           The access drives the economic benefits. And I'm  
17 aware I believe of a number of shovel-ready digester  
18 projects that are not being moved forward due to the cost  
19 of the access.

20           And so I would suggest as we move forward with  
21 this discussion, while this is not our area of authority,  
22 that we have some responsibility to work with sister  
23 agencies and utilities to create a better access for these  
24 projects.

25           I would -- I do endorse staff recommendation for



1 initial investment. I think that the reduction -- the  
2 cost benefit reduction that's achieved with these projects  
3 is solid and probably deserves a decently high ranking in  
4 terms of investment. It allows for participation on early  
5 adopters, which gives us the opportunity to -- because  
6 otherwise folks would not be inclined to adopt it till the  
7 regulatory deadline, financial incentives are going to  
8 move this process along. And the -- those early adopters  
9 are going to provide the basis for us to continue -- as  
10 Mr. Corey indicated, continue to evaluate projects and our  
11 assumptions.

12 I would request that when we see the plan again,  
13 that there be milestones indicated, reports to the Board.  
14 I won't suggest the -- what the interval would be, but I  
15 would request we have a process for staff and Board review  
16 in a very formal way so that we know where we're -- we  
17 know that we're achieving our goals.

18 On slide 11, there was indication of a work  
19 group. And I would request that -- and again, Mr. Corey  
20 committed to this, although in a slightly different way,  
21 but I would suggest that the work group be sooner rather  
22 than later pre -- before we see you again that this work  
23 group be formed.

24 And that it would include, maybe, but not limited  
25 to, our representatives from the AG community, utilities

1 or the utility commission, CDFA, dairy industry, and dairy  
2 developers.

3           And the topics. And I have to add here that I  
4 think one of the points of pride of this organization is  
5 we are a data-driven organization. And we've looked at  
6 the data in this plan and our analysis and acceptance of  
7 the data -- and I compliment staff, there have been a  
8 number of constituent meetings of seminars -- but our  
9 analysis of the data is very diverse. And I'll leave it  
10 at that, it's very diverse. And this should be data that  
11 is more discrete, lends itself to more agreement in our  
12 understanding of the data, and I would request that that  
13 be one of the agenda items on the work group that our  
14 assumptions are vetted.

15           Including issues like barriers reductions. I  
16 already mentioned that access financing. The issue of  
17 whether the impact of low carbon fuel standard financing  
18 options and cost benefit ratios. Secretary Ross raised  
19 the issue of unintended consequences. And one of our  
20 speakers, as we -- one of the options is converting to  
21 scrape.

22           BOARD MEMBER GIOIA: John, you may want to talk  
23 in the mike. We're losing you.

24           BOARD MEMBER EISENHUT: Oh, sorry.

25           One of the -- Secretary Ross addressed unintended

1 consequences. One of the issues was scrape, has to do  
2 with the manner in which it's used, whether it has really  
3 a positive or a negative effect on water quality. And I  
4 heard enough questions so that I'm not confident that that  
5 option creates the positive impact that we hope it will.

6 So those are my thoughts.

7 VICE CHAIR BERG: Thank you.

8 Dr. Balmes.

9 BOARD MEMBER BALMES: No.

10 CHAIR NICHOLS: Dr. Sherriffs.

11 BOARD MEMBER SHERRIFFS: Thank you, Mr. Eisenhut,  
12 for your comments on the dairy issue.

13 Interesting, we had a big food fight here. This  
14 thing started out in terms of the organic diversion. And  
15 it turned out the food fight was a lot more fun than  
16 playing frisbee with these cow patties.

17 (Laughter.)

18 BOARD MEMBER SHERRIFFS: You know, unfortunately,  
19 you know, the -- we have no choice. We have to address  
20 this. It's big. And would certainly endorse Mr.  
21 Eisenhut's comments in terms of, yes, this is a tremendous  
22 opportunity and we clearly need to move closer together on  
23 it. And they're clearly issues that are beyond our scope  
24 in the sense of power purchase interconnectivity that are  
25 big, big barriers and we need to help move that.

