

VIDEOCONFERENCE MEETING  
STATE OF CALIFORNIA  
AIR RESOURCES BOARD

ZOOM PLATFORM

THURSDAY, MARCH 24, 2022

9:01 A.M.

JAMES F. PETERS, CSR  
CERTIFIED SHORTHAND REPORTER  
LICENSE NUMBER 10063

APPEARANCES

BOARD MEMBERS:

Liane Randolph, Chair

Sandra Berg, Vice Chair

John Balmes, MD

Hector De La Torre

John Eisenhut

Senator Dean Florez

Assemblymember Eduardo Garcia

Davina Hurt

Gideon Kracov

Senator Connie Leyva

Tania Pacheco-Werner, PhD

Barbara Riordan

Supervisor Phil Serna

Dan Sperling, PhD

Diane Takvorian

Supervisor Nora Vargas

STAFF:

Richard Corey, Executive Officer

Edie Chang, Deputy Executive Officer, Planning, Freight,  
and Toxics

Chanell Fletcher, Deputy Executive Officer, Environmental  
Justice

APPEARANCES CONTINUED

STAFF:

Annette Hebert, Deputy Executive Officer, Southern California Headquarters and Mobile Source Compliance

Edna Murphy, Deputy Executive Officer, Internal Operations

Rajinder Sahota, Deputy Executive Officer, Climate Change and Research

Craig Segall, Deputy Executive Officer, Mobile Sources and Incentives

Ellen Peter, Chief Counsel

Heather Arias, Division Chief, Transportation and Toxics Division (TTD)

Matthew Botill, Division Chief, Industrial Strategies Division (ISD)

Richard Boyd, Assistant Division Chief, TTD

Maureen Hand, Air Resources Engineer, Climate Change Planning Section, ISD

Tracy Haynes, Staff Air Pollution Specialist, Freight Technology Section, TTD

Melissa Houchin, Air Resources Engineer, Freight Technology Section, TTD

Stephanie Kato, Staff Air Pollution Specialist, Energy Section, ISD

Shelby Livingston, Manager, Program Operation Section, ISD

Gabriel Monroe, Senior Attorney, Legal Office

Adam Moreno, Staff Air Pollution Specialist, Program Operation Section, ISD

David Quiros, Manager, Freight Technology Section, TTD

Jordan Ramalingam, Air Pollution Specialist, Fuels Evaluation Section, ISD

APPEARANCES CONTINUED

STAFF:

Bonnie Soriano, Branch Chief, Freight Activity Branch, TTD

Alex Wang, Senior Attorney Legal Office

Alex Yiu, Staff Air Pollution Specialist, Program  
Operation Section, ISD

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY:

Secretary Jared Blumenfeld

ALSO PRESENT:

Sarah Aird, Californians for Pesticide Reform

Joy Alafia, Western Propane Gas Association

Tom Babineau, Rypos

Graham Balch, Green Yachts

Rebecca Baskins, California Advanced Biofuels Alliance

Christine Batikian, Port of Los Angeles

Shawn Bennett, Baydelta Maritime, LLC

Sylvia Betancourt, Long Beach Alliance for Children with  
Asthma

Michael Breslin, American Waterways Operators

Steven Brink, California Forestry Association

Teresa Bui, Pacific Environment

Jennifer Case, New Leaf Biofuel

Connie Cho, Communities for a Better Environment

Max Cohen, Curtin Maritime Corp.

APPEARANCES CONTINUED

ALSO PRESENT:

Dave Cook, Rail Propulsion Systems

Jon Costantino

Charles Davidson, ICSR

Sarah Deslauriers, California Association of Sanitation Agencies

Jerry Desmond, Recreational Boaters of California

Jaime Diamond, Stardust Sportfishing

Martha Dina Argüello, Physicians for Social Responsibility, LA

Harvey Eder, Public Solar Power Coalition

Evan Edgar, Edgar & Associates, Inc.

Tim Ekstrom, Royal Star Sportfishing

Supervisor Nathan Fletcher, San Diego County

Ken Franke, Sportfishing Association of California

Tim French, Truck and Engine Manufacturers Association

Catherine Garoupa White, PhD, Central Valley Air Quality Coalition

Josh Gaylord

Elliot Gonzales, Sierra Club

Richard Grow

Lauren Gularte, Water Emergency Transportation Authority

Leah Harnish, American Waterways Operators

Scott Hedderich, Renewable Energy Group

APPEARANCES CONTINUED

ALSO PRESENT:

Julie Henderson, Director, California Department of Pesticide Regulation

Jim Holden, Fish for Life

Matt Holmes, Little Manila Rising

Regina Hsu, Earthjustice

Gary Hughes, Biofuelwatch

Greg Hurner, Hurner Government Relations and Advocacy

Virginia Jameson, Deputy Secretary, California Department of Food and Agriculture

Steve Jepsen, Southern California Alliance of Publicly Owned Treatment Works

Kristin Joseph, RE Site Engineering, Inc.

Donna Kalez, Dana Wharf Sportfishing

Ryan Kenny, Clean Energy

Ameen Khan, California Environmental Voters

Wayne Kotow, Coastal Conservation Association of California

Nilda Langston

John Larrea, California League of Food Producers

Julia Levin, Bioenergy Association of California

Andrea Lueker, California Association of Harbor Masters and Port Captains

Rick Luliucci, The Vane Brothers Company

Jim Luttjohann, Love Catalina Island, Catalina Island Tourism Authority

APPEARANCES CONTINUED

ALSO PRESENT:

Ryan Mack, MP Strategic Group

Bill Magavern, Coalition for Clean Air

Paul Mason, Pacific Forest Trust

Julia May, Communities for a Better Environment

David McCloy, San Francisco Bar Pilots

Barry McCooey, M&H Engineering

Art Mead, Crowley Maritime

Jeanne Merrill, California Climate and Agriculture Network

Scott Merritt, Merritt Waterline Solutions

Jacqueline Moore, Pacific Merchant Shipping Association

Lynn Muench, The American Waterways Operators

Graham Noyes, Low Carbon Fuels Coalition

George Peridas, Lawrence Livermore National Laboratory

Rick Powers, Golden Gate Fishermen's Association

Ernie Prieto, Oceanside Sea Center

Leela Rao, Port of Long Beach

David Reynolds, PTL Marine

Will Roberts, Foss Maritime

Max Rosenberg, Vane Line Bunkering, LLC

Laura Rosenberger Haider

Mariela Ruacho, American Lung Association

Peter Schrappen, American Waterways Operators

APPEARANCES CONTINUED

ALSO PRESENT:

Harry Simpson, Crimson Renewable Energy Holdings

Mikhael Skvarla, California Council for Environmental and Economic Balance

Richard Smith, Westar Marine Services

Steven Smith, Phillips 66

William Smith, Riptide Charters

Robert Spiegel, California Manufacturers and Technology Association

Misagh Tabrizi, Nett Technologies

Sharifa Taylor, Communities for a Better Environment

Alison Torres, Eastern Municipal Water District

Frank Ursitti, H&M Landing

Jim Verburg, Western States Petroleum Association

Floyd Vergara, Clean Fuels Alliance America

Virgil Welch, California Carbon Capture Coalition

Sam Wilson, Union of Concerned Scientists



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PROCEEDINGS

1  
2 CHAIR RANDOLPH: Thank you very much. Good  
3 morning. The March 24th public meeting of the California  
4 Air Resources Board will come to order.

5 Board Clerk, will you please call the roll?

6 BOARD CLERK ESTABROOK: Yes.

7 Dr. Balmes?

8 BOARD MEMBER BALMES: Here.

9 BOARD CLERK ESTABROOK: Mr. De La Torre?

10 Mr. Eisenhut?

11 BOARD MEMBER EISENHUT: Yes, here.

12 BOARD CLERK ESTABROOK: Senator Florez?

13 BOARD MEMBER FLOREZ: Florez, here.

14 BOARD CLERK ESTABROOK: Assembly Member Garcia?

15 Ms. Hurt?

16 BOARD MEMBER HURT: Present.

17 BOARD CLERK ESTABROOK: Mr. Kracov?

18 BOARD MEMBER KRACOV: Here.

19 BOARD CLERK ESTABROOK: Senator Leyva?

20 Dr. Pacheco-Werner?

21 BOARD MEMBER PACHECO-WERNER: Here.

22 BOARD CLERK ESTABROOK: Mrs. Riordan?

23 BOARD MEMBER RIORDAN: Here.

24 BOARD CLERK ESTABROOK: Supervisor Serna?

25 BOARD MEMBER SERNA: Here.

1 BOARD CLERK ESTABROOK: Professor Sperling?

2 BOARD MEMBER SPERLING: Here.

3 BOARD CLERK ESTABROOK: Ms. Takvorian?

4 BOARD MEMBER TAKVORIAN: Here.

5 BOARD CLERK ESTABROOK: Supervisor Vargas?

6 BOARD MEMBER VARGAS: Vargas, here

7 BOARD CLERK ESTABROOK: Vice Chair Berg?

8 VICE CHAIR BERG: Here.

9 BOARD CLERK ESTABROOK: Chair Randolph?

10 CHAIR RANDOLPH: Here.

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

13 CHAIR RANDOLPH: Thank you very much.

14 I'd like to begin with a house -- few house  
15 keeping items. In accordance with Assembly Bill 361, as  
16 extended by Governor Newsom's Executive Order N-1-22, we a  
17 are today's meeting remotely using zoom with public  
18 participation options available both by phone and Zoom.

19 A closed captioning feature is available for  
20 those of you joining us in the Zoom environment. In order  
21 to turn on the subtitles, please look for a button labeled  
22 CC at the bottom of the Zoom window, as shown in the  
23 example on the screen now. I would like to take this  
24 opportunity to remind everyone to speak clearly and from a  
25 quiet location, whether you are joining us in Zoom or

1 calling in by phone.

2 Interpretation services will be provided today in  
3 Spanish. If you are joining us using Zoom, there is a  
4 button labeled "Interpretation" on the Zoom screen. Click  
5 on that interpretation button and select Spanish to hear  
6 the meeting in Spanish. I want to remind all of our  
7 speakers to speak slowly to allow the interpreters the  
8 opportunity to accurately interpret your comments.

9 (Interpreter translated in Spanish)

10 CHAIR RANDOLPH: I will now ask the Board Clerk  
11 to provide more details on today's procedures.

12 BOARD CLERK ESTABROOK: Yes. Thank you, Chair.

13 Good morning, everyone. My name is Katie  
14 Estabrook and I am one of the Board Clerks. And I will  
15 provide some information on how public participation will  
16 be organized for today's meeting. If you wish to make a  
17 verbal comment on one of the Board items or during the  
18 open comment period at the end of today's meeting, you  
19 must be joining using Zoom webinar or calling in by phone.  
20 If you are currently watching the webcast on CAL-SPAN, but  
21 you wish to comment, please register for the Zoom webinar  
22 or call in. Information for both can be found on the  
23 public agenda for today's meeting.

24 To make a verbal comment, we will be using the  
25 raise hand feature in Zoom. If you wish to speak on a

1 Board item, please virtually raise your hand as soon as  
2 the item has begun to let us know you wish to speak. To  
3 do this, if you are using a computer or tablet, there is a  
4 raise band button. If you are calling in on the phone,  
5 dial star nine to raise your hand. Even if you previously  
6 indicated which item you wish to speak on when you  
7 registered, you must raise your hand at the beginning of  
8 the item, so that you can be added to the queue and so  
9 that your chance to speak will not be skipped.

10           If you will be giving your verbal comment in  
11 Spanish and require an interpreter's assistance, please  
12 indicate so at the beginning of your testimony and our  
13 translator will assist you. During your comment, please  
14 pause after each sentence to allow the interpreter to  
15 translate your comment into English. When the comment  
16 period starts, the order of commenters will be determined  
17 by who raises their hand first.

18           I will call each commenter by name and will  
19 activate each commenter's audio when it is your turn to  
20 speak. For those calling in by phone, I will identify you  
21 by the last three digits of your phone number. We will  
22 not be showing a list of commenters. However, I will be  
23 announcing the next three or so commenters in this queue,  
24 so you are ready to testify and know who's coming up next.  
25 Please note that you will not appear by video during your

1 testimony.

2 I would also like to remind everyone to please  
3 state your name for the record before you speak. This is  
4 important in the remote meeting setting. And it is  
5 especially important for those calling in by phone to  
6 testify. There will be a time limit for each commenter.  
7 That normal time is three minutes, though that could  
8 change based on the Chair's discretion. During public  
9 testimony, you will see a timer on the screen. For those  
10 calling in by phone, we will run the timer and let you  
11 know when you have 30 seconds left and when your time is  
12 up. If you require Spanish interpretation for your  
13 comment, your time will be doubled.

14 If you wish to submit written comments today,  
15 please visit CARB's, "Send Us Your Comments", page or look  
16 at the public agenda on our webpage for links to send  
17 these documents electronically. Comments will be accepted  
18 on each item until the Chair closes the item.

19 If you experience any technical difficulties,  
20 please call (805)772-2715 so an IT person can assist you.  
21 This number is also noted on the public agenda.

22 Thank you, Chair, I'll turn it back to you.

23 CHAIR RANDOLPH: Thank you.

24 The first item on the agenda today is Item  
25 22-5-1, proposed amendments to the commercial harbor craft



1 regulation. If you wish to comment on this item, please  
2 click the raise hand button or dial nine -- dial -- sorry,  
3 dial star nine now. We will call on you when we get to  
4 the public comment portion of this item.

5 Today, the Board will hear staff's proposal to  
6 expand emissions-related requirements for commercial  
7 harbor craft that operate in regulated California waters.  
8 The proposed amendments would build on the current  
9 Commercial Harbor Craft Regulation by expanding the  
10 requirements to additional vessel types and proposing more  
11 stringent engine performance standards, including  
12 technology forcing zero-emission requirements for marine  
13 vessels.

14 As the Board knows, California needs to continue  
15 to reduce emissions from mobile sources in order to meet  
16 critical community, clean air, and climate goals.  
17 Achieving these goals will provide much needed public  
18 health protection for the millions of Californians that  
19 still breathe unhealthy air, reduce the public's exposure  
20 to toxic air contaminants, and help meet California's  
21 State Implementation Plan commitment to attain national  
22 ambient air quality standards.

23 To attain these health-based standards, we must  
24 reduce oxides of nitrogen in the South Coast Air Basin by  
25 45 percent by 2023 and an additional 55 percent by 2031,

1 and an additional 70 percent by 2037. The proposed  
2 amendments are additionally designed to reduce emissions  
3 of greenhouse gases and are consistent with Governor  
4 Newsom's Executive Order N-79-20, which directs CARB and  
5 other State agencies to develop strategies to achieve 100  
6 percent zero emissions from off-road vehicles and  
7 equipment by 2035, where feasible.

8 This is the second of two Board hearings for the  
9 proposed amendments. At our hearing in November, we heard  
10 testimony from a range of stakeholders regarding this  
11 regulation. Many stressed the importance of the health  
12 benefits from these emissions reductions, while others  
13 expressed concerns about potential negative impacts on  
14 their businesses.

15 CARB staff listened to everyone carefully and  
16 deeply, and at our direction, continued working with  
17 stakeholders to identify ways to ensure that this  
18 regulation can achieve the emissions reductions we need,  
19 support the advancement of clean technology, and respond  
20 to concerns raised by stakeholders.

21 Following up from that meeting, our staff met  
22 with many stakeholders, and our office met virtually --  
23 our Chair's office met virtually with other regulated  
24 sectors. And as part of their work, CARB staff, along  
25 with Mr. Corey and one of my senior advisors, traveled to

1 San Diego where they met with staff from San Diego Air  
2 Pollution Control District, advocates from the  
3 Environmental Health Coalition, and the local commercial  
4 sports fishermen.

5           The trip allowed staff the opportunity to better  
6 understand the challenges faced both by community  
7 residents and the local commercial sports fishermen. As a  
8 result of the continued dialogue and work of staff, I'm  
9 confident that the regulation before us today will ensure  
10 cleaner air in port communities across the state and do so  
11 in a way that allows industry partners the time to not  
12 only overcome key challenges, but also be partners in the  
13 advancement of new cleaner technology.

14           The 15-day changes proposed by staff will provide  
15 the commercial sportsfishing industry greater time to  
16 implement cleaner engines and collaborate with CARB staff  
17 to advance hybrid and zero-emission technologies.

18           Following today, staff will continue to consider  
19 zero-emission contingency measures for commercial harbor  
20 craft like tugboats to bring critical emissions reductions  
21 to our state's most impacted communities.

22           Finally, I want to thank the legislators who have  
23 engaged with me on this item, including Assembly Member  
24 O'Donnell, former Assembly Member Burke, and Senator  
25 McGuire. These partnerships and communications help build

1 better outcomes, such as the inclusion of a work group in  
2 the proposed resolution as recommended by Senator McGuire,  
3 and streamline compliance deadline extensions as  
4 recommended by former Assembly Member Burke.