1           On a slightly different issue, a very different  
2 issue -- well, I'm not saying issue -- for oil and gas.  
3 From the Central Valley standpoint, a big concern that  
4 management of methane and oil and gas may lead to more  
5 flaring, may lead to more NOx emissions which would  
6 obviously be a big, big issue in terms of the challenges  
7 we have for ozone and particulate matter. And I know  
8 there have been some very constructive and collaborative  
9 discussions between staff and the San Joaquin district in  
10 terms of better understanding and agreeing on numbers. I  
11 think we're talking order of magnitude 21 tons a day, 4  
12 tons a day. And who knows where it may actually, but  
13 we're certainly in the same ballpark. And those are not  
14 big numbers. Those are not big -- big numbers that I  
15 don't think we can't figure out ways to deal very  
16 constructively with.

17           But want to be certain that we are committed --  
18 we're committed as a board to be cognizant of that,  
19 address that, and not let what we're doing with one hand  
20 create problems with the other hand, that we're thinking  
21 about how we're going to fix a problem that we may create  
22 if we're causing a problem in terms of criteria pollutants  
23 as we address the greenhouse gases.

24           We have to figure out how to make up for that,  
25 where to find funding or other kinds of programs to make

1 that whole.

2 VICE CHAIR BERG: Supervisor Serna.

3 BOARD MEMBER SERNA: Thank you, Vice Chair Berg.  
4 I'm going to keep my comments brief here, and it really  
5 does continue to dovetail off of what I mentioned  
6 earlier -- now much earlier -- about --

7 (Laughter.)

8 BOARD MEMBER SERNA: -- about maybe the tendency  
9 to oversimplify something as complicated as organics  
10 diversion, biodigestion. And as was I think mentioned by  
11 the representative from the League and others, that there  
12 are a number of other very real obstacles that we have to  
13 overcome locally, including, as Larry Greene mentioned,  
14 air quality nuisance issues. There's also a very real  
15 issue with water quality control. And the effort to  
16 maximize the value of any and all byproducts that come  
17 from organics diversion, including the potential for  
18 fertilizer to be one of those products.

19 So I would just continue to encourage staff as we  
20 move forward to please consult with your local governments  
21 and please consult with our local air quality management  
22 districts so that we don't rush to judgment about the  
23 simplicity with which we think we're able to, you know,  
24 implement legislative directives to do what we all want to  
25 do, including the local government and local air quality

1 management districts, which is to really get one of the  
2 most potent greenhouse gas types out of our atmosphere.  
3 So let's just continue to give a lot of necessary  
4 thoughtfulness.

5 Thank you.

6 VICE CHAIR BERG: Thank you.

7 Ms. Riordan.

8 BOARD MEMBER RIORDAN: Yes. Let me build on  
9 Supervisor Serna's comments.

10 The waste diversion programs that we'd like to  
11 establish in California are very good. While we've heard  
12 I think the full range of, yes, it can be done; yes; no,  
13 it can't be done in your time frame, my thought is the one  
14 constant in that wide spectrum of whether it can be done  
15 or not in our time frame according to our plan is the  
16 barrier issue.

17 And I would just say that, as Mr. Corey correctly  
18 said, he's going to do some deep diving after this meeting  
19 today, that may be one of the issues that might help most,  
20 trying to understand what those barriers are. And if we  
21 can work through some of them, it may be very, very  
22 helpful.

23 One example I would just give you where I know of  
24 one one time, a permitted composting facility wanted to  
25 expand, not even -- I do not believe it was even 50

1 percent, but somewhere between 0 and 50 percent. It's  
2 five years later, and I don't think they still have a  
3 permit for the expansion.

4 Well, that would be a great case. And if you  
5 want to further analyze that, I'd be happy to provide the  
6 information. But I think we -- we've got to look at some  
7 of these barriers to make this successful.

8 I don't when you do that deep dive, Mr. Corey,  
9 but maybe it's too early to do that. But we've got to  
10 understand there are barriers.

11 Thank you.

12 VICE CHAIR BERG: Thank you.

13 Supervisor Gioia.

14 BOARD MEMBER GIOIA: Thanks. And thanks to  
15 everybody for coming. Clearly a really important area.  
16 Thanks for staff for all the good work in putting this  
17 together.

18 I think the effectiveness of ARB has really been  
19 in large part because we have set aggressive goals, and  
20 then we work toward them. And we understand there's  
21 obstacles and challenges to those goals, and we figure out  
22 how to work through them.