5 Mr. Corey, would you please introduce the item?

6 EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

7 In 2008, the Board adopted the initial Commercial  
8 Harbor Craft Regulation which reduces emissions from  
9 diesel engines on commercial harbor craft. The regulation  
10 was amended in 2010 to include additional vessel  
11 categories. And in 2017, the Board directed staff to  
12 provide concepts to control pollution from large freight  
13 facilities including seaports. In response to the Board  
14 direction and projected public health benefits, staff has  
15 developed the proposed amendments for your consideration.

16 The proposed amendments we're presenting to you  
17 today further expand in-use requirements for commercial  
18 harbor craft to more vessel categories, create more  
19 stringent performance standards for diesel engines,  
20 introduce mandates and incentives for zero-emission harbor  
21 craft, and establish requirements for facilities to  
22 provide supporting infrastructure and increased reporting  
23 to CARB.

24 The proposed amendments reduce emissions of  
25 criteria pollutants and toxic air contaminants in

1 communities near seaports, marinas, and harbors, where  
2 residents are often disproportionately exposed to air  
3 pollution. Many of these communities are AB 617 selected  
4 communities and are recognized as disadvantaged due in  
5 part to impacts from marine-related air pollution.

6 Reducing harbor craft related emissions helps to  
7 reduce the cumulative exposure to toxic emissions and is  
8 critical to meeting California's federal clean air  
9 standards.

10 That being said, we acknowledge and recognize  
11 that what is proposed will be challenging for some  
12 California businesses, especially certain small  
13 businesses. As such, we followed Board direction from the  
14 November hearing and are reporting back. Staff has  
15 conducted extensive outreach since we were last in front  
16 of you for this item, including a four-and-a-half hour  
17 webinar to discuss incentive opportunities and ways to  
18 respond to your direction, and as you noted, a trip to San  
19 Diego, which I had the opportunity to participate in.  
20 Various avenues for streamlining extension requests for  
21 fleets that experience financial and technical challenges  
22 in meeting the requirements have been explored and will be  
23 discussed as part of the staff presentation.

24 In some cases, the extensions being proposed  
25 could extend out to approximately 2034 to provide more

1 time for compliance. In addition, we're proposing an  
2 additional extension pathway for commercial passenger  
3 fishing vessels that have upgraded all their engines to  
4 meet the tier three standards.

5 We have assembled, released, and discussed  
6 information with stakeholders regarding funding programs  
7 available for harbor craft. We're also introducing a  
8 proposed technology and implementation review, a  
9 commitment to continue collaborating with the sportfishing  
10 industry and release a mid-term review by 2028, as well as  
11 a commitment to explore a zero-emission contingency  
12 measure.

13 Today, staff is reporting back on how your  
14 direction from November has been achieved and is  
15 presenting the proposed amendments for your consideration  
16 and final vote.

17 I'll now ask Melissa Houchin of the  
18 Transportation and Toxics Division to begin the staff  
19 presentation.

20 Melissa.

21 (Thereupon a slide presentation.)

22 TTD AIR RESOURCES ENGINEER HOUCHIN: Thank you,  
23 Mr. Corey and good morning, Chair Randolph, and members of  
24 the Board. Today, I'll be going over staff's proposed  
25 amendments to the Commercial Harbor Craft Regulation and

1 staff's response to Board direction from our first hearing  
2 in November.

3 --o0o--

4 TTD AIR RESOURCES ENGINEER HOUCHIN: As a quick  
5 reminder, I'll start with the current commercial harbor  
6 craft or CHC Regulation which sets requirements for harbor  
7 craft to help the state meet clean air commitments and  
8 protect communities near ports, marinas, and harbors. It  
9 includes requirements for reporting using ultra low-sulfur  
10 diesel fuel and accelerating turnover to Tier 2 or 3  
11 engines for some vessel categories.

12 The compliance dates in the current regulation  
13 run from 2009 to 2022. At the end of this year, the  
14 current Harbor Craft Regulation will be considered fully  
15 implemented. For the past few years, staff has been  
16 developing a proposal to amend the regulation. This  
17 process has resulted in the proposed amendments released  
18 this past September, which would require zero-emission  
19 marine technology for vessels where feasible and cleaner  
20 combustion on all other vessel types. Staff presented the  
21 proposed amendments on November 19th, 2021, where we heard  
22 public comments and received direction from the Board.

23 --o0o--

24 TTD AIR RESOURCES ENGINEER HOUCHIN: This figure  
25 was shown in our November presentation and is important to

1 touch on again. It illustrates that in the absence of the  
2 proposed amendments, commercial harbor craft would emit  
3 165 tons per year of diesel particulate matter, or DPM,  
4 and 15.1 tons per day of oxides of nitrogen, or NOx, in  
5 2023. Harbor craft are one of the top three emissions  
6 sources at ports and result in a near source cancer risk  
7 of greater than 900 chances in a million.

8 --o0o--

9 TTD AIR RESOURCES ENGINEER HOUCHIN: Now, I'll  
10 recap the proposal. In support of Executive Order  
11 N-79-20, zero-emission requirements were a top priority of  
12 the proposal and are established where feasible, including  
13 in 2025, new excursion vessels must be zero emission  
14 capable. And in 2026, all short-run ferries must  
15 transition to full zero-emission.

16 We also estimate that over 100 vessels will be  
17 operating with zero-emission capability by the 2030s  
18 through two compliance options in the proposal that allow  
19 and encourage zero-emission operations through alternative  
20 controls, which will be discussed in a few slides.

21 --o0o--

22 TTD AIR RESOURCES ENGINEER HOUCHIN: Where  
23 zero-emission is not yet feasible, the amendments propose  
24 cleaner combustion standards. To achieve the greatest  
25 emission reductions and public health benefits, the



1 proposed amendments would not only require the cleanest  
2 U.S. EPA certified engine available, but also the use of a  
3 diesel particulate filter, or DPF.

4           The proposal also requires that Tier 4 engines  
5 must be purchased if they are certified for the size and  
6 duty cycle of an engine. The PM standards required by the  
7 proposed amendments would harmonize with the newest  
8 on-road engine standards.

9                                   --o0o--

10           TTD AIR RESOURCES ENGINEER HOUCHIN: This graphic  
11 from our November hearing shows the originally proposed  
12 compliance dates for each vessel category and potential  
13 extensions available for feasibility and financial  
14 hardship. Compliance dates shown in green depend on the  
15 vessel type, engine tier, and engine model year, with  
16 dirtier engines having earlier compliance dates.

17           The blue bars show the possible compliance  
18 extension periods if vessel replacement is required. The  
19 dark squares mark when vessel replacement may be required  
20 after the extensions start to expire. Most extensions  
21 expire December 31st, 2034, which is shown by the vertical  
22 black line at the right end of the figure.

23           Note that commercial fishing vessels are required  
24 to upgrade Tier 1 and older engines to Tier 3, which is a  
25 feasible modification on virtually all in-use vessels and

1 therefore no compliance extensions for feasibility are  
2 necessary. These compliance extensions provide  
3 opportunities for fleets dealing with technical and  
4 financial difficulties additional time to comply; in some  
5 cases, up to 13 years from now.

6 --o0o--

7 TTD AIR RESOURCES ENGINEER HOUCHIN: As presented  
8 in November, staff has built in two alternative compliance  
9 options into the proposed memberships. The first is  
10 called alternative control of emissions. This is a plan  
11 created by an operator that will result in equivalent  
12 emission reductions as following the model year compliance  
13 schedule. The proposed amendments also include credits to  
14 incentivize the adoption of zero-emission technologies.  
15 An operator deploying a zero-emission or zero-emission  
16 capable vessel would receive additional compliance times  
17 for another vessel in the fleet, three years for a  
18 zero-emission capable vessel and seven years for a full  
19 zero-emission vessel. Operators could pick one of these  
20 two options for their fleet or groups of engines.

21 --o0o--

22 TTD AIR RESOURCES ENGINEER HOUCHIN: Staff also  
23 proposed that vessels with a home base in or adjacent to  
24 disadvantaged communities have additional stringency under  
25 the proposed amendments.

1           Disadvantaged communities would be identified as  
2 the highest scoring 25 percent of census tracts from  
3 CalEnviroScreen. Vessels with a home base in or adjacent  
4 to disadvantaged communities would have more stringent  
5 low-use thresholds. The proposed amendments also require  
6 a demonstration of no increase impacts on disadvantaged  
7 communities from alternative compliance plans or  
8 zero-emission credits. The proposal requires that the  
9 additional compliance time given to diesel-powered vessels  
10 must not operate in these communities.

11                   --o0o--

12           TTD AIR RESOURCES ENGINEER HOUCHIN: As you know,  
13 it is extremely important that we reduce emissions from  
14 all harbor craft in order to attain federal air quality  
15 standards and protect portside communities. Since  
16 November, we've released the Draft State SIP strategy,  
17 which identifies a shortfall in emission reductions needed  
18 to meet the ozone standard in South Coast.

19           These figures from the November hearing reiterate  
20 the estimated emissions in 2035 with and without the  
21 implementation of the proposed amendments with diesel PM  
22 emissions on the left in tons per year and NOx emissions  
23 on the right in tons per day. Statewide, the proposed  
24 amendments would result in an 89 percent reduction in  
25 diesel particulate matter emissions and a 54 percent

1 reduction in oxides of nitrogen emissions in 2035.

2 --o0o--

3 TTD AIR RESOURCES ENGINEER HOUCHIN: In November,  
4 we also showed you the cancer risk from harbor craft in  
5 the South Coast and San Francisco Bay Area air basins.  
6 Here, we show you again how far the emissions from harbor  
7 craft are felt in these high pollution area.

8 The next slide shows the reductions in cancer  
9 risk the proposed amendments would have on these two air  
10 basins.

11 --o0o--

12 TTD AIR RESOURCES ENGINEER HOUCHIN: As you can  
13 see, the area of impact and cancer risk level are  
14 drastically decreased. The proposed amendments reduce  
15 cancer risk to over 22 million residents, reduce the  
16 population weighted cancer risk from greater than 10 to  
17 only 1 chance per million, and they eliminate cancer risk  
18 of greater than 100 chances per million in the two study  
19 areas.

20 This image of the South Coast Air Basin shows  
21 many disadvantaged communities shaded gray that would no  
22 longer have an exposure to cancer risk from harbor craft.

23 --o0o--

24 TTD AIR RESOURCES ENGINEER HOUCHIN: The Board  
25 discussion in November directed staff to explore and

1 report back on four topic areas. The first was to  
2 continue outreach to stakeholders on funding opportunities  
3 available for harbor craft and to reach out to funding  
4 programs to help facilitate harbor craft owners'  
5 participation in the programs, specifically looking at  
6 small businesses and sportfishing vessel operations to  
7 facilitate the transition to cleaner technology for these  
8 operators.

9           The second was to reevaluate the compliance  
10 extension process, specifically looking at lowering the  
11 cost and workload necessary to utilize extensions.

12           The third was to regularly evaluate the status of  
13 marine technology, both zero emission and cleaner  
14 combustion, and report on the progress of commercial  
15 technology and implementation of the amendments.

16           The fourth was to evaluate the opportunity for a  
17 zero-emission contingency measure to support State  
18 Implementation Plan progress.

19           --o0o--

20           TTD AIR RESOURCES ENGINEER HOUCHIN: Before our  
21 November hearing, staff conducted over 400 meetings, site  
22 visits, calls, and emails with stakeholders. We released  
23 draft cost materials and regulatory text for feedback from  
24 the public and conducted five workshops.

25           --o0o--

1           TTD AIR RESOURCES ENGINEER HOUCHEIN: After the  
2 November hearing, the Board's direction regard -- and the  
3 Board's direction regarding additional outreach, staff  
4 conducted over 30 virtual meetings and two in-person site  
5 visits with stakeholders.

6           Staff also held a four-hour webinar in January to  
7 discuss funding available for harbor craft, as well as  
8 staff's proposed response to Board direction from  
9 November. In addition, staff participated in over 80  
10 additional calls and emails with stakeholders.

11                   --o0o--

12           TTD AIR RESOURCES ENGINEER HOUCHEIN: In response  
13 to requests from stakeholders for public records, staff  
14 also posted additional materials on our website, such as  
15 the emission inventory, final cost workbooks,  
16 informational fact sheets, health analysis methodology,  
17 and air dispersion modeling input and output files.

18                   --o0o--

19           TTD AIR RESOURCES ENGINEER HOUCHEIN: Key topics  
20 raised by stakeholders through the outreach since November  
21 broadly include comments related to feasibility  
22 affordability, and emission reductions. The next few  
23 slides will cover these and staff's responses.

24                   --o0o--

25           TTD AIR RESOURCES ENGINEER HOUCHEIN: Many

1 operators have expressed concern over the availability and  
2 performance of Tier 4 plus DPF technology. As highlighted  
3 in our rulemaking package and at the November hearing,  
4 there are 22 models of Tier 4 marine engines commercially  
5 available. In addition, there are several U.S. EPA  
6 certified Tier 3 engines that come with a DPF that are  
7 available for auxiliary use.

8 Tier 3 and 4 engines and DPFs are proven  
9 technology already in use in other sectors and will  
10 continue to be subject to U.S. Coast Guard design  
11 standards and inspections.

12 We also received comments on the affordability of  
13 replacement vessels and the viability of these costs,  
14 particularly for small businesses. Operators with these  
15 concerns would be able to apply for the feasibility  
16 compliance extensions for up to six or eight additional  
17 years to comply. Staff included extensions in the  
18 original proposal to allow small businesses to plan for  
19 compliance costs and develop price structures to pass  
20 these costs on to consumers.

21 Several comments also touched on the difficulty  
22 of obtaining incentive funding. Although there are  
23 funding opportunities. In order to provide the most  
24 conservative estimate of compliance costs, the analysis  
25 assumes no incentive funding is granted for any vessel

1 category.

2 --o0o--

3 TTD AIR RESOURCES ENGINEER HOUCHIN: We've  
4 received comments regarding the accuracy of vessel  
5 population inputs in the emissions inventory. Staff used  
6 data and other inputs from extensive industry dialogue and  
7 considered all relevant governmental database sources when  
8 finalizing vessel population and other emission inventory  
9 inputs.

10 We've also received comments from the articulated  
11 tug barge, or ATB industry, indicating that ATBs should be  
12 included under the ocean-going vessels category. ATBs are  
13 comprised of two vessels, a tugboat and a barge vessel,  
14 that operate in tandem. They typically carry refined  
15 petrochemical products such as fuels. Although ATBs can  
16 perform similar duties to ocean-going vessels,  
17 particularly medium-range tankers, ATBs are harbor craft  
18 and compete with other types of harbor craft directly. In  
19 addition, the U.S. Coast Guard establishes separate  
20 requirements for ATBs than it does ocean-going vessel  
21 tankers.

22 In response to the Board resolution from the new  
23 At Berth Regulation adopted in 2020, staff has worked  
24 extensively with ATB industry, and incorporated dedicated  
25 provisions in the alternative control of emissions section



1 for ATBs to use capture and control systems on auxiliary  
2 engines while at the terminal.

3 Staff's proposal to continue regulating ATBs as  
4 CHC would also achieve significant emission reductions  
5 while the vessels are in transit within California waters.  
6 We have also received comments requesting that commercial  
7 passenger fishing vessel, or CPFVs, only be required to  
8 turn over to Tier 3 now and zero emission later for the  
9 final transition. As documented in our staff report, the  
10 CPFV category has the lowest feasibility of any vessel  
11 category for repowering to meet the Tier 4 plus DPF  
12 performance standard.

13 In addition, the majority of CPFVs are owned and  
14 operated by small businesses, which are generally not in a  
15 strong position to finance feasibility evaluations to  
16 apply for compliance extensions.

17 Because of the unique feasibility issues, many of  
18 these companies would be granted compliance extensions  
19 based on engine technology available today. Therefore,  
20 for this category of vessels only, early upgrade to Tier 3  
21 followed by a transition in 2034 to the Tier 4 plus DPF  
22 performance standard, or zero emission, would provide a  
23 unique opportunity for early emission reductions while  
24 preserving the long-term emission benefits of the rule, as  
25 discussed in more detail on the next slide.

1                   --o0o--

2                   TTD AIR RESOURCES ENGINEER HOUCHIN:  These  
3 recommended changes would apply to CPFVs.  First, staff  
4 proposes a 15-day change to establish a compliance option  
5 for CPFVs to receive an extension to the end of 2034, if  
6 vessels are upgrade to Tier 3 by the end of 2024.  This  
7 option would require some additional data gathering as  
8 part of the already required annual reporting to help  
9 staff understand financial impacts of upgrading technology  
10 and it would require a commitment to collaborate with CARB  
11 on zero-emission advancement.

12                   This new compliance pathway would give operators  
13 additional time before the next compliance step, while  
14 providing near-term reductions through Tier 3 upgrades by  
15 2024 and providing a streamlined, less expensive extension  
16 process.

17                   Second, through resolution, staff is proposing a  
18 mid-term evaluation which will provide an opportunity to  
19 discuss if zero-emission technology should be proposed as  
20 the next step instead of Tier 4 plus DPF.  Staff would  
21 provide the Board with the mid-term evaluation by 2028.

22                   --o0o--

23                   TTD AIR RESOURCES ENGINEER HOUCHIN:  Now, we will  
24 transition into staff's response to Board direction from  
25 November.  As previously mentioned, the first area of

1 focus was outreach with stakeholders on funding. The  
2 Board directed us to continue outreach with the affected  
3 industry, which we have done by hosing our January webinar  
4 and holding over 30 individual meetings with stakeholders  
5 since our November hearing.

6 At our webinar, we provided detailed information  
7 on four funding programs and invited experts to answer  
8 questions from industry on their respective programs. We  
9 will continue to have expanded dialogue with our funding  
10 program partners to identify, communicate, and maximize  
11 the use of funding opportunities.

12 --o0o--

13 TTD AIR RESOURCES ENGINEER HOUCHIN: The second  
14 area the Board directed staff to reevaluate was the  
15 compliance extension process, specifically looking at ways  
16 to lower burdens on operators. As a reminder, the  
17 proposed amendments include five compliance extensions  
18 that operators may apply for, if they meet the extension  
19 criteria.

20 --o0o--

21 TTD AIR RESOURCES ENGINEER HOUCHIN: Staff has  
22 accordingly reexamined the compliance extension procedures  
23 and believes that those provisions conform to the Board's  
24 directives.

25 Staff has determined the current proposed

1 procedures already provide owners the flexibility  
2 demonstrate the technical and feasibility of modifying  
3 existing vessels by using readily accessible information  
4 in lieu of contracting with a third-party naval architect  
5 for an individualized assessment for a specific vessel.

6           If applicable for their vessel category, such as  
7 sportfishing vessels that cannot be modified due to their  
8 the wood or fiberglass vessel hull material, an owner  
9 could use the study published by the California Maritime  
10 Academy to demonstrate it would not be technically  
11 feasible to modify their vessel, assuming no new engines  
12 have become certified that change the CMA studies  
13 conclusions. The \$62,000 feasibility study estimate in  
14 our cost analysis was conservative, if an operator would  
15 have needed to perform their own independent  
16 vessel-specific study.

17           Staff commits to continually informing, updating,  
18 and communicating with affected industry on issues  
19 regarding all aspects of the proposed amendments, and  
20 especially regarding the compliance extensions and  
21 existing studies that meet requirements. Staff will also  
22 be available to assist owners during implementation when  
23 applying for extensions.

24                               --o0o--

25           TTD AIR RESOURCES ENGINEER HOUCHIN: The Board

1 discussion also highlighted a need to regularly report  
2 back on technology advancement. Zero-emission technology  
3 is advancing rapidly, but it remains unclear how soon it  
4 will be technically and economically viable for the wide  
5 variety of harbor craft to operate in this state.

6 Staff proposed a technology review to be  
7 completed every two years beginning in 2024, which would  
8 include a newly formed technical working group, including  
9 sportfishing and other industries to coordinate on  
10 demonstrating zero-emission operations. This review would  
11 cover the advancement of zero-emission technologies and  
12 infrastructure, as well as the advancement and commercial  
13 availability of Tier 4 plus DPF technology.

14 --o0o--

15 TTD AIR RESOURCES ENGINEER HOUCHIN: The last  
16 area the Board directed staff to evaluate was a  
17 zero-emission contingency measure, if zero-emission  
18 technology becomes feasible and available for harbor  
19 craft. Staff is proposing to explore a contingency  
20 measure for non-attainment areas, if zero-emission  
21 technology advances in the marine sector.

22 --o0o--

23 TTD AIR RESOURCES ENGINEER HOUCHIN: A draft  
24 environmental analysis, or EA, was completed for the  
25 proposed amendments that was released in September. Staff

1 determined that implementation of the proposed amendments  
2 may have potentially significant indirect impacts to some  
3 resource areas. However, these impacts are mainly due to  
4 short-term construction-related activities.

5 The Draft EA was released for a comment period of  
6 at least 45 days, which ended on November 15th, 2021.  
7 Staff prepared a final Environmental Analysis and written  
8 response to all comments received on the Draft EA and  
9 posted them on our website earlier this month.

10 --o0o--

11 TTD AIR RESOURCES ENGINEER HOUCHIN: With that,  
12 staff would like to remind the Board of the health  
13 benefits and cost effectiveness of the proposed  
14 amendments. From 2023 to 2038, the amendments would save  
15 an estimated 531 lives and result in hundreds of avoided  
16 trips to a hospital for breathing related emergencies.  
17 Furthermore, the benefits outweigh the cost of the  
18 amendments by \$3 billion, which is by a factor of two.

19 Due to emission standards for marine engines  
20 lagging behind other sectors, they remain one of the  
21 highest contributing emission sources at ports. It is  
22 imperative that the marine sector reduces its emission  
23 contribution and prioritizes near-term reductions.

24 This regulation is highly cost effective and  
25 ensures that industry invests in clean air compliant

1 technologies that achieve substantial emission reductions  
2 and public health benefits.

3 --o0o--

4 TTD AIR RESOURCES ENGINEER HOUCHIN: Staff's  
5 recommendation is to approve the written responses to  
6 environmental comments, certify the Final EA, and make the  
7 required CEQA findings and Statement of Overriding  
8 Considerations.

9 --o0o--

10 TTD AIR RESOURCES ENGINEER HOUCHIN: Additional  
11 elements of the proposed resolution include language to  
12 continue facilitating incentive opportunities and  
13 streamline compliance extensions, as well as establish a  
14 technical working group, including members of sportfishing  
15 and other industries to advance and collaborate on  
16 deployment of zero-emission technology and reported  
17 findings in a biennial technology review.

18 The resolution also includes language to direct  
19 staff to conduct a mid-term review by 2028 on the  
20 requirements for the sportfishing fleet and return to the  
21 Board. The Board would consider the findings of the  
22 review and could direct staff to begin the process of  
23 adjusting regulatory requirements.

24 And finally, the resolution proposes language to  
25 explore a zero-emission contingency measure for extreme

1 non-attainment areas.

2 --o0o--

3 TTD AIR RESOURCES ENGINEER HOUCHIN: We further  
4 recommend that the Board votes to adopt the proposed  
5 amendments with recommended 15-day changes.

6 After releasing proposed change for a 15-day  
7 period, staff will finalize the rulemaking package, which  
8 includes responding to public comments in the Final  
9 Statement of Reasons and the package will be submitted to  
10 the Office of Administrative Law.

11 Thank you for your time.

12 CHAIR RANDOLPH: Thank you.

13 Before we move to public comment on this item, I  
14 wanted to call on our former colleague who worked very  
15 hard on this regulation, Supervisor Nathan Fletcher wanted  
16 to say a few words.

17 SAN DIEGO SUPERVISOR FLETCHER: Thank you. Thank  
18 you, Chair. It is -- IT IS wonderful to see you all. I  
19 miss you all. I thoroughly enjoyed and loved and  
20 appreciated my time on CARB and thrilled to see my  
21 colleagues, Supervisor Nora Vargas who will do a much  
22 better job than I could have ever done joining your Board  
23 and doing wonderful.

24 But I just want to commend the CARB staff around  
25 issues of the passenger sportfishing fleet and some of the



1 changes that have come about, along with a number of Board  
2 members. I know I've spoken to many of you about this  
3 issue, and many of you were engaged. And I really want to  
4 commend Richard and team coming down, being on the ground,  
5 seeing the circumstances, and making reasonable  
6 accommodations that will achieve our environmental goals  
7 and our clean air goals, but will do it in a way that is  
8 real, and is sustainable, and that this really and  
9 important industry can accommodate and move forward with.

10 So just in full support of what you all are doing  
11 and really just want to commend everyone. These issues  
12 are difficult and hard, and we know that we have to clean  
13 up our environment. We know we have to clean up the air  
14 and we know we have to do it in a responsible way that  
15 takes into account some of the unique circumstances that  
16 industry has faced.

17 And so just in full support of these amendments,  
18 and again want to thank everyone for all of the hard work,  
19 and listening, and engagement that went on. And I think  
20 as a former Air Resources Board member, I'm very proud of  
21 this regulation in total and the direction it's headed.  
22 I'm particularly proud of how this industry was treated.  
23 So thank you very, very much Chair Randolph and thank you  
24 to all of you for the work you continue to do.

25 CHAIR RANDOLPH: All right. Thank you Supervisor

1 Fletcher.

2           Okay. We will now hear from the public who  
3 raised their hand to speak on this item. We have at least  
4 50 speakers lined up to speak. And as this is the second  
5 hearing on this regulation package, our time to speak will  
6 be two minutes. So, Clerk, could you please call the  
7 commenters and set a time of two minutes per commenter.

8           BOARD CLERK ESTABROOK: Yes. Thank you, chair.  
9 Our first three speakers will be Ken Franke, Jaime  
10 Diamond, and Sam Wilson. Just a reminder to everyone that  
11 with the number of hands that are up in the queue, if you  
12 lower your hand and then reraise your hand, it will put  
13 you to the bottom. So please just continue to keep your  
14 hand raised until I call on you.

15           And if you are going to be giving your comment in  
16 Spanish, please plan on speaking slowly and pausing after  
17 each sentence. And we will have an interpreter that will  
18 assist you for consecutive translation.

19           So, Ken, you may unmute and begin.

20           KEN FRANKE: Good morning, Chair Randolph and  
21 members of the Board. I'm Captain Ken Franke, President  
22 of the Sportfishing Association of California. The SAC  
23 membership comprises a majority of the Southern California  
24 Coast Guard inspected passenger fishing vessel fleet. We  
25 in the CPFV community appreciate all of your comments at

1 the November Board meeting, and recognizing the  
2 consequential impacts to families of the draft rule. We  
3 also appreciate Mr. Corey and the executive leadership  
4 team touring our vessels and hearing directly from our  
5 family owners at how they will be impacted.

6 I also want to thank former Member Nathan  
7 Fletcher for helping to take his knowledge of our fleet  
8 and CARB's charge emission[SIC] to facilitate a  
9 conversation and understanding between the fleet and the  
10 professional team at CARB. The proposed resolution  
11 recognizes the contributions of the fleet to continuously  
12 upgrade to lower emissions engines, imposes an aggressive  
13 schedule for the balance of the fleet to use best  
14 available technology, and sets definitive benchmarks for  
15 continuous development of new technologies to encourage  
16 engine of manufacturers to meet the future needs of our  
17 fleet.

18 This won't be easy and is in -- and is dependent  
19 on support from you as Board members the Legislature to  
20 access the resources necessary to meet this aggressive  
21 schedule and future innovation. Critical to this also is  
22 the fleet's cooperation with CARB to conduct technology  
23 review. And you have our commitment to maintain that  
24 cooperative effort.

25 SAC and GGFA have discussed with staff that we

1 want to ensure that the technology review is  
2 comprehensive, so that we can identify emissions and  
3 reduction opportunities, and provide an economically  
4 technical -- technologically feasible path to continuously  
5 lower emissions and eventually meet the state's long-term  
6 zero-emissions goals. This would include, but not limited  
7 to: updated emissions data and modeling; certification of  
8 engines in horsepower class; space constraints on vessels;  
9 safety of technologies, including stability and heat  
10 concerns; advanced hybrid and zero-emissions retrofit  
11 development status; dockside infrastructure; and finally  
12 monetary and non-monetary impacts to ocean education and  
13 resource protection and conservation.

14 On behalf of the SAC Board of Directors, we are  
15 in support of the draft resolution and staff presentation  
16 on 15-day changes for commercial passenger fishing  
17 vessels. Again, this is not giving the fleet a pass. It  
18 is recognizing the fleet's early actions in environmental  
19 stewardship, in setting and aggressive schedule for  
20 continuous improvement. I'd like to finally also comment  
21 that we've been in discussions with CARB staff regarding  
22 certain ecotourism vessels --

23 BOARD CLERK ESTABROOK: Thank you.

24 KEN FRANKE: -- that are not required to purchase  
25 CPFV licenses. SAC and GGFA are committed to working with

1 their members to meet the near-term goals working with  
2 CARB staff to identify --

3 BOARD CLERK ESTABROOK: Thank you. That  
4 concludes your time.

5 KEN FRANKE: Thank you.

6 BOARD CLERK ESTABROOK: Thank you.

7 Our next speaker is Jaime Diamond. Jamie, you  
8 may unmute and begin.

9 JAIME DIAMOND: Good morning, Chair Randolph and  
10 members of the Board. I am Jaime Diamond, owner of  
11 Stardust Sportfishing in Santa Barbara. As a women in  
12 this industry, I worked hard to build my family business.  
13 Everything we have is on the line, including the jobs of  
14 all of our employees. Maintaining our family business  
15 through this time, and after having just survived COVID  
16 shutdowns, has been frightening experience. That said, I,  
17 along with other family boat owners were relieved when we  
18 heard of the extension path proposed in the resolution.

19 Having the CARB staff meet with us and talk about  
20 what could be done to reduce emissions without removing  
21 out boats from service was important and much appreciated.  
22 I know there's much to be done to help fellow owners meet  
23 the aggressive timeline and I look forward to -- and look  
24 towards future emissions reductions.

25 I'm on the Board of Directors of SAC and have

1 been involved through much of the process, and I'm  
2 committed to assisting all of my fellow owners comply and  
3 to work with CARB on future reductions. I also know the  
4 men and women on our board and all of the captains and  
5 crew are strong advocates of environmental protection.  
6 They will be strong allies going forward to continue to  
7 upgrade machinery to better models.

8           We are all in support of your efforts here today.  
9 A positive outcome will save so many jobs and the ocean  
10 access for so many people in our communities that do not  
11 have the money to buy their own boats. Our kids programs,  
12 marine labs for students, the veterans fishing programs  
13 all will be saved with an approval of this resolution.

14           Looking to the future, our fleet will be right  
15 there to help work with CARB to communicate, research, and  
16 continue to upgrade engines. I look forward to your  
17 approval of the resolution.

18           My three kids ages 15, 12, and 4, who hope to  
19 take over our family business some day, thank you, and  
20 look forward to your approval of the resolution.

21           Thank you. Have a great day

22           BOARD CLERK ESTABROOK: Thank you.

23           Our next speaker will be Sam Wilson. After Sam  
24 will be David Reynolds, Richard Smith, and then Ameen  
25 Khan.

1 Sam, you may unmute and begin.

2 SAM WILSON: Hi. Good morning, everybody. My  
3 name is Sam Wilson. I'm a Senior Vehicles Analyst with  
4 the Union of Concerned Scientists. Thanks so much for the  
5 opportunity to comment today.

6 UCS appreciates the time and hard work put into  
7 this proposal and we support CARB's efforts to reduce  
8 emissions from commercial harbor craft. We urge the Board  
9 to adopt this proposal today.

10 Emissions from harbor craft are currently one of  
11 the primary cancer risks for Californians living closer to  
12 ports. The proposed rule would provide a nearly 90  
13 percent reduction in diesel particulate emissions and an  
14 over 50 percent reduction in nitrogen oxide emissions from  
15 the commercial harbor craft in our state. This will  
16 reduce cancer risks and other negative health outcomes for  
17 millions of Californians resulting in hundreds of fewer  
18 premature deaths, hospital visits, and respiratory  
19 illnesses, and also billions of dollars in related health  
20 savings.

21 This is particularly impactful for those  
22 communities living close to ports, which already bear  
23 disproportionate exposure to cumulative air toxins.  
24 Zero-emissions technologies are ready and available today  
25 and UCS suggests that CARB continue to consider and expand

1 incentives in funding for small businesses that operate  
2 vessels to transition quickly and equitably to a clean  
3 transportation future.

4 California has a very rich history of adopting  
5 effective regulations that spur innovation while reducing  
6 toxic air pollution. We encourage the Board to continue  
7 this history by adopting a strong public health focused  
8 regulation today to further expand existing zero-emissions  
9 vehicles technologies -- or vessels technology, excuse me,  
10 affecting a more equitable access to clean and healthy  
11 air, and significantly reducing exposure to cancer causing  
12 air pollution for millions of Californians.

13 Thanks again for your hard work on this proposal.

14 BOARD CLERK ESTABROOK: Thank you.

15 David Reynolds, you may unmute and begin.

16 (Conversation in the background.)

17 DAVID REYNOLDS: Thank you for this  
18 opportunity --

19 (Conversation the background.)