23 And I think the same thing applies here. I think  
24 it is important to think about setting aggressive goals,  
25 while acknowledging that there are some challenges. And

1 as someone in local government - and there's a few of us  
2 up here who are in local government - and having permitted  
3 landfills and composting facilities in Contra Costa, I  
4 acknowledge there can be some challenges.

5 I do think the CSAC and League letters  
6 acknowledge that. I think they may somewhat overstate it.  
7 I think sometimes it takes some political will at the  
8 local level. Sometimes the opposition, the NIMBY issue  
9 gets in the way. But sometimes it's even the political  
10 will of those local elected officials to just do it.

11 So I think, Richard, what I heard you say is  
12 you're going to get back to us on the issues that have  
13 been raised. And I do think it's useful to think about  
14 what's the path forward to try to create a better  
15 environment for permitting. You know, clearly, and as  
16 some people have pointed out, if the market improves, the  
17 market will drive this as well. And folks are going to  
18 work hard to get there facilities permitted because  
19 they're going to see an economic interest in doing so.  
20 Right?

21 So I acknowledge there's some challenges. Again,  
22 having experienced some of these myself, I think you can  
23 move these through the process, and I think we need to  
24 figure out how to help work with local government to make  
25 that happen and to create the market incentives to get



1 more of these applications to happen as well.

2           So, again, under the main goal that we still need  
3 to think about how we set aggressive standards. Because  
4 some of the comments we heard today are not unlike  
5 comments we heard -- some of -- we all have heard from  
6 other sectors of industry, right, who've talked about how  
7 changing the status quo is hard. And yet in those areas,  
8 through the hard work of, you know, the stakeholders, the  
9 staff, the Board, we've gotten through that.

10           So those are my comments.

11           VICE CHAIR BERG: Thank you very much.

12           Ms. Takvorian.

13           BOARD MEMBER TAKVORIAN: Thank you.

14           Just building off of that, I -- one of the things  
15 I wanted to say is I think it wasn't so long ago that some  
16 of us couldn't imagine not driving our fossil-fuel-powered  
17 muscle car. I'm not necessarily in that category, but --

18           (Laughter.)

19           BOARD MEMBER TAKVORIAN: -- I remember hearing  
20 that. So I think when we think about the changes that  
21 have come through, and largely because of CARB's great  
22 scientific work, I think that we could see that these  
23 changes can happen. And when we set the aggressive goals,  
24 we just work towards those.

25           And I really appreciate all of the perspectives

1 that were provided here today. And I hope that we all  
2 remain really open to all of them, including those that  
3 may seem a little out there. As -- and I hesitate to say  
4 this, but as a person who's been a vegetarian for 40  
5 years, I'm glad to hear it coming up at public hearings,  
6 because we've waiting a long time for that, and the  
7 evidence is clear. And so we may not all get to have  
8 everything that we want and also achieve all of the goals  
9 that we have. And I say that with lots of love and  
10 respect.

11 (Laughter.)

12 BOARD MEMBER TAKVORIAN: But I just think that we  
13 got to look at it, and there's cultural changes that might  
14 happen, including in my own culture.

15 I really support the strong goals and strategies.  
16 I hope that staff will work towards understanding that  
17 it's not simple, mandatory regulations that are built on  
18 strong science. That's critical that we move forward in  
19 that way. The targets are necessary and I agree that  
20 they're long overdue and we have to include incentives as  
21 well.

22 I would also ask that we articulate more clearly  
23 the environmental justice benefits and the environmental  
24 justice priorities. So as we look at how these plans and  
25 regulations will come forward, we'd like to look at where

1 EJ communities benefit and how that might be incorporated  
2 in the consideration of what the prioritization of the  
3 regulations and implementation is.

4 BOARD MEMBER GIOIA: Your comment made me think  
5 of that Rolling Stones line: "We don't always get what we  
6 want but we get what we need."

7 VICE CHAIR BERG: Professor Sperling.

8 BOARD MEMBER SPERLING: Nothing so philosophical  
9 or --

10 (Laughter.)

11 BOARD MEMBER SPERLING: -- or even brilliant.

12 (Laughter.)

13 BOARD MEMBER SPERLING: I just have one not so  
14 simple suggestion or request. I'd like to see an economic  
15 screening analysis, cost effectiveness, a supply curve,  
16 however you want to look at it. We're looking at a large  
17 range of options here. And I don't feel like we have a  
18 good feel for which of them are really attractive and  
19 compelling and which less so.