20 BOARD CLERK ESTABROOK: David.

21 DAVID REYNOLDS: Thank you for this  
22 opportunity --

23 BOARD CLERK ESTABROOK: Just a reminder to Board  
24 members. We'll start your clock over. Sorry, David.

25 DAVID REYNOLDS: No problem.



1 BOARD CLERK ESTABROOK: Just a reminder to  
2 everyone to continue to stay on mute.

3 And David, you may go ahead and begin.

4 DAVID REYNOLDS: Thank you for this opportunity.

5 My name is Davie Reynolds and I work at PTL  
6 Marine. PTL marine operates and services the major ports  
7 in California, including San Diego, LA/Long Beach, Port  
8 Hueneme, and the Bay Area markets. We are an industrial  
9 distribution and services provider with an emphasis on  
10 fuels, lubricants, chemicals and last mile logistics. We  
11 employ approximately 60 California residents and our  
12 organization has been operating in California since 1956.

13 The maritime industry understands and appreciates  
14 the long term viability of renewable diesel as a drop-in  
15 fuel to be used instead of convent -- conventional  
16 distillates. Current production capabilities require a  
17 great majority of the renewable diesel fuel utilized in  
18 the State of California to be imported primarily from the  
19 Gulf Coast or Asian markets.

20 Current production capacity of renewable diesel  
21 in the United States is around 600 million gallons per  
22 year with only five plants producing the product. On the  
23 positive side, production is expected to scale up as there  
24 are at least six new plants in progress that will add an  
25 additional two billion gallons per year of production

1 capacity by 2024.

2           The downside is that even with this incremental  
3 production, this still only represents a very small  
4 portion of the overall United States refinery capacity.

5           There are two California refineries, one in  
6 Martinez, and the other in the Bay Area that are being  
7 converted to renewable diesel production. These  
8 conversions will not be completed until 2023 and 2024 best  
9 case scenario. Until these conversions are completed,  
10 product availability and reliability will remain at risk.  
11 When supply is tight, there's an additional cost passed on  
12 to consumers, all consumers, not just those maritime  
13 industry operators. We request that you extend the  
14 renewable diesel fuel requirement for California harbor  
15 crafts until January 1st --

16           BOARD CLERK ESTABROOK: Thank you.

17           DAVID REYNOLDS: -- 2024.

18           BOARD CLERK ESTABROOK: Thank you. That  
19 concludes you time.

20           DAVID REYNOLDS: Thank you.

21           BOARD CLERK ESTABROOK: Our next speaker is  
22 Richard Smith. Richard, you may unmute and begin.

23           RICHARD SMITH: Good morning. My name is Richard  
24 Smith and I am commenting on behalf of Westar Marine  
25 Services. Westar is women-owned tugboat and water taxi

1 company based in San Francisco that has been in existence  
2 since 1976. Westar operates 10 small tugboats and five  
3 water taxis, and ploys about 50 women and men, many of  
4 whom are represented by the Masters, Mates & Pilots Union.  
5 Westar's market niche is marine construction support,  
6 keeping the maritime infrastructure of peers, docks,  
7 bridges, et cetera, maintained and working.

8 Westar has invested millions of its own dollars  
9 plus Carl Moyer funds over the past 20 years upgrading the  
10 engines on its vessels to reduce emissions. The company's  
11 investments demonstrate its ongoing environmental  
12 commitment. The proposed regulations will directly impact  
13 Westar and threaten the liability of the company.

14 The regulations call for the installation of  
15 engines and equipment that do not exist and physically  
16 could not be installed in the small vessels that Westar  
17 operates.

18 Loss of a company such as Westar will directly  
19 impacts the maritime supply chain issues for the State.  
20 Westar endorses the comments that will be made by the  
21 American Waterways Operators, and Westar urges the Board  
22 to vote no on this item and to direct staff to work with  
23 the maritime industry to develop regulations that are  
24 feasible.

25 Thank you.

1 BOARD CLERK ESTABROOK: Thank you.

2 Our next speaker will be Ameen Khan. After Ameen  
3 will be Christine Batikian, Jacqueline Moore, and Jim  
4 Holden.

5 Ameen, you may unmute and begin.

6 AMEEN KHAN: Good morning, Chair Randolph and  
7 Board members. My name is Ameen Khan and I am the  
8 Regulatory Affairs Advocate for California Environmental  
9 Voters, formerly the California League of Conservation  
10 Voters.

11 We thank the Board members and CARB staff for all  
12 your hard work and diligence in this issue. We are  
13 calling in support and to urge CARB to pass the strongest  
14 possible Commercial Harbor Craft Rule today. Harbor craft  
15 is one of the top resources of cancer risk around the  
16 ports of Los Angeles, Long Beach, and Oakland. We have  
17 the busiest ports in the nation. The communities closest  
18 to those ports have a 900 chance in 1 million developing  
19 cancer from the harbor craft emissions alone. This is 90  
20 times above levels what EPA deems safe. This rule will  
21 save more than 300 -- 530 California lives and protect 9.7  
22 million Californians from elevated levels of air  
23 pollution.

24 The technology exists today for zero-emission  
25 boats and ships. No industry should be given a free pass

1 ways at the price of our frontline communities and the  
2 environment. The time is now to electrify everything.

3 California's Harbor Craft Rule is an essential  
4 step towards addressing the harms of fossil fuel shipping  
5 and extend California's zero-emission transportation deep  
6 into the seas.

7 On behalf of California Environmental Voters, I  
8 urge you to pass the strongest possible version of the  
9 Commercial Harbor Craft Rule today.

10 Thank you for consideration of my comments

11 --o0o--

12 BOARD CLERK ESTABROOK: Thank you. Christine  
13 Batikian, you may unmute and begin.

14 CHRISTINE BATIKIAN: Christine Batikian  
15 representing the Port of Los Angeles. The Port of Los  
16 Angeles submitted written comments on the draft rule in a  
17 joint letter with the Port of Long Beach in November 2021.  
18 Our comments provided in that letter remain relevant and  
19 important, but we'll focus our verbal comments today on  
20 funding availability for harbor craft.

21 We have concerns with the funding programs CARB  
22 staff presented during the January meeting. Carl Moyer  
23 funding has been pointed as a main source of funding.  
24 However, Carl Moyer funding prioritization is currently  
25 set aside by the air districts. Historically, air

1 districts have provided limited, or in the case of some  
2 air districts, no funding to harbor craft through Carl  
3 Moyer.

4           Additionally, harbor craft that must meet  
5 regulations prior to 2025 will be ineligible for Carl  
6 Moyer funding as they will not meet the useful life  
7 requirements. Harbor craft that do not meet the useful  
8 life requirement may also not meet current cost  
9 effectiveness. Many vessels that currently have Tier 2 or  
10 3 engines will not be able to accommodate a Tier 4 engine  
11 in their existing vessel and will need to be replaced.  
12 Unfortunately, replacing a Tier 2 or 3 engine with Tier 4  
13 will not meet current Carl Moyer cost effectiveness.

14           We request that CARB staff set aside funding for  
15 the air districts specifically for harbor craft in Carl  
16 Moyer, adjust cost effectiveness regulation -- cost  
17 effectiveness calculations to allow for harbor craft  
18 replacements, and increase the funding amount overall.  
19 Additionally, CORE -- another program presented was CORE.  
20 CORE requires that the equipment must be verified and  
21 listed and eligible for participants to get funding.  
22 There is currently no listed harbor craft equipment or  
23 shore power infrastructure on the list of eligible  
24 equipment. Therefore, no CORE funding can be used at this  
25 time.

1           EPA's DERA funding was named as a funding source.  
2 DERA is a competitive grant against projects throughout  
3 the Entire EPA Region 9, which is four states. The  
4 funding availability is relatively small for DERA  
5 projects. We thank you for all the hard work, but the  
6 funding is not there to meet the timeline that CARB has  
7 set. CARB must set aside funding specifically for harbor  
8 craft or adjust existing funding programs in order for  
9 them to be --

10           BOARD CLERK ESTABROOK: Thank you.

11           CHRISTINE BATIKIAN: -- of any use to harbor  
12 craft owners and operators.

13           Thank you.

14           BOARD CLERK ESTABROOK: Thank you. That  
15 concludes your time.

16           Jacqueline Moore, you unmute and begin.

17           JACQUELINE MOORE: Hi. Good morning. My name is  
18 Jacqueline Moore and I'm from the Pacific Merchant  
19 Shipping Association and our members have appreciated the  
20 opportunity to work with CARB staff on the development of  
21 the amendments over the past few years. I offer three  
22 outstanding comments. And I will leave the technical  
23 comments to the many hard working harbor craft operators  
24 participating in this meeting today.

25           One strategy in various recent regulations and

1 amendment CARB is adopting are holding owners and  
2 operators jointly responsible are not being obligated to a  
3 specific party at all. CARB staff have said to let the  
4 industry work it out, but unfortunately, that's not how  
5 business works. We must rely on formal contracts and  
6 agreements.

7           Seaports have established procedures and  
8 contractual obligations. For the zero-emission  
9 infrastructure a vital component of this regulation, it  
10 will certainly cause confusion and likely conflict  
11 regarding who will be responsible for purchasing and  
12 maintaining infrastructure, and who even owns it in the  
13 end.

14           I would also like to highlight that, yes, there  
15 are some funding programs available. However, they are  
16 nowhere near offering the multi-millions of dollars  
17 required for every vessel. I highly support the comments  
18 Ms. Batikian from Port of LA just shared on the funding  
19 complications. I respectfully urge CARB and the law  
20 makers to propose and support such additional  
21 appropriations within the budget.

22           As for my main comment, the Clean Air Act  
23 requires that California obtain a waiver from EPA prior to  
24 enforcing any off-road emissions standard. This Harbor  
25 Craft Rule is just that. It is not an in-use standard.



1 The emissions standard requirement and opacity limit  
2 places a numerical limit on emissions that go beyond  
3 approved standard limitations. EPA must provide a waiver  
4 to legally enforce this. This issue has already been  
5 litigated with CARB. And thus, we respectfully urge CARB  
6 to declare your intention to obtain a waiver prior to  
7 implementation of the amendments.

8 And that concludes my comments. Again, I am  
9 Jacqueline Moore of PMSA and thank you for allowing me the  
10 time to speak today.

11 BOARD CLERK ESTABROOK: Thank you.

12 Our next speaker will be Jim Holden. After Jim  
13 will be Peter Schrappen, Regina Hsu, and Ernie Prieto.  
14 Jim, you my unmute and begin.

15 JIM HOLDEN: Well, good morning. My name is Jim  
16 Holden I'm the founder of Fish for Life, which is a  
17 13-year program that takes special needs children and  
18 their families ocean fishing, unlike any program of its  
19 kind. Our home court is Dana Point. We've also had trips  
20 from Long Beach, San Diego, and we'll be expanding to  
21 Northern California this fall and the Bay Area.

22 We have a hundred people per voyage that includes  
23 30 special needs kids, a variety of condition, autistic  
24 kids, down kids, cerebral palsy, they're all welcome, 30  
25 chaperones, and 40 volunteers that involve non-special

1 needs kids, marine biologists, wounded warriors, firemen,  
2 EMTs. We have -- it's loaded with entertainment. The  
3 trips begin with red art -- red carpet introductions down  
4 the gangway to introduce our guests as they board the  
5 boat, a fire boat escort, kites we fly as we're heading to  
6 the fishing grounds, educate them, you know, about whales,  
7 dolphins, the difference between seals, sea lions, et  
8 cetera. We even surprise them with a mermaid out in the  
9 ocean while we're under dock -- or anchor.

10 As you can imagine, you know, the trips a feature  
11 rich, but therapeutic benefits are tremendous for our  
12 honored guests, the chaperones and all the volunteers. I  
13 want to take this time to thank CARB for your compassion  
14 and substantive changes to the harbor craft engine  
15 regulation. The demands for our program is overwhelming  
16 and this will allow Fish for Life to pursue our expansion  
17 plans to serve more families with special needs children.

18 Thank you.

19 BOARD CLERK ESTABROOK: Thank you.

20 Peter Schrappen, you may unmute and begin.

21 PETER SCHRAPPEN: Thank you. My name is Peter  
22 Schrappen, Vice President for the American Waterways  
23 Operators, which represents the tugboats, towboats, and  
24 barges. California is a critical part of our trade  
25 association. The Golden State ranks fourth among all

1 states in maritime jobs and contributes a whopping \$12.2  
2 billion annually to California's economy. If I could, I'd  
3 like to brag about our strong environmental record.

4 Our members represent the greenest, and most fuel  
5 efficient transportation system. Goods moved by tugs and  
6 barges mean 43 percent less greenhouse gases than rail  
7 moved freight and about 1,000 percent less than moving the  
8 same freight by semis. We're not resting on our  
9 environmental bonafides however. We are continually  
10 pushing the envelope as is the entire industry to get to  
11 zero emissions.

12 Unfortunately, we find ourselves at an impasse  
13 with this draft rule. These regulations are economically  
14 infeasible with dangerous modifications based on  
15 technology that has not been invented. I'm talking about  
16 DPFs. Unlike trucks, boats can't pull to the side of the  
17 road and call 911 and wait for a fire truck. They're at  
18 sea and if they catch fire, it places their crew and the  
19 ships they escort at risk.

20 Tugs, towboats, and barges are part of the  
21 nation's critical infrastructure and I don't want to bury  
22 the lead. This rule will disrupt and already supply --  
23 strained supply chain and devastate a critically important  
24 part of California's infrastructure, the workhorses of the  
25 working waterfront that supply Californians with their

1 groceries and fuel.

2           If you think times are tough now with  
3 (inaudible), in the market, wait until we all feel the  
4 pain that this rule will bring.

5           We have made our positions clear with our comment  
6 letters. We stand ready to work with CARB, but let's not  
7 jeopardize the lives of mariners. Let's pick better path.  
8 One that gets to zero emissions in a safe manner, one that  
9 allows DPFs a chance to get approved by the Coast Guard  
10 with a six-year grace period, one that exempts non-harbor  
11 craft like ocean-going tugs and ATBs because of the  
12 already in place At Berth Regulation where they are better  
13 suited, and let's seize the moment to get outdated  
14 technology out of the environment before we leave to  
15 require an unproven and dangerous technology.

16           Thank you for your time.

17           BOARD CLERK ESTABROOK: Thank you.

18           Regina Hsu, you may unmute and begin.

19           REGINA HSU: Good morning Chair Randolph and  
20 members of the Board. My name is Regina Hsu and I'm an  
21 attorney with Earthjustice. Thank you for the opportunity  
22 to comment today.

23           We urge CARB to adopt the Commercial Harbor Craft  
24 rule, the culmination of years of work by staff. By  
25 adopting this rule, CARB will fulfill a promise to

1 front-line communities to clean up harbor craft, which  
2 staff identified as a growing source of diesel pollution  
3 four years ago.

4           Since then, our portside communities have been  
5 suffering from an onslaught of toxic pollution due to  
6 increased activity at the ports. This growth at our ports  
7 means that we need to act now to clean up these various  
8 sources of port pollution.

9           The harbor craft rule is an opportunity for CARB  
10 to pass a critical public health measure that will save  
11 over 500 lives and bring much needed relief to our port  
12 communities. We appreciate staff's hard work and glad to  
13 see the first zero-emission requirements for harbor craft  
14 in this rule. We support the biennial technology review  
15 as well. Zero-emissions technology for harbor craft is  
16 developing quickly and these frequent technology reviews  
17 will be important to ensuring that we are achieving all of  
18 the emission reductions we can from this sector.

19           We also support the commitment to pursue a  
20 contingency measure. Additional zero-emission  
21 requirements for harbor craft will be critical for  
22 non-attainment areas, such as the South Coast and San  
23 Joaquin Valley.

24           Again, we'd like to thank staff for their hard  
25 work and urge CARB to stand with communities and adopt

1 this rule. Thank you.

2 BOARD CLERK ESTABROOK: Thank you.

3 Our next speaker will be Ernie Prieto. After  
4 Ernie will be Jerry Desmond, Laura[SIC] Gularte, and David  
5 McCloy.

6 Ernie, you may go ahead and begin.

7 ERNIE PRIETO: Good morning. My name is Ernie  
8 Prieto, Captain of the Chubasco II in Oceanside,  
9 California. The regulations that were considered at your  
10 November hearing are not economically or structurally  
11 feasible. We would be forced to build a new vessel at an  
12 estimated cost of \$5 million forcing me to triple the  
13 price of one of our half-day trips, likely eliminating my  
14 marine education and fishing outreach programs. There is  
15 no way we could sustain current passenger loads at those  
16 prices. No way we could stay in business.

17 In stark contrast, I can support the resolution  
18 being considered today that proposes an alternative  
19 compliance path for commercial passenger fishing vessels,  
20 otherwise known as sportfishing boats. With its passage,  
21 boat owners, like myself, will be set on a compliance path  
22 that is tough, but manageable.

23 Once more, millions of Californians will be  
24 assured affordable access to fishing. This is important  
25 for all Californians, especially since there's been an

1 increase in fishing participation with significant growth  
2 amongst families. The recreational boating and fishing  
3 foundation recently reported that fishing participation  
4 rates have increased to a 12-year high with notable growth  
5 amongst non-traditional participants that are younger,  
6 more urban, and more diverse with significant --  
7 significant gains amongst women, African Americans,  
8 Hispanics, and Latinos.

9 But I do not need a report to tell me this. My  
10 passengers are diverse and multi-cultural, representative  
11 of what makes California so special, a culture full of  
12 smiles and excitement when they have hooked a fish or  
13 experienced the ocean for the very first time.

14 With the adoption of the resolution, I can  
15 continue to support my family, my family of employees, and  
16 California's community of anglers.

17 Thank you.

18 BOARD CLERK ESTABROOK: Thank you.

19 Jerry Desmond.

20 JERRY DESMOND: Good morning, Chair and members.  
21 This is Jerry Desmond on behalf of Recreational Boaters of  
22 California, RBOC, a non-profit advocacy organization that  
23 has pro -- been promoting and protecting the interests of  
24 the State boaters for over 50 years. We were a signer on  
25 the November 3rd comment letter to the Board on this

1 issue. And we appreciate and understand the achievements  
2 that have been accomplished in terms of the proposed  
3 regulation since that date, and we align ourselves with  
4 the comments that Ken Franke and the Sportsfishing  
5 Association of California, and the other sportfishing  
6 folks that are testifying today. We appreciate the effort  
7 to engage with our community.

8 Thank you.

9 BOARD CLERK ESTABROOK: Thank you. Lauren -- go  
10 ahead.

11 CHAIR RANDOLPH: We going to close the queue for  
12 public comment, so if you have not yet raised your hand or  
13 dialed star nine, please do so now. And 10:10, the queue  
14 will close.

15 Thank you very much.

16 BOARD CLERK ESTABROOK: Thank you. Lauren  
17 Gularte, you may unmute and begin.

18 LAUREN GULARTE: Good morning, Chair Randolph and  
19 commissioners. My name is Lauren Gularte representing the  
20 Water Emergency Transportation Authority, which operates  
21 San Francisco Bay Ferry Services. Thank you for the  
22 opportunity to comment today.

23 WETA is supportive of the goal of the proposed  
24 amendments and is committed to operating the cleanest  
25 vessels possible. In partnership with CARB, WET -- WETA



1 staff have worked throughout the last year plus to develop  
2 an alternative control of emissions plan that will shift  
3 50 percent of our vessel fleet to zero emissions by 2035.  
4 We appreciate the time and effort your staff has committed  
5 to working with us and developing this plan and addressing  
6 our concerns with previous versions of the proposed  
7 amendments.

8           In advance of the November 19, 2021 hearing, we  
9 submitted a letter outlining two remaining requests for  
10 changes to the proposed amendments. First, we requested  
11 CARB to clarify language which discussed language  
12 regarding funding restrictions for an operator's ACE plan.  
13 And we requested that CARB make changes to limit the use  
14 of grant funds -- I'm sorry, to -- rather than limiting  
15 the use of grant funds to implement an operator's ACE  
16 Plan, we suggest that the restrictions on the use of grant  
17 funds come directly from the granting agency.

18           Secondly, we requested CARB to address the  
19 situation of an in-process vessel repower project that  
20 will occur -- well, that will have an engine out of a  
21 vessel on December 31st, 2022, which is the date that is  
22 used to document the engine model year of the vessel and  
23 therefore sets the compliance year for that vessel. We  
24 will have a vessel in the shipyard at that time and  
25 requesting the language to be included to address that

1 situation.

2 We hope that CARB's Commission will direct staff  
3 to address these two remaining requests for changes to the  
4 proposed amendments today. In addition, we also want to  
5 urge CARB to act promptly in reviewing an operator's ACE  
6 plan, once these regulations go into effect. We have a  
7 lot of work to secure funding and expediting approval will  
8 help position WETA to bring these projects closer to  
9 reality. Thank you for the time.

10 BOARD CLERK ESTABROOK: Thank you.

11 Our next speaker will be David McCloy. After  
12 David, will Donna Kalez, Shawn Bennett and Tim Ekstrom.

13 David, you may unmute and begin.

14 DAVID MCCLOY: Good morning. My name is David  
15 McCloy. I'm with the San Francisco Bar Pilots. Thanks  
16 for the opportunity to speak. My company owns and  
17 operates 5 of the 10 pilot vessels in California.

18 We support the efforts of CARB to improve air  
19 quality in California. The Bar Pilots, along with our  
20 ratepayers, are currently building the first Tier 4  
21 powered high-speed pilot vessel in the U.S. It will  
22 replace our current Tier 2 vessel. Delivered in November  
23 of this year, it will be ahead of the proposed compliance  
24 date for that vessel.

25 The current regs now require emissions compliance

1 upon new construction of vessels or repowers, along --  
2 similar to EPA U.S. EPA requirements. The new proposed  
3 regulations will require the Bar Pilots to prematurely  
4 replace our fleet by the end of 2025. That's only three  
5 and a half years from now, at the cost of approximately  
6 \$50 million to us and our industry ratepayers.

7           The design and engineering requirements timeline,  
8 along with the financial impact on such a short timeline  
9 will create an unreasonable burden on the piloted  
10 infrastructure. We embrace the concept and efforts to  
11 improve air quality in our area and the State as well, but  
12 we just need more time to renew our fleet and comply with  
13 the regs. So our request is to have additional time for  
14 our vessels to meet the requirements. The current  
15 proposed regs don't allow much extensions for our  
16 particular fleet.

17           Thanks for your time. That's it.

18           BOARD CLERK ESTABROOK: Thank you.

19           Donna Kalez, you may unmute and begin.

20           DONNA KALEZ: Thank you. Good morning, Chair  
21 Randolph and members of the Board. My name is Donna Kalez  
22 and I, along with my family, own and operate Dana Wharf  
23 Sportfishing here in Dana Point.

24           As a fleet, we always have and will remain in  
25 support of economically and technically feasible emission

1 reduction efforts. As noted in the January workshop, our  
2 fleet has comprised about 80 percent of the marine  
3 projects over the last number of years, giving our fleet a  
4 significant jump on early implementation of lower emission  
5 technologies.

6 Many owners have taken advantage of grant  
7 programs to upgrade their vessels, two and even three  
8 times, as lower emission engines were developed. The  
9 grant funding has been critical to these improvements.  
10 The inspected fleet stood at about 295 Tier 0 vessels in  
11 1998, while the economics of the fleet has resulted in the  
12 loss of about a third of those inspected vessels. Since  
13 then, the grant programs have allowed 87 percent of the  
14 remaining 193 full-time vessels to be upgraded to one of  
15 the two latest tiers approved for our vessels, and over 41  
16 percent were the latest available tiers as of February  
17 1st, and more upgrades have taken place since then. All  
18 around, this is a huge involuntary emission reduction  
19 effort in partnership with the fleet, CARB, and our local  
20 AQMDs that have offered marine grants.

21 We look forward to the approval of this  
22 resolution and the 15-day comment period changes to  
23 continue this important work and partnership. Your  
24 support today and support of legislative funding will  
25 allow the full-time commercial passenger fishing vessel

1 fleet to meet the aggressive timelines in the changes and  
2 send --

3 BOARD CLERK ESTABROOK: Thank you.

4 DONNA KALEZ: -- the signal to engine  
5 manufacturers. Thank you so very much for your time.

6 BOARD CLERK ESTABROOK: Thank you. That  
7 concludes your time.

8 Our next speaker will be Shawn Bennett. And it  
9 is now past 10:10 so the list to sign up is now closed.

10 Shawn, you may unmute and begin.

11 SHAWN BENNETT: Great. Thank you so much for the  
12 time to speak here. My name is Shawn Bennett.

13 BOARD CLERK ESTABROOK: Shawn.

14 SHAWN BENNETT: Can I stop you there and ask that  
15 you mute the device in the background.

16 SHAWN BENNETT: I'm not sure what that device is,  
17 but how is that?

18 BOARD CLERK ESTABROOK: That sounds great. Thank  
19 you.

20 SHAWN BENNETT: Does that work?

21 BOARD CLERK ESTABROOK: No, now there's feedback  
22 again.

23 SHAWN BENNETT: I'm not sure.

24 BOARD CLERK ESTABROOK: It sounds like it's off  
25 now. Are you --

1 SHAWN BENNETT: Yeah, if I try to talk.

2 BOARD CLERK ESTABROOK: Oh. So there's a --

3 SHAWN BENNETT: I'm not sure --

4 BOARD CLERK ESTABROOK: Is the audio coming  
5 through somewhere else and it's picking it up. If you  
6 have a headset or headphones and then I can maybe come  
7 back to you.

8 SHAWN BENNETT: Yes, please. I'll try.

9 BOARD CLERK ESTABROOK: Okay. All right. Let's  
10 go to Tim Ekstrom. Tim, you may unmute and begin.

11 Tim, are you there?

12 TIM EKSTROM: Okay. Can you hear me now?

13 BOARD CLERK ESTABROOK: Yes, I can. Thank you

14 TIM EKSTROM: Good morning, Chair Randolph and  
15 members of the Board. I am Captain Tim Ekstrom with the  
16 sportfishing vessel Royal Star based in San Diego.

17 I am in support of the proposed extension path  
18 and resolution for our sector. The overnight fleet in  
19 California departs our harbors for trips from 1 through 16  
20 days offshore. While the presence of offshore vessels  
21 like Royal Star in California waters is far less than  
22 coastal vessels, we share the desire for reduced  
23 emissions.

24 Many boats in our fleet are already powered by  
25 Tier 2 and tier 3 engines and more are transitioning now.

1 Our fleet history of voluntarily upgrading machinery and  
2 reducing emissions is well established. I am incredibly  
3 appreciative that the CARB staff joined us in San Diego to  
4 discuss a logical path for emissions reductions while  
5 maintaining the viability of our fleet.

6 The owners, captains, and crews are a small  
7 portion of the individuals who will be impacted by a  
8 positive outcome today. Hundred of thousands of people  
9 who visit our coastal communities will continue to enjoy  
10 coastal and offshore voyages, learn about the ocean and  
11 cherish the ability to sustainably harvest fresh seafood  
12 for their families from value-based sportfishing voyages.

13 Hotels, restaurants, and numerous other support  
14 businesses will remain in tact and thrive while our fleet  
15 reduces emissions through machinery upgrades and  
16 technology on a clear path towards an ultimate  
17 zero-emissions goal. This is a shining example of what  
18 productive collaboration can produce.

19 On behalf of my crew, our family, and the entire  
20 fleet of commercial passenger fishing vessels, thank you  
21 to CARB staff and you for your consideration of this  
22 important resolution.

23 BOARD CLERK ESTABROOK: Thank you.

24 All right. Shawn Bennett let's try again.

25 SHAWN BENNETT: Okay. How is that?

1 BOARD CLERK ESTABROOK: That's perfect.

2 SHAWN BENNETT: Okay. Great. Sorry about that.  
3 Thanks for your time. I'm name is Shawn Bennett. I'm the  
4 owner of Baydelta Maritime. We are a tugboat company that  
5 runs tugs and boats in San Francisco Bay and LA/Long  
6 Beach. And we employ about 40 people. We're a small  
7 business.

8 And you know, our specific role in the tugboat  
9 business is really running purpose-built tugs that are  
10 meant to prevent oil spills just to put it bluntly.  
11 They're very much designed specifically to the  
12 requirements of the Oil Spill Prevention Act of 1990. And  
13 that requires best achievable technology. We tether to  
14 the back of tankers that come in and out of San Francisco  
15 Bay and LA/Long Beach. And our job is to stop them if a  
16 pilot, you know, requests the need for any sort of issues  
17 with mechanical or, you know, navigational or anything to  
18 the effect. And we've made a lot of progress doing that  
19 over the years and I think water cleanup has been a really  
20 big focus.

21 Now, one of the issues and concerns we have with  
22 this regulation is it requires a lot of power and a lot of  
23 stability in the design of our vessels to do that, you  
24 know, carry out that duty. We do -- we turn basically  
25 sideways to stop the tanker when we need to and there



1 hasn't been enough really looked into how this DPF  
2 equipment will affect the stability of our vessels. I  
3 know there's been some collaboration and a lot of  
4 meetings, and -- but specifically to that concern, we need  
5 some more time to look at that, because it will change the  
6 stability of our vessels, and that is a critical part.

7           Also, it can affect the horsepower. And, you  
8 know, obviously a lack of horsepower would change our  
9 capabilities there. And so I think for us what we'd like  
10 to see is really, you know, some time spent with the naval  
11 architects, the engine manufacturers, and everybody, you  
12 know, along with CARB to take a very close look at that  
13 topic.

14           The other issue we have is shipyard capacity.  
15 It's hard to even get enough time right now to get our  
16 ship -- our tugs painted. I get really concerned by  
17 this ability to get the work done.

18           BOARD CLERK ESTABROOK: Thank you. That  
19 concludes your time.

20           SHAWN BENNETT: Okay. Thank you.

21           BOARD CLERK ESTABROOK: Thank you.

22           Our next three speakers will be Barry McCooey,  
23 Art Mead and Leela Rao.

24           Barry, we have your slides that you submitted in  
25 advance, and so we will go ahead and pull that up. I will

1 run the timer and let you know, because you will not be  
2 able to see it on the screen while your presentation is  
3 up.

4 Go ahead and begin.

5 BARRY MCCOOEY: Thank you very much. I'm Barry  
6 McCooey from M&H Engineering.

7 Next slide, please.

8 --o0o--

9 BARRY MCCOOEY: We have developed and designed a  
10 set of marine engineered -- engines that are certified to  
11 EU Stage 5 and U.S. Tier 4, and will also CARB's Tier 4  
12 plus DPF regulations. Our design -- our engines are  
13 designed to meet and exceed all present and future marine  
14 emissions. We start with 55 to 317 kilowatts this year  
15 being launched in Q3 and 350 to 680 kilowatts in Q3 next  
16 year. Our engines are designed propulsion, generators, or  
17 auxiliary applications, and are cooled as normal marine  
18 engines would be.

19 Next slide, please.

20 --o0o--

21 BARRY MCCOOEY: Our engines, again we designed  
22 the package to be as a replacement engine for all the Tier  
23 2, Tier 3 engines out there being used today. They're  
24 ideal for commercial passenger fishing vessels with wooden  
25 and fiberglass construction or aluminium. We're aware of

1 these construction. We also have these constructions in  
2 the UK and Europe. And this equipment will fit into it.  
3 We understand weight, balance, trim is critical. Again,  
4 our engines are designed to be direct replacements.

5 The layouts, configurations are exactly the same  
6 as what you're used to, that 12 and 24 volt options. We  
7 have front PTO options for hydraulics and generators --

8 BOARD CLERK ESTABROOK: Thirty seconds remaining.

9 BARRY MCCOOEY: -- designed to operate at sea  
10 safely without compromising vessel handling.

11 Next slide, please.

12 --o0o--

13 BARRY MCCOOEY: The aftertreatment can be  
14 remotely fitted in void spaces, or on deck, or behind the  
15 engines. All our engines are packaged and protected, so  
16 there's no hot surfaces, no fire risks, things like that.  
17 The size of the aftertreatment on the 9-liter is  
18 equivalent to two 25-liter drums. We've also gotten  
19 engines designed for hazardous area applications, the  
20 petrochemical barges, and hazardous applications.

21 Next up.

22 BOARD CLERK ESTABROOK: Thank you. That  
23 concludes your time. We do have your slides. We have them  
24 saved and received, and so they will be available. If you  
25 submit them to the docket, we will also have them posted

1 electronically for others to see, but we do have your  
2 slides and staff has them as well.

3 Art Mead, you may unmute and begin.

4 ART MEAD: Yeah. Thanks, Katie. Art Mead,  
5 Crowley Maritime. Overall Crowley has almost no objection  
6 to the proposed amendments to the Commercial Harbor Craft  
7 Rule. However, there remains one material issue that must  
8 be addressed. The proposed language includes a very  
9 generalized definition of an articulated tug barge, known  
10 as ATBs that includes ocean-going vessels.

11 Not all ATBs are the same and Crowley operates  
12 several ocean-going vessel ATBs engaged in interstate  
13 commerce along the United States west coast. These  
14 vessels exceed 700 feet in length and transport in excess  
15 of 120,000 barrels of bulk liquid energy. These vessels  
16 are not harbor craft and spend only a small portion of  
17 their operating hours in regulated California waters.

18 In fact, our OGV ATBs which do not separate are  
19 longer than the U.S. Navy's Ticonderoga class guided  
20 missile cruisers, hardly harbor craft. This is not a new  
21 issue. With the passage of the At Berth Rule two years  
22 ago, Crowley objected to exempting. OGV ATBs from that  
23 rule. The resolution adopted by the Board at that time  
24 directed staff to engage the ATB industry to determine the  
25 best options for cost-effective emissions reductions that

1 recognize the unique nature of ATBs during the harbor  
2 craft update.