20 And if we're going to be adopting a lot of  
21 policies and regulations, I think we ought to have a good  
22 sense of where's the low hanging fruit, both in a cost  
23 sense as well as a volume sense.

24 That's all.

25 EXECUTIVE OFFICER COREY: I want to give a --

1 provide a short response to that. A very clear, simple  
2 request.

3           And I think it goes, and I'm going to be -- well,  
4 one of the responses, the follow-up was going to be  
5 talking to our chief economists and our economics group as  
6 well as the stakeholders. And the reason I'm  
7 characterizing it this way, it goes back to the point that  
8 I made about the distinction between a plan and an actual  
9 detailed regulatory proposal. So by the very nature of a  
10 plan you certainly at a relatively high level need  
11 economics-related information.

12           But I'm going to frame that question up as: How  
13 far can one go in the context of a plan with respect to  
14 your question relative to a specific regulatory measure,  
15 which certainly has those very detailed type of economic  
16 analysis?

17           So I take to heart your request, and we'll talk  
18 with the team about what's doable and what isn't, as well  
19 as the stakeholders.

20           BOARD MEMBER SPERLING: And when you look at it,  
21 you'll clump different ones together in different ways  
22 that make sense. And there'll be the question of where  
23 are the co-benefits and to what extent do you quantify  
24 those and put them in. So it's not a -- clearly not a  
25 straightforward simple. I did make that clear, it's not

1 simple.

2 (Laughter.)

3 BOARD MEMBER SPERLING: But I think we need some  
4 kind of way of framing, you know, the options as we go  
5 forward.

6 VICE CHAIR BERG: Thank you very much, Professor  
7 Sperling

8 Ms. Mitchell.

9 BOARD MEMBER MITCHELL: Thank you.

10 Thank you, staff for putting this together. It  
11 is an aggressive plan. But in concept I support what  
12 you're doing.

13 We've heard from so many stakeholders and we've  
14 heard just a wide diversity of opinion here. I mean, some  
15 gung ho for it and many you thinking this is a disaster.

16 There are barriers. One of the most important  
17 barriers that we're looking at that I think we need to  
18 work on, and we need to work on this in collaboration with  
19 the PUC and the utilities, is the injection of biogas and  
20 biomethane into the pipelines. This is a key piece of the  
21 whole plan. That has to be solved before we can really,  
22 you know, get to the heart of this.

23 The other thing that occurs to me is that if  
24 we're going to do waste to energy, which is in this plan,  
25 it's not going to be done by one dairy or one sanitation

1 district. I see this as a combination, a collaboration  
2 between private industry, government, the utilities. I  
3 would think that there'd be companies out there that build  
4 digesters that can make money off of their digester  
5 capacity. There are companies out there that want to sell  
6 biogas, and they should be able to make money off of that  
7 enterprise. I see P3s somewhere in the pipeline of what  
8 we're doing.

9           It does put a burden on local government, as our  
10 local government has recognized. But I think that, you  
11 know, local government working with the stakeholders and  
12 with the sanitation districts, the wastewater treatment  
13 plants, I think we can work through this.

14           Some of our districts are already prepared to do  
15 it.

16           I also see possibilities for siting some of these  
17 difficult facilities, like digesters and composting  
18 facilities.

19           They may be able -- it may be possible to site  
20 them on existing landfills or near existing landfills.  
21 You already have the trucks going to those places. And as  
22 we divert organic waste, perhaps those could be cited in  
23 those locations where the impacts are already -- have  
24 already been looked at, and further mitigation could be  
25 possible.

1           So I think there are possibilities if we use our  
2 imagination and try to get there.

3           But I laud you for the very thorough plan that  
4 you put forward. I urge you to work with the stakeholders  
5 and dig a little deeper, as we said, to iron out some of  
6 the wrinkles and get to a place where most of us can  
7 accept it and work together and get to our goal.

8           Thank you.

9           VICE CHAIR BERG: Thank you very much, Ms.  
10 Mitchell.

11          Dr. Balmes.

12          BOARD MEMBER BALMES: I originally said no  
13 comment just because I thought my fellow Board members  
14 would probably say mostly what I wanted to say, and I was  
15 trying to speed up the process. But I will slow it down  
16 for a second, because Supervisor Gioia, who just left us,  
17 misquoted the Rolling Stones.

18          (Laughter.)