3 In fact, the proposed harbor craft rule will  
4 force Crowley's operations in California to cease by 2024.  
5 The capacity reduction of two million barrels will be  
6 replaced by less efficient foreign tankers, which are not  
7 regulated as harbor craft, traveling across the globe,  
8 increasing harmful air emissions with other unintended  
9 harmful economic consequences to western states.

10 Crowley urges the Board to direct staff to  
11 develop a pathway to acquire OGV ATBs to comply with shore  
12 power requirements. Rather than drive Crowley's American  
13 flag OGV ATB fleet out of the state, the CHC Regulation  
14 should include more flexible and effective alternative  
15 compliance pathways to achieve the emissions reductions  
16 mandated. We look forward to continuing --

17 BOARD CLERK ESTABROOK: Thank you. That  
18 concludes your time.

19 ART MEAD: -- discussions with the Board and staff  
20 on addressing this important issue.

21 BOARD CLERK ESTABROOK: Our next speaker will be  
22 Leela Rao. After Leela will be Scott Merritt, Rick  
23 Powers, and Wayne Kotow.

24 Leela, you may unmute and begin.

25 LEELA RAO: Thank you, Chair Randolph and members

1 of the Board for the opportunity to make comments on the  
2 proposed amendments to the commercial harbor craft  
3 regulation. My name is Leela Rao and I'm with the Port of  
4 Long Beach.

5 The Port supports the intent of this regulation,  
6 substantial emission reductions from harbor craft, and  
7 appreciates the efforts by CARB staff to engage  
8 stakeholders throughout this rulemaking process. Together  
9 with the Port of Los Angeles, the Port of Long Beach has  
10 met with staff numerous times and submitted several  
11 comment letters.

12 However, the issues from our most recent comment  
13 letter remain unaddressed and staff propose 15-day  
14 changes. Those comments still apply, but I'll focus my  
15 comments today on the most significant issue for  
16 compliance with the proposed amendments, the lack of  
17 sufficient incentive funding for replacement of harbor  
18 craft used at ports.

19 Although CARB staff continues to highlight  
20 several funding programs as being available for harbor  
21 craft projects, the reality is that these programs aren't  
22 accessible to harbor craft operators. A prime example is  
23 the Carl Moyer Program. While significant dollars are  
24 allocated to Carl Moyer each year, the districts don't  
25 often prioritize harbor craft. In addition, meeting the

1 cost effectiveness -- effectiveness requirements will be  
2 very difficult for vessels requiring new builds, which  
3 includes many tugboats due to their individualized and  
4 compact designs.

5 Vessels required to be replaced or upgraded by  
6 2025 will also be completely ineligible for Moyer funding  
7 due to the cost-effectiveness requirements. DW funding is  
8 similarly difficult to access, because it only  
9 incentivizes retrofits instead of new builds and the  
10 incentives are far too low. The ports are committed to  
11 reducing emissions from harbor craft as evidenced by our  
12 harbor craft technology advancement projects underway.

13 However, harbor craft continues to be one of the  
14 most challenging sources of emission, in large part,  
15 because many vessels need to be replaced, not retrofitted,  
16 to provide enough space on board for emission control  
17 technology, and the cost for the cleanest vessel  
18 technologies is upward of \$20 million per vessel.

19 We respectfully ask the Board to direct staff to  
20 ensure sufficient dedicated harbor craft funding sources  
21 to aid in compliance with these proposed amendments.

22 Thank you.

23 BOARD CLERK ESTABROOK: Thank you.

24 Next will be Scott Merritt. Scott, you may  
25 unmute and begin.

1           SCOTT MERRITT: Thank you. My name is Scott  
2 Merritt. I've spent my entire 39-year professional career  
3 serving the tug and barge industry. I've served as COO of  
4 Foss Maritime, Chairman of the Board of AWO, Vice Chair of  
5 the Harbor Safety Committee of San Francisco Bay. I've  
6 spent the last three years supporting the towing industry  
7 and attempting to understand the proposed rules and to  
8 provide meaningful input to CARB staff in support of a  
9 responsible regulation.

10           Unfortunately, the rule as written will be  
11 difficult, if not impossible, to comply with, challenging  
12 to administer and enforce, and disruptive to the supply  
13 chain, lead to the loss of living wage jobs, and most  
14 importantly be counterproductive to the goal of achieving  
15 zero emission.

16           Because I understand my time is limited, I'm  
17 going to start with an ask, one we've made to staff and  
18 Board members, and follow with supporting notes as time  
19 allows. They are all included in my written comments.

20           We ask that you allow low-emission, Tier 3 and 4,  
21 engines to operate without modification for their useful  
22 life of up to 25 years from the engine model year. When  
23 adjusting for life expectancy of tugs versus trucks, this  
24 is consistent with CARB regulations governing Class 8  
25 trucks.



1           We propose an exchange when time is up that  
2 vessel owners will retire those vessels and replace them  
3 with zero-emission vessels or provide a penalty that would  
4 fund zero-emission tug projects to ensure we made that  
5 transition. This would all guarantee a steady  
6 transformation from diesel to zero emissions starting in  
7 the early 2030s and completing by the mid-2040s. Short of  
8 this, we'd ask for the same consideration given the  
9 commercial passenger fishing vessels by including us in  
10 the Resolution 22-6 pathway.

11           We -- the justifications I'm going to run out of  
12 time to go into, but I'd ask you to read our comments and  
13 read the comments of AWO. And I thank you for your time.

14           BOARD CLERK ESTABROOK: Thank you.

15           Rick Powers, you may unmute and begin.

16           RICK POWERS: Thank you, Chair Randolph and  
17 members of the Board. I am Captain Rick Powers, President  
18 of the Golden Gate Fishermen's Association. Our  
19 association membership comprises the majority of the  
20 Northern California Coast Guard inspected passenger  
21 fishing vessels. Thank you for your comments at the  
22 November Board meeting and your appreciation for the  
23 impact and consequences of the rule on the lives of our  
24 members.

25           Our organization is in support of the draft Board

1 Resolution as it pertains to our sector. We share  
2 everyone's desire for clean air and emissions reductions.  
3 The fleet has been upgrading machinery for years as new  
4 technology is available, and over 40 percent of the fleet  
5 is using the best available technology that is safe to use  
6 on our vessels. However, many in our fleet have not  
7 previously been eligible for grant funding.

8           Critical to the solution that is now presented is  
9 that there is an appropriate compliance path for us to  
10 work with the CARB Board and the Legislature to expedite  
11 lowering emissions for the fleet coast wide. This funding  
12 support is critical, especially for our operators out of  
13 the smaller ports that haven't had grant opportunities in  
14 the past. We are fishermen, educators, and environmental  
15 stewards. We care tremendously about the long-term  
16 sustainability of our air and ocean resources. Working  
17 together on a coast-wide solution provides our fishing  
18 culture a future and will help to maintain our coastal  
19 communities dependent on tourism.

20           The draft resolution will also ensure that while  
21 we continue to work towards zero-emissions goals, we can  
22 still operate and provide the valuable service of ocean  
23 access to the regional community. This is especially  
24 important for our marine education trips and sportfishing  
25 services to those that economic -- economically are unable

1 to afford their own boat.

2 We look forward to working with the CARB staff in  
3 the future to discuss next steps. Please approve the  
4 changes related to CPFVs.

5 Thank you.

6 CHAIR RANDOLPH: Thank you. Our next speaker  
7 will be Wayne Kotow. After Rain -- Wayne will be Steven  
8 Brink, Kristin Joseph, and then Jim Luttjohann. Wayne,  
9 you may unmute and begin.

10 WAYNE KOTOW: Good morning, Chair Randolph and  
11 members of the Board. I'm Wayne Kotow, Executive Director  
12 for Coastal Conservation Association of California. CCA  
13 Cal represents the recreational angling community  
14 throughout the state. Ocean access is paramount in the  
15 efforts of our organization. We have worked for years  
16 with SAC, Captain Rollo's Kids at Sea, CDF, and many other  
17 organizations to provide opportunities to take kids for  
18 their first fishing trip.

19 Several hundred thousand kids have been  
20 positively impacted over the years by this effort. We are  
21 also here to advocate and protect our resources,  
22 environment, habitat, and the people who enjoy them. The  
23 passenger sport fishing fleet is the gateway for so many  
24 of our community to the ocean. Enjoyment, healthy  
25 environment, and food for the table are all positive

1 impacts -- (clears throat) -- excuse me -- of the gateway.

2 I'm here today to share our support for the  
3 resolution and compliance path presented to the commercial  
4 passenger fishing vessels. It just makes sense. It  
5 results in continued emissions reductions that still meet  
6 our shared goals. It also maintains our critical ocean  
7 access that we now know is so viable -- valuable since  
8 coming out of our COVID lockdowns.

9 Thank you.

10 BOARD CLERK ESTABROOK: Thank you.

11 Steven Brink, you may unmute and begin.

12 Steven, are you there?

13 Okay. It doesn't look like you have unmuted, so  
14 I will come back to you.

15 Kristin Joseph, you may unmute and begin.

16 KRISTIN JOSEPH: Good morning. My name is  
17 Kristin Joseph and I represent R.E. State Engineering.  
18 R.E. State is a small family-owned heavy marine  
19 construction company headquartered in San Diego.

20 The proposed CHC amendments impact every single  
21 piece of marine equipment we own. So needless to say,  
22 we've been an engaged partner in the review process.  
23 We've provided detailed comments to staff throughout the  
24 process as well as to the Board in November, but we still  
25 feel like our concerns have not been adequately addressed.

1 They include allowing reasonable time for upgrades and  
2 extensions, providing funding for upgrades, and providing  
3 flexibility and grant application requirements. We'd like  
4 to see incentive-based compliance, so something like the  
5 DOORS Program, and we'd like a small business phasing plan  
6 included that allows for more time for small businesses.

7 In addition to the items that we just listed,  
8 we'd like to request that CARB staff employ a maritime  
9 expert that knows our vessels and their capabilities and  
10 can serve as a liaison between stakeholders and CARB staff  
11 to assist with the implementation of this new rule.

12 We would encourage the Board not to improve the  
13 proposed regulations today. Although, we do recognize  
14 that in the proposed resolution before you today, that  
15 there is reso -- language that would allow staff to keep  
16 working with stakeholders. If this item is approved  
17 today, we would hope that the items I identified can be  
18 work through before final adoption.

19 Thank you.

20 BOARD CLERK ESTABROOK: Thank you.

21 Steven Brink, let's try one more time. Can you  
22 unmute and begin. It looks like you were unmuted briefly  
23 and now you're muted again.

24 STEVEN BRINK: There we go.

25 BOARD CLERK ESTABROOK: There we go.

1 STEVEN BRINK: I think we can hear me now.

2 Thank you very much.

3 BOARD CLERK ESTABROOK: Yes, we can.

4 STEVEN BRINK: Thank you. So good morning, Chair  
5 Randolph and Board members. I'm Steve Brink, California  
6 Forestry Association, Vice President, Public Resources.  
7 Today, I'm representing forest products shipments from the  
8 port at Humboldt Bay on the north coast. And that's the  
9 extent of my comments will be focused on that low-use  
10 port.

11 We provided written comments back in November.  
12 And they were catalogued and received and there's been no  
13 written response that I can find about our comments, and  
14 so that's why I'm here today verbally.

15 So the port at Humboldt Bay. Two inventoried  
16 towing vessels, that's one percent of the statewide total,  
17 one percent. CARB used the Port Emissions Inventory Data  
18 from Port of Angeles, Port of Long Beach, Port of Oakland.  
19 CARB did not use any data from the Port of Humboldt Bay,  
20 which is not surprising, because the airshed at Humboldt  
21 Bay is in attainment, and always has been, and will  
22 continue to be in attainment for the foreseeable future.

23 With one percent of the towing vessels air  
24 quality in attainment, only five to six freighters a year  
25 at that port, a low-use port, I don't see any data that

1 would indicate that the Port of Humboldt Bay should be  
2 administered the same as the Port of Long Beach or Los  
3 Angeles, or any other major California port.

4 Humboldt Bay should be exempt from the commercial  
5 harbor craft rule, period. Thank you for the opportunity  
6 to comment.

7 BOARD CLERK ESTABROOK: Thank you.

8 Next will be Jim Luttjohann. After Jim will be  
9 Max Cohen, Will Roberts, and Elliot Gonzales.

10 Jim, you may unmute and begin.

11 JIM LUTTJOHANN: Good morning. I'm the President  
12 and CEO of Love Catalina Island, Catalina Island's tourism  
13 authority, which encompasses the local chamber of  
14 commerce, visitors bureau, and film office. I'm also a  
15 life-long asthmatic, so I see all sides of the issue at  
16 hand.

17 Love Catalina has over 250 businesses as members  
18 working and residing on Catalina Island that are a hundred  
19 percent dependent on visitors at tourism drives our local  
20 economy. Those businesses and visitors need reliable and  
21 affordable daily transportation to and from Catalina  
22 Island. In a typical year, Catalina Island welcomes about  
23 one million visitors, the majority of which traveled via  
24 passenger ferry.

25 On behalf of Love Catalina and more than 1,000

1 petition signatories, who reside, work, and travel to and  
2 from Catalina Island, all of which have been submitted --  
3 sorry, lost my place there -- all of which have been  
4 submitted as written testimony will remain deeply  
5 concerned over CARB's proposed Harbor Craft Rules. The  
6 lack of certainty of dedicated funding for commercial  
7 ferries like Catalina Channel Express, and other passenger  
8 ferries, to comply with the new regulatory mandates being  
9 proposed is very troubling.

10           Without a new dedicated funding stream, Catalina  
11 Express and other passenger ferries will not be able to  
12 reach compliance and it's difficult to see how this  
13 regulatory program will succeed without ferries like  
14 Catalina Express as part of the solution.

15           Without State funding to make this transition  
16 feasible, the current proposed regulations place an  
17 impossible financial burden on Catalina Express and the  
18 other ferry services as privately operated utilities  
19 regulated by the CPUC. The negative consequences of these  
20 new, swift, and costly regulations, without sufficient  
21 funding for the transition to new vessels equipped with  
22 Tier 4 engines, will negatively impact transportation,  
23 safety efficiency, reliability --

24           BOARD CLERK ESTABROOK: Thank you.

25           JIM LUTTJOHANN: -- and affordability.



1           BOARD CLERK ESTABROOK: Thank you. That  
2 concludes your time.

3           JIM LUTTJOHANN: Thank you.

4           BOARD CLERK ESTABROOK: Next will be Max Cohen.  
5 You may unmute and begin.

6           MAX COHEN: Hi. My name is Max Cohen. I'm a Cal  
7 Maritime grad and I'm a Policy Analyst here at Curtin  
8 Maritime. Curtin Maritime is a tug and barge operator  
9 located in Long Beach, California. We operate primarily  
10 in the marine construction sector and will be bringing  
11 online the largest clamshell dredge on the west coast,  
12 which is also a Tier 4 hybrid.

13           I would first like to thank CARB Board members  
14 for engaging with us, specifically Vice Chair Sandra Berg.  
15 I would also like to personally thank CARB staff Nick  
16 Taylor for answering my nuanced questions regarding this  
17 rule.

18           I would like to use my time to put on record some  
19 of the concerns we have discussed and would like to work  
20 with staff on the Board to continue to address.

21           First, we are concerned that the commercial  
22 harbor craft compliance dates paired with the Carl Moyer  
23 Program funding surplus regs requirements will not allow  
24 vessel operators to get even half the lifetime out of  
25 their engines, if they want to take advantage of these

1 funds. All 2009 engines and prior will already be  
2 disqualified from Carl Moyer Program due to its surplus  
3 requirements. The 2012 engines will not even be allowed  
4 to get the half of their useful life, if they are to be  
5 eligible for Carl Moyer Program funds.

6 We are also concerned that South Coast AQMD is  
7 not allocating Moyer funds for marine projects this year.  
8 This is one of the most impacted air districts per CARB's  
9 own assertion. This decision not to fund marine projects  
10 this year is congruent with the implementation of the  
11 Commercial Harbor Craft regs. We are concerned that this  
12 is an unfunded mandate. The lack of concrete language in  
13 the Moyer Program makes it difficult for commercial harbor  
14 craft operators historically to apply for funding to go  
15 zero emissions or to upgrade to cleaner diesel technology  
16 as required by these regulations.

17 Next, we have concerns regarding safety and  
18 stability. We want CARB to continue to be open and  
19 transparent with the U.S. Coast Guard and an accreditation  
20 body like American Bureau of Shipping to address the  
21 following:

22 First, fire hazards due to increased temperature  
23 from the aftertreatment systems required by the Commercial  
24 Harbor Craft Rule.

25 Second, consider the vertical stability issues

1 for towing vessels as raised by the very CMA study which  
2 is being used to justify these regulations.

3 The CMA study states that the --

4 BOARD CLERK ESTABROOK: Thank you.

5 MAX COHEN: -- towing vessels out of Code of Regu  
6 -- federal regulation for subchapter (m) vessels.

7 BOARD CLERK ESTABROOK: Thank you. That  
8 concludes your time.

9 MAX COHEN: Thank you.

10 BOARD CLERK ESTABROOK: Next will be Will  
11 Roberts. You may unmute and begin.

12 WILL ROBERTS: Good morning. Thank you for the  
13 opportunity to testify on the draft Harbor Craft Rule. My  
14 name is Will Roberts and I am the President of Foss  
15 Maritime Company. I also serve on the board of the  
16 American Waterways Operators as the Chair of the Pacific  
17 Region. In California, we work out of both the Bay Area  
18 and LA/Long Beach with over 12 vessels and over 160  
19 employees.

20 For the last three years, we have met with the  
21 CARB staff on the proposed rules. You may be surprised  
22 that none of our industry's recommendations are reflected  
23 in this draft. While I'd like to be able to cover all of  
24 my concerns, I'll instead point to the American Waterways  
25 Operators comments, which I support and will highlight

1 what I believe is the biggest issue with this rule. Our  
2 industry has a proven track record of adopting the  
3 cleanest technology when feasible. My company, Foss  
4 Maritime, introduced the first two hybrid tugboats to  
5 California in 2009 and '11 and has carbon canister  
6 filtration systems installed on our bunker barge fleet to  
7 reduce carbon emissions during load operations, both well  
8 ahead had of the regulatory requirements to do so.

9 Over the last three years, Foss has spent over  
10 \$16 million equipping and operating four new Tier 4  
11 tugboats for California. All of these tugboats will now  
12 need to be retrofitted. The engineering and upgrades will  
13 cost millions of dollars for what are considered some of  
14 the most environmentally leading tugboats in the world.  
15 We have also upgraded multiple other vessel within our  
16 fleet and those will need to be retrofitted as well.

17 A single retrofit could cost close to \$4 million  
18 and a new harbor tug costs close to \$20 million. These  
19 are significant investments, which will devastate  
20 companies like mine, as we have recently spent so much to  
21 retrofit.

22 My ask is will you create an exemption for  
23 vessels currently with Tier 3 and above engines and allow  
24 them to operate for their full useful life, with a  
25 requirement that they'll be replaced after they're

1 retrofitted?

2           Please pass this current rule with these critical  
3 modifications as to not destroy or already weakened supply  
4 chain in California.

5           Thank you for your time.

6           BOARD CLERK ESTABROOK: Thank you.

7           Next will be Elliot Gonzales. After Elliot will  
8 be Leah Harnish, Lynn Muench, and Rick Luliucci.

9           Elliot, you may go ahead and begin.

10           ELLIOT GONZALES: Good after -- good afternoon,  
11 good day. I did just want to just make a really belief  
12 comment about -- in support of the Harbor Craft Rule. I'm  
13 here today as a member of the Sierra Club My Generation  
14 staff. We signed on to a joint letter of some of our  
15 coalition partners led by Earthjustice. And what we  
16 included in our letter is, you know, basically we just  
17 reiterated the fact that we want to reduce cancer risk.  
18 Here, where I live in about -- about a mile from the Port  
19 of Long Beach, we have high risk of cancer. We are in  
20 severe non-attainment. It's very common for people to  
21 have respiratory ailments, whether they're in adulthood,  
22 whether they're children, any stage of their life. And we  
23 just take cancer, and asthma, and pollution very  
24 seriously.

25           And so we're asking CARB to do the same. We

1 thank you for including constituents that may not be  
2 front-line communities, but we ask that you prioritize  
3 those who are actually suffering from severe ailments like  
4 cancer when you make this decision. So we are here to  
5 encourage this Board to do the right thing and to require  
6 a 100 percent zero-emission at a certain further point  
7 next time you reevaluate a harbor craft. And that we just  
8 want to remind you that a harbor craft is critical to  
9 addressing our -- our climate goals. So thank you for  
10 hearing us out and we do ask that you support this item  
11 today. Thank you.

12 BOARD CLERK ESTABROOK: Thank you.

13 Leah Harnish, you may unmute and begin.

14 LEAH HARNISH: Can you guys hear me?

15 BOARD CLERK ESTABROOK: Yes, we can.

16 LEAH HARNISH: Great. Thank you.

17 Good morning. My name is Leah Harnish and I'm  
18 the Government Affairs Associate at the American Waterways  
19 Operators, or AWO, as you've heard, and I am our  
20 specialist in clean air and water policy. Thank you for  
21 the opportunity to testify.

22 AWO represents the largest portion of the  
23 tugboat, towboat, and barge industry in the country with  
24 over 300 members. Over the last three years, AWO and our  
25 members have met with CARB staff and Board to discuss the

1 Commercial Harbor Craft Rule.

2           During these meetings, we've expressed our  
3 concerns about the rule and our desire to help CARB  
4 improve air quality, and reach our shared zero-emissions  
5 goal.

6           AWO has submitted comments to the document, but  
7 I'd like to highlight our concern about the data that was  
8 used to craft this policy. When AWO first started meeting  
9 with CARB -- CARB staff, we notified them that the data  
10 they were relying on was not an accurate representation of  
11 the number of vessels operating in California. Staff uses  
12 a U.S. Coast Guard database that reports vessel ownership  
13 and regulatory status. However, where a vessel is  
14 registered does not necessarily equate to where they  
15 operate.

16           AWO commissioned an independent vessel inventory  
17 using the automatic identification system, or AIS. AIS  
18 tracks the movement of vessels and this report found that  
19 over 200 towing vessels operated within 100 nautical miles  
20 of the California coast. Nearly -- or only 200, nearly 30  
21 fewer than CARB had estimated.

22           Policies must be built on accurate information.  
23 And while staff has told us that they are regularly  
24 updating, their model, the proposed rule does not reflect  
25 this. We ask that this rule not be approved, but instead

1 reviewed and updated with health benefits and cost  
2 effectiveness to better reflect the numbers and impact  
3 that vessels have that operate in California regulated  
4 waters. Thank you for your time

5 BOARD CLERK ESTABROOK: Thank you.

6 Lynn Muench, you may unmute and begin.

7 LYNN MUENCH: Good morning, Madam Chair and CARB  
8 Board members. My name is Lynn Muench. I'm the Senior  
9 Vice President of The American Waterways Operators, the  
10 national trade association for the tugboat, towboat, and  
11 barge industry.

12 I'm pleased to report that we share CARB's and  
13 Governor Newsom's goal of zero emissions. The towing  
14 industry has embraced continual improvement over our  
15 76-year history, especially when it relates to safety and  
16 the environment. As an industry, we want what's best for  
17 California and the nation's environment and its economy.

18 Unfortunately, this draft rule is not something  
19 AWO can support. We ask you to take the unusual step in  
20 voting no on it, pressing pause, and incorporating our  
21 industry's input to improve this rule and make it  
22 practical, possible, and safe for mariners.

23 The amendment before you have been written  
24 without meaningful collaboration with the towing industry.  
25 As Leah had mentioned, the vessel counts are wrong and the



1 total emissions are also wrong. When we tried to review  
2 the work and provide input to the staff, no substantive  
3 changes were made and the databases that we were given to  
4 evaluate were mislabeled.

5           As I said on the outset, the towing industry  
6 embraces the same goal as the board, zero emissions. Our  
7 industry is ready to go to zero emissions as soon as  
8 possible, so we respectfully request that CARB vote no on  
9 this, and add an exemption to the rule that allows vessels  
10 currently with Tier 3 engines or above to operate for the  
11 rest of their useful life with the stipulation that they  
12 will be retired or become a zero-emission vessel once the  
13 engine's life is up. In fact, we ask also for  
14 consideration that has been given to other harbor craft in  
15 this today.

16           We stand ready to work with CARB. And thank you  
17 on behalf of the towing industry, the industry that moves  
18 goods to California residents with the least amount of air  
19 emissions per ton.

20           Thank you.

21           BOARD CLERK ESTABROOK: Thank you.

22           Next will be Rick Luliucci. Rick, you may unmute  
23 and begin.

24           RICK LULIUCCI: Good morning. This is Rick  
25 Luliucci with The Vane Brothers Company.

1           The tug, towboat, and barge industry is committed  
2 to reaching zero emissions in the safest and most  
3 efficient manner. However, the timeline proposed under  
4 the new Harbor Craft Rule gives companies less than four  
5 years to repower all of our vessels, and less than six  
6 years to modify Tier 4 engines with diesel particulate  
7 filters, which has not been invented for marine use.

8           This framework is neither financially feasible,  
9 operationally achievable, nor responsible, as it  
10 jeopardizes the safety of mariners and the viability of  
11 businesses. Companies will rush the critical components  
12 and not take the time necessary to ensure the retrofits  
13 are completed and in a safe responsible manner.

14           While there is a one-year scheduling extension in  
15 the proposed rule, the reality is this process goes  
16 through multiple steps, including the United States Coast  
17 Guard, which necessitates a much longer window. For the  
18 sake and safety of our mariners and the sustainability of  
19 this industry, we urge you to vote to amend the rule to  
20 ensure that a safe timeline exists for mariners. Please  
21 amend the deadline for complying with the diesel  
22 particulate filter installation to no sooner than six  
23 years from the date of the full approval of the United  
24 States Coast Guard, the American Bureau of Shipping and  
25 the engine manufacturers.

1 I'd like to touch upon an unfunded mandate of  
2 DPFs within this Harbor Craft Rule. Without the  
3 availability of manufacturer-approved diesel particulate  
4 filters, CARB is requiring the adoption of untested,  
5 unproven, and unavailable technology. How does CARB see  
6 moving forward with Tier 4 engines when DPFs are not  
7 feasible on current vessels. They make the leap because  
8 they do not understand the industry, the importance of  
9 mariner safety in their desire to make a farce of this  
10 public process.

11 This technology currently does not exist, cannot  
12 fit in vessels, and it's a known safety hazard in other  
13 modes of transportation. As a solution, please do not  
14 move forward with this bad public policy. In its place,  
15 amend the deadline for complying with DPF installation to  
16 no sooner than six years from the date of approval by  
17 Coast Guard, American Bureau of Shipping, and the engine  
18 manufacturers.

19 BOARD CLERK ESTABROOK: Thank you.

20 Next will be Graham Balch. And then Michael  
21 Breslin, and Max Rosenberg.

22 Graham, you may unmute and begin.

23 GRAHAM BALCH: Hi. My name is Graham Balch with  
24 Green Yachts.

25 CARB Board members and especially Davina Hurt,

1 who represents the San Francisco Bay Area, I am speaking  
2 about ensuring that short-run ferries are zero-emission  
3 without exceptions, an issue we were unaware of before the  
4 November 19th Board meeting and thus unable to comment on  
5 until now.

6 I've spoken to CARB staff and they have said that  
7 the direction for addressing this issue must come from you  
8 the Board members to be changed. We are proud that  
9 California's the first state in the nation to require some  
10 vessels to be zero-emission through these proposed CHC  
11 regulations.

12 However, as written, the short-run ferry  
13 definition in these regulations allows diesel boats to  
14 game the regulations by adding legs or adding one long  
15 leg, and by doing so operate a diesel boat on a short-run  
16 route for which vessels are required to be zero-emission.  
17 This loophole will cause over 2,000 tons of increased CO2  
18 emissions in the San Francisco Bay every year.

19 Board members, please direct CARB staff to  
20 include language in the 15-day change that close the  
21 loophole in the short-run ferry definition that currently  
22 allows diesel boats to operate diesel boats -- sorry -- on  
23 zero-emission short-run ferry routes. We have submitted a  
24 detailed written comment, but the direction has to come  
25 from you.

1 Thank you.

2 BOARD CLERK ESTABROOK: Thank you.

3 Next will be Michael Breslin. Mike, you can  
4 unmute and begin.

5 MICHAEL BRESLIN: Thank you, Chair Randolph and  
6 Board members. My name is Michael Breslin. I'm the  
7 Director of Safety for the American Waterways Operators.  
8 I am the safety expert for the tugboat, towboat, and barge  
9 industry. My testimony is about diesel particulate  
10 filters or DPFs. A simple Google search for DPFs for  
11 California will return a record of the dangerous history  
12 and ongoing issues with these devices. This mandate, if  
13 passed unchanged, will require vessel owners to install  
14 these unsafe devices, increasing the chance of a fire  
15 aboard their boats.

16 Before you require -- (clears throat) -- Excuse  
17 me. Before you require DPFs, I would ask that you better  
18 understand these devices, which frankly do not exist in a  
19 way that they could be safely installed in the proposed  
20 marine applications. DPFs do not reflect best available  
21 technology to support the advancement of clean technology.  
22 Rather, it will cause an untenable burden on mariners and  
23 possibly increase the carbon footprint of California by 14  
24 boat owners to build new vessels or complete major  
25 overhauls of their current vessels. This rule does not

1 meet its goal to reduce carbon output.

2 I would like you to know there is not the space  
3 needed for these devices on existing vessels. There's no  
4 room to install the large filters. And if somehow you  
5 could build the space, it would impact that stability of  
6 the vessel as established by Cal Maritime study, which  
7 raised this concern.

8 Again, even if we could build in room for the  
9 DPFs and we somehow made the vessel stable and had it  
10 certified by a marine engineer, the pressure created by  
11 the DPF would damage the engines, and the heat generated  
12 by the DPFs may make the vessels unsafe to operate. DPFs,  
13 even once approved, will not be ready use and will require  
14 extensive engineering studies to determine if and how they  
15 can be safely integrated into existing vessels.

16 It is unreasonable to require the implementation  
17 of unproven and untested technology. As I indicated a  
18 moment ago before any work is started to figure out how to  
19 install DPFs and engineering study must determine its safe  
20 installation of the specific make and model of the engine.  
21 This is a cost that must be absorbed by our maritime  
22 operators adding to the financial burden your rule is  
23 imposing without consideration to the economic devastation  
24 it will bring to America's supply chain by forcing  
25 operators out of business, reducing capacity --

1           BOARD CLERK ESTABROOK: Thank you. That  
2 concludes your time.

3           MICHAEL BRESLIN: -- without (inaudible).  
4 Thank you.

5           BOARD CLERK ESTABROOK: Next will be Max  
6 Rosenberg. After Max will be Rebecca Baskins, Misagh  
7 Tabrizi, and Frank Ursitti.

8           Max, you may unmute and begin.

9           MAX ROSENBERG: Hello. My name is Max Rosenberg,  
10 a Bay Area native and engineering manager with Vane  
11 Brothers. I thank you for the opportunity to comment  
12 today.

13           The rule before you for a vote today is very  
14 disappointing. It avoids opportunities for meaningful  
15 incentive-based development of real emissions-reducing  
16 technologies. Instead, it promotes de minimis emissions  
17 reductions at huge costs that put California commerce,  
18 jobs, and mariner safety at risk. This regulation is not  
19 a bridge to zero-emissions. It is an off-ramp that we  
20 take at great cost. The regulation requires equipment  
21 that is unsafe, unproven, and frankly unavailable. CARB  
22 expects major vessel refits in a completely unrealistic  
23 timeline with very little account for lack of feasibility.

24           Tug and barge movement generates less than half  
25 the emissions of alternative modes, such as road or rail.

1 However, this rulemaking is predicated on the false  
2 inference that commercial harbor craft are a leading  
3 emissions contributor.

4           The inclusion of ocean-going articulated tug  
5 barges in the harbor craft regulation ignores a prior  
6 Board resolution to work with the industry in considering  
7 their unique nature. This vessels perform most of their  
8 work offshore competing with other vessels that are not  
9 covered by the CHC regs.

10           We ask for a regulation that sets rational goals  
11 for harbor craft to effect meaningful emissions  
12 reductions, modify compliance deadlines for in-use Tier 3  
13 or better engines, so that operators can realize a  
14 reasonable portion of useful life, and allow adequate time  
15 for engineering safety reviews and project timelines.

16           Postpone the requirement for diesel particulate  
17 filters until a vessel's major -- next major shipyard  
18 period after the equipment has been certified is safe.  
19 Require the articulated tug barges to meet ocean-going  
20 vessel At Berth Regulations instead of regulations for  
21 harbor craft, which they are not. Provide an alternative  
22 compliance pathway to promote the development of  
23 zero-emissions technologies by allowing owners of vessels  
24 with Tier 3 or better engines to run them for the full  
25 usable life for operators that commit to replacing or



1 refitting vessels --

2 BOARD CLERK ESTABROOK: Thank you. That  
3 concludes your time. Rows

4 MAX ROSENBERG: -- with the best available  
5 zero-emissions technology at the end of that period.

6 BOARD CLERK ESTABROOK: Our next speaker is  
7 Rebecca Baskins. Rebecca, you may unmute and begin.

8 REBECCA BASKINS: Good morning, Chair and Board  
9 members. Rebecca Baskins on behalf of the California  
10 Advanced Biofuels Alliance. We are the state's trade  
11 association for renewable diesel and biodiesel.