19          BOARD MEMBER BALMES: It's important here.

20          "You can't always get what you want; but if you  
21 try sometime, you'll find you get what you need." We have  
22 to try harder to meet these goals.

23          (Laughter.)

24          VICE CHAIR BERG: Thank you very much for  
25 clarifying the record for us, Dr. Balmes.

1 (Laughter.)

2 VICE CHAIR BERG: I do think the comments have  
3 been extremely thoughtful. I thank my fellow Board  
4 members. This is an exciting time for exactly, as Dr.  
5 Sawyer outlined, this is 10 years in the making. It is  
6 complicated. Staff here very much deserve to be commended  
7 for the very hard work.

8 And all of the stakeholders, this is not a simple  
9 process and it covers a lot of different processes,  
10 industries. And I would encourage you to do what you do  
11 best.

12 I would also encourage that -- or let the  
13 stakeholders know that voluntary options are -- I would  
14 not support. That said, a suite of options getting us to  
15 where we need to go, which includes the ability to take  
16 advantage of incentives, the ability to look for new  
17 incentives, along with regulation and all, I would agree  
18 with my fellow Board members. And so we are going to  
19 release staff to do what you do best and bring this to a  
20 close.

21 With that, we do have three public comments. And  
22 so if we could just turn our attention quickly to our last  
23 item, which is Open Public Comment.

24 And Moises Rendon, if we could start off with  
25 you. And then Adam, which might be coming down with that.



1 So the two of you, and then followed by Ruben.

2 Is this kind of a group presentation, by the way?

3 Oh, good.

4 Well, then we're going to let you go one after  
5 the other. Okay. And we do need three minutes from each  
6 so.

7 MR. ADAM RENDON: Thank you. So thank you for  
8 your patience and thank you for everything you do to  
9 improve the air quality here in California. We appreciate  
10 it.

11 So Adam, Moises, Douglas. We're the Solution for  
12 Pollution team, and this is the solution for pollution.

13 I don't know. You guys have the PowerPoint,  
14 right?

15 VICE CHAIR BERG: Yes, we do.

16 MR. ADAM RENDON: Okay. I'd like to speed it up.  
17 I'd like to begin at page 4.

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

20 MR. ADAM RENDON: Bottom slide.

21 Okay. Well, today we mostly heard solutions as  
22 being reducing emissions and all that, and they are very  
23 important steps in cleaning up the pollution. But what  
24 about the pollution that's already there? What are we  
25 going to do about that? We can't let Mother Nature do

1 everything. We created the problem. We should be the one  
2 to fix it.

3 So how was ours different. Why is this the  
4 solution for pollution?

5 Our project is different for many reasons. It  
6 reverses the damage already done. Living in Los Angeles,  
7 we always notice the sky being much clearer after heavy  
8 rain. I began to research this and found the reason for  
9 this, is because raindrops pick up pollutant particles and  
10 are big enough to reach the ground before they completely  
11 evaporate.

12 Creating artificial rain for an entire city until  
13 the pollution is gone is not a feasible plan, so we came  
14 up with this. Since we cannot have rain over the city, we  
15 must use this rain in another form. After the raindrops  
16 is taken -- after the raindrop falls it's taken away by  
17 storm drains.

18 From the storm drains -- I'm going to move ahead.

19 --o0o--

20 MR. ADAM RENDON: Okay. So from the storm drains  
21 it goes to the main line. Instead of taking it to the  
22 ocean, we can purify it. How do we do that? We use a  
23 fan -- we use a fan to create a vacuum. That vacuum is  
24 going to suction in the air from the city. As the  
25 heaviest particles are at the bottom, the rest will come

1 down.

2 As it's suctioned into the storm drains, it's  
3 going to go into the main line and eventually reach itself  
4 to that purification chamber there.

5 I don't have time to show everything, but there  
6 is where we're going to have our rain. It's going to be  
7 curtains of water, or maybe some chemicals reduced there  
8 to purify the air.

9 So as the pollution hits the curtains of water,  
10 the pollution will fall and be drained. That drain is  
11 going to go to a purification chamber where the water can  
12 be purified. You know, water purification is very  
13 advanced these days. So once it -- the problem is  
14 collecting the pollution in the air. How do you get it in  
15 one place? Once you get it in one place, disposal. A lot  
16 of options for that.

17 So using this, we collect it, we have it in one  
18 place, we get rid of it, and we clean up our own mess.

19 Thank you.

20 MR. MOISES RENDON: My name is Moses. I'll be  
21 more simple.

22 Every city in the world has drain lines. When  
23 you're driving you see the drains around the sidewalks.  
24 Everybody seeing it. So we see thousands. Probably  
25 every -- the city has a thousands. And all those drains

1 are connected to a main line. Now, if we connect  
2 ourselves a vacuum on -- a fan on the main line, we can  
3 convert all those thousand drains in vacuum system.

4 The contamination is a giant problem. We need a  
5 giant solution.

6 We cannot just cure with a bandage a loose skin.  
7 So my idea is to absorb all the contamination through the  
8 drain -- the drain lines.

9 And then we can absorb every kind of  
10 contamination, anything, and which is go -- like my son  
11 says, go through a process of cleaning and we going to be  
12 purifying the water -- I mean, the air through a curtain  
13 for water.

14 Now, the good thing about this is the drains are  
15 far away. So the air that we are cleaning is not mixing  
16 with a contaminated because probably we're going to be  
17 miles away. Because the main line goes to the river or  
18 goes to the sea. So if we connect ourselves like probably  
19 a mile away, we can be absorbing the air from here all the  
20 way and purifying the air far away.

21 So this is the point. I don't know if you guys  
22 understand it.

23 VICE CHAIR BERG: No, this is just really fun.  
24 It's very innovative, and the time you have spent thinking  
25 it out.

1           Mr. Corey, could we have some follow-up with  
2 somebody on staff just to -- sounds like, you know, it's a  
3 multiple -- I mean, talking it out for a half hour or so  
4 could be really interesting. And so could I possibly turn  
5 that over to you and your staff.

6           EXECUTIVE OFFICER COREY: Absolutely. We'll be  
7 happy to sit down with them, you bet.

8           VICE CHAIR BERG: Oh, please, do you have some  
9 comment?

10           BOARD MEMBER SERNA: Oh, I was just going to say,  
11 you know, most people think outside of the box these days.  
12 You guys are actually thinking inside the box.

13           (Laughter.)

14           MR. MOISES RENDON: You know, the beauty of this,  
15 every city in the world has drain lines, because the  
16 purpose is to -- for -- so we won't float. So the drains  
17 are in the lower side and the cloud of contamination sits  
18 on the lowest part. So you see advantage from a system  
19 like this. And we can cool the air by lowering the  
20 temperature on the water. We can clean the air and lower  
21 the temperature of the air too.

22           BOARD MEMBER SERNA: We all appreciate very much  
23 the fact you gave this obviously a lot of thought. And  
24 thank you for your patience too.

25           MR. MOISES RENDON: Maybe up with you guys if you

1 help us.

2 VICE CHAIR BERG: We certainly would be  
3 interested in sitting down, learning more. And from a  
4 business perspective, it really is about how do take an  
5 idea and see how it goes. If we could provide you with  
6 some information, if you want to come and see me at my  
7 office. I'm in Los Angeles. We could also -- I'd be  
8 happy to talk to you a little bit about how to take an  
9 idea and where else to go. So maybe we could give you a  
10 couple of different meetings to have. Okay?

11 MR. MOISES RENDON: Okay.

12 VICE CHAIR BERG: Okay. Thank you very much for  
13 your patience.

14 MR. MOISES RENDON: We are close.

15 VICE CHAIR BERG: That's right. They can give  
16 you my information. I'm happy to meet with you in Los  
17 Angeles.

18 MR. MOISES RENDON: Thank you very much.

19 VICE CHAIR BERG: Thank you.

20 Okay. I think we had one other person. Ruben,  
21 are you still with us?

22 Seeing no Ruben, I think I can bring this to a  
23 close. Thank you very much, everyone, and we'll see you  
24 next month.

25 /////

(Thereupon the Air Resources Board  
adjourned at 4:55 p.m.)

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## C E R T I F I C A T E O F R E P O R T E R

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, do hereby certify:

That I am a disinterested person herein; that the foregoing California Air Resources Board meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed, under my direction, by computer-assisted transcription;

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

IN WITNESS WHEREOF, I have hereunto set my hand this 3rd day of June, 2016.



JAMES F. PETERS, CSR  
Certified Shorthand Reporter  
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