12 First, I would like to thank the staff for the  
13 inclusion of renewable fuels in these amendments to the  
14 Harbor Craft Regulation, but we would like to see the  
15 inclusion of other renewable fuels, like biodiesel and  
16 renewable diesel blends.

17 Blending renewable diesel and biodiesel together  
18 maximizes the environmental and economic profiles of both  
19 fuels. For example, a blend of renewable diesel at 80  
20 percent and biodiesel at 20 percent is similar in NOx  
21 reductions, but reduces more particulate matter than R99.  
22 Blends can also help alleviate cost and supply concerns.

23 I also want to note that the proposed Appendix E  
24 regarding biodiesel reflects outdated and false data on  
25 biodiesel. Thus, we believe it should be removed or

1 updated to reflect the current data in the 15-day change.

2           Again, we thank you for your hard work on this,  
3 but we believe the State is missing out on important  
4 emission reductions by the exclusion of biodiesel in this  
5 regulation.

6           Thank you.

7           BOARD CLERK ESTABROOK: Thank you.

8           Next is Misagh Tabrizi. You may unmute and  
9 begin.

10           MISAGH TABRIZI: Thank you. My name is Misagh  
11 Tabrizi, representing Nett Technology, a Canadian  
12 manufacturer of mature emission technologies, such as DPFs  
13 and SCRs. The Board might be interested in hearing about  
14 our recent successful CHC retrofit demonstration project  
15 and how we worked with the U.S. Coast Guard on the design  
16 and safety approval processes.

17           Currently, we are pursuing CARB verification for  
18 this mature retrofit technology for CHC market aiming to  
19 meet the proposed and future emission reductions of oxides  
20 of nitrogen and diesel particular matter.

21           In short, our coordinated efforts with Coast  
22 Guard resulted in our retrofit technology to meet  
23 applicable codes on construction material both in terms of  
24 the thickness and choice of material meeting applicable  
25 electrical wiring codes, and meeting the skin surface

1 temperature requirement; additionally, the design products  
2 with net weight increases of less than five percent; a  
3 modular compact design with adequate thermo management,  
4 available for all CHC applications ranging from low to  
5 high duty cycles; comparable back pressure on engines  
6 pre-, post-retrofit; and a fully automated system with the  
7 least amount of operator engagement.

8 Separately in terms of the market readiness, I'm  
9 happy to report that Nett Technologies has internal plans  
10 for direct sales to end-users and fleets, to distribution  
11 channels, and licensed in the technology to be able to  
12 reduce the time it takes to provide this mature technology  
13 to California, after granting the CARB verification.  
14 Thank you.

15 BOARD CLERK ESTABROOK: Thank you.

16 Next will be Frank Ursitti. After Frank will be  
17 Andrea Lueker, Catherine Garoupa White, and then Bill  
18 Magavern.

19 Frank, you may unmute and begin.

20 FRANK URSITTI: Good morning. Thank you, Chair  
21 Randolph and members of the Board. My name is Frank  
22 Ursitti, owner of H&M Landing, California's largest  
23 sportfishing terminal. I also serve on the Board of  
24 Directors for the Sportfishing Association of California,  
25 and have been directly involved in this process throughout

1 its evolution.

2           On behalf of myself and others in our fleet, we  
3 are in support of the CPFV extension path presented in the  
4 resolution before you. This has been a long and difficult  
5 process for our vessel owners. Their life's work and  
6 legacies are on the table. Also, on the regulatory menu  
7 is the future of affordable ocean access for all who  
8 endeavor to venture forth upon the sea.

9           Both concerns have been addressed today by what's  
10 been presented. I feel the effort is now positive,  
11 constructive, and most important emission reductions are  
12 achievable. There is an absolute willingness by our fleet  
13 to collaborate with CARB and strive for continued  
14 reductive measures in the future. The past 24 years of  
15 emissions reductions using clean air attainment grants is  
16 proof of the CPFV fleet's resolve.

17           I want to recognize Mr. Richard Corey, and Edie  
18 Chang, and the CARB staff who took the time to engage  
19 stakeholders here in San Diego. The information exchange  
20 was sincere and brought everyone together towards a shared  
21 and common goal.

22           I also want to acknowledge former Board Member  
23 Nathan Fletcher. His willingness to support our sector  
24 helped facilitate dialogue for an equitable resolution.

25           I ask that you approve the amendments as

1 proposed. Thank you.

2 BOARD CLERK ESTABROOK: Thank you.

3 Andrea Lueker, you may unmute and begin.

4 ANDREA LUEKER: Good morning. Are you able to  
5 hear me?

6 BOARD CLERK ESTABROOK: Yes, we are.

7 ANDREA LUEKER: Perfect. My name is Andrea  
8 Lueker. I am the President of the California Association  
9 of Harbor Masters and Port Captains. Our Association has  
10 been around for 74 years and our membership includes over  
11 70 harbors, ports, and marinas in California, as well as a  
12 number of marine-related businesses.

13 While we acknowledge that there is still work to  
14 do, we're relieved that the originally proposed  
15 regulations have been amended to be more feasible and  
16 relative. Thank you in advance for your vote on this.

17 One important point I want to leave with you  
18 today is just a comment on the process. What we've all  
19 gone through on the Harbor Craft Regulations for the past  
20 many months has been difficult and debilitating for many  
21 of those who were rightfully so fearful of losing their  
22 businesses. We've all heard those gut-wrenching  
23 testimonies. And for those of us in the trenches, we've  
24 spoken to business owners in person who were basically  
25 ready to throw in the towel prematurely.

1           On a positive note, we're glad where we are today  
2 on this issue. We do thank you for your efforts on  
3 this -- on this issue. We look forward to your vote on  
4 the resolution, working with you in the future, and have a  
5 good rest of your meeting.

6           Thank you.

7           BOARD CLERK ESTABROOK: Thank you.

8           Next will be Catherine Garoupa White. Catherine,  
9 you may unmute and begin.

10           DR. CATHERINE GAROUPA WHITE: Good morning. This  
11 is Catherine Garoupa White with the Central Valley Air  
12 Quality Coalition. CVAQ, with partners, submitted a  
13 letter supporting expeditious adoption and enforcement of  
14 this rule to provide necessary relief to already  
15 overburdened communities like the Port of Stockton and  
16 surrounding areas.

17           I'm going to share comments from CVAQ's Stockton  
18 based environmental justice intern who couldn't be here  
19 today due to class, Nahui Gonzalez Millan.

20           "According to the Centers for Disease  
21 Control, 1 in 12 children in the U.S. have  
22 asthma, but in the San Joaquin Valley where I  
23 live, research shows that 1 in 4 children have  
24 asthma. The high levels of fine particles in the  
25 valley contributes to poor air quality and higher

1 rates of asthma.

2 "I work as a pre-school teacher assistant in  
3 Stockton. There are 16 children in my classroom  
4 and four have asthma. These children have so  
5 much energy for learning and school. They love  
6 to dance and blow bubbles when they're outside.  
7 They play chase during their outdoor play and  
8 love to be with their friends. In one moment,  
9 all of that changes. Activity becomes too much  
10 for their bodies, their faces drop, and their  
11 breathing becomes desperate. They have to slow  
12 down and stop.

13 "The children in my classroom have done  
14 nothing except breathe the air around them and  
15 that has caused a condition they will have to  
16 manage for as long as they live. In Stockton  
17 Unified, approximately 30 percent of children  
18 live in poverty. Their families live in areas  
19 that are close the pollutants, such as railroads,  
20 industrial areas, and the port.

21 "Our government institutions must protect the  
22 children and families in our city from factors  
23 that damage their health and quality of life. As  
24 a concerned Stockton community member who is also  
25 impacted by pollution from ships and other

1 sources, I urge CARB to adopt a strengthened  
2 Commercial Harbor Craft Rule to hold commercial  
3 harbor crafts accountable for the pollutants that  
4 they bring to the area, and to expedite the  
5 transition to zero emissions for all commercial  
6 harbor crafts to ensure the air quality of the  
7 area and the health of residents in Stockton.

8 Thank you".

9 BOARD CLERK ESTABROOK: Thank you.

10 Next will be Bill Magavern. After Bill will be  
11 Mariela Ruacho, and Floyd Vergara, and Teresa Bui.

12 Bill, you may unmute and begin.

13 BILL MAGAVERN: Good morning. Bill Magavern with  
14 the Coalition for Clean Air in support of the resolution  
15 in front of you today. At the November Board hearing, I  
16 asked that you adopt these amendments to the rule early in  
17 2022 with no weakening and you're now poised to do exactly  
18 that.

19 We appreciate that the staff have run a process  
20 that gave every opportunity for public participation and  
21 was very inclusive and certainly lengthy. This rule will  
22 save over 500 lives and hundreds of hospitalization, and  
23 reduce both toxic particulate matter and also regional  
24 smog.

25 It puts the cleanest engines into place that are



1 available today to replace dirty old diesel engines and  
2 also requires the use of renewable diesel to lower  
3 emissions further. It also includes added protection for  
4 disadvantaged communities that are bearing the worst  
5 burdens of air pollution.

6           So we support the change that's proposed here for  
7 the sportfishing fleets, because it will reduce emissions  
8 sooner and greater overall, and then allow that  
9 flexibility that we hope will result ultimately in those  
10 vessels going to zero emission.

11           Thank you very much.

12           BOARD CLERK ESTABROOK: Thank you.

13           Mariela Ruacho, you can unmute and begin.

14           MARIELA RUACHO: Hi. I'm Mariela Ruacho with  
15 American Lung Association. Thank you, Chair, for the  
16 opportunity to comment here today. We see this rule as a  
17 critical public health measure and an important  
18 opportunity to address health inequities. We urge its  
19 adoption today. Health and medical organizations like the  
20 American Lung Association, the American Cancer Society,  
21 the California Medical Association, the Long Beach  
22 Alliance for Children with Asthma and others have  
23 previously weighed in in -- to support the Commercial  
24 Harbor Craft Rule.

25           To shift to -- the shift to cleaner and

1 zero-emission engines from the commercial craft sector  
2 will cut smog and particle-forming NOx and most  
3 importantly reduce cancer risk to portside communities,  
4 which is not included in the monetization of health  
5 benefits.

6 In addition, the rule will provide the following  
7 avoided health outcomes as highlighted by staff, which is  
8 the 531 premature deaths, 161 hospital emissions, 236  
9 emergency room visits, and an estimated \$5.25 billion in  
10 health benefits between 2003 and -- '23 and 2038.

11 We want to thank the staff's diligent work  
12 to con -- to continue the conversation with stakeholders  
13 and find innovative pathways to ensure a strong rule,  
14 delivers near-term and lasting health benefits. We  
15 support the proposed amendments and ask the Board to  
16 approve the rule -- to finalize the rule today.

17 Thank you.

18 BOARD CLERK ESTABROOK: Thank you.

19 Floyd Vergara, you can unmute and begin.

20 FLOYD VERGARA: Great. Can you hear me?

21 BOARD CLERK ESTABROOK: Yes, we can.

22 FLOYD VERGARA: Great. Thank you. Good morning,  
23 Chair Randolph, Board members and CARB staff. Thank you  
24 for the opportunity to speak today. I'm Floyd Vergara  
25 with Clean Fuels Alliance America, the U.S. trade

1 association representing the entire supply chain for  
2 biodiesel, renewable diesel, and to a growing extent  
3 sustainable aviation fuel. My comments will reinforce the  
4 comments you heard earlier from Rebecca Baskins with the  
5 California Advanced Biofuels Alliance.

6 We believe the proposal requiring the use of 99  
7 percent renewable diesel blends, or R99, is an important  
8 step in the right direction, and we appreciate the staff's  
9 willingness to discuss ways in which the proposal can be  
10 improved. Unfortunately, the proposal remains  
11 unnecessarily restrictive, in that it only allows R99  
12 exclusively.

13 As laid out in our written comments, we believe  
14 the optimal solution would be to allow the use of other  
15 blends, such as 80 percent renewable diesel and 20 percent  
16 biodiesel blends or R80/B20 in addition to R99. Both fuel  
17 -- both fuel blends reduce GHGs and NOx by significant  
18 degrees, and both fuels reduce particulates substantially,  
19 R80/B20 by about 29 percent and R99 in the proposal by  
20 about 27 percent, according to CARB data.

21 It's that additional benefit of reducing diesel  
22 PM with R80/B20 that I want to highlight for the Board,  
23 since any additional reductions in diesel PM will greatly  
24 benefit environmental justice communities, many of which  
25 are located near the ports.

1 I also note that many of the very lowest carbon  
2 pathways for liquid biofuels are made in this state by  
3 California biodiesel producers, including New Leaf Biofuel  
4 in San Diego, Crimson Renewable Energy in Bakersfield, and  
5 Imperial Western Products in Coachella. In-state  
6 biodiesel producers employ many Californians and support  
7 million of dollars in economic activity. Excluding  
8 biodiesel from this proposal would prevent these  
9 California producers from being able to bring their lowest  
10 polluting fuels for use in harbor craft to benefit all  
11 Californians.

12 There's a number of factual errors we address in  
13 our written comments. We urge you to direct staff to  
14 provide a minor 15-day change to allow the use of R80/B20  
15 and other biodiesel blends --

16 BOARD CLERK ESTABROOK: Thank you. That  
17 concludes your time.

18 Next will be Teresa Bui. After Teresa will be a  
19 phone number ending in 977, Matt Holmes, and then Jennifer  
20 Case.

21 Teresa, you may unmute and begin.

22 TERESA BUI: Good morning, Chair Randolph and  
23 Board member. This is Teresa Bui with Pacific  
24 Environment. We are pleased with the strong and  
25 meaningful direction of this rule and just want to

1 knowledge all the hard work done by staff to get to this  
2 the point.

3           We greatly appreciate all the stakeholder  
4 outreach that has been conducted. And while we had  
5 ultimately hoped for a hundred percent zero-emission  
6 mandate for all vessel segments out of this ruling, given  
7 the urgency of ending toxic fossil fuel pollution in  
8 California and moving all transportation sources off  
9 fossil fuel, we feel the final rule is still a meaningful  
10 step forward to end ship pollution and are in support.

11           This is the first-in-the-nation standard on  
12 commercial harbor craft and want to thank CARB for your  
13 leadership on this rule to set zero-emission standards for  
14 short-run ferries and excursion vessels. Harbor craft is  
15 one of the top three sources of cancer risk around the  
16 ports of LA, Long Beach, and Oakland and they're work is  
17 not over yet. We need to get all the other vessel  
18 categories to zero emission as well.

19           We especially need zero-emission vessels in the  
20 areas that are in non-attainment with the Clean Air Act.  
21 And we are excited to see the frequent technology review  
22 and the tech -- technical working group, as we're seeing  
23 rapid market maturation for electric boats, ferries, and  
24 vessels in South Korea, China, Singapore, and the EU and  
25 beyond. We look forward to working with you all to

1 rapidly transition the rest of the vessel segments to zero  
2 emission. And than you again.

3 BOARD CLERK ESTABROOK: Thank you.

4 Next is a phone number ending in 977. Please  
5 state your name for the record and then I will let you  
6 know when you have 30 seconds remaining and when your time  
7 is up.

8 And you will need to press star six to unmute.

9 TOM BABINEAU: Thank you. I want to thank staff  
10 and Board members for this opportunity to provide support  
11 for this regulation. My name is Tom Babineau. I  
12 represent Rypos and active DPF manufacturer. Since 1996,  
13 Rypos has produced tens of thousands of active DPFs that  
14 have operated for more than 50 million hours to date  
15 without a safety incident.

16 Like many of the previous regulatory efforts,  
17 regulations and technologies are necessarily advancing in  
18 parallel, so there's a natural tendency for us all to ask  
19 are these technologies ready? Have they been tested?  
20 Will they work?

21 I've attended all the public workshops and this  
22 is a constant theme. Given that DFP's effectiveness to  
23 reduce PM is proven, I'd like to spend my time today on  
24 readiness and durability, which by extension, speaks to  
25 safety.

1           DPFs, if sized properly and used on compliant  
2 engines, have accommodated all forms of engine load cycles  
3 for years. They're successful in the ports and RTGs  
4 offloading container ships and are successful on TRUs that  
5 deliver food across the nation. They've been around for  
6 years. They've been tested over time and they're proven  
7 to uncover -- the ARB process of verification has been  
8 tested over time and has proven to uncover and weed out  
9 problems.

10           In order to find the uncharted problems, however,  
11 testing is not only required by ARB through the  
12 verification process, but we do our own of course. So we  
13 don't need the headaches that threaten our very existence.

14           So in 2006, Rypos retrofitted a U.S. Navy barge,  
15 which operated for over 19,000 total combined hours  
16 without incident. In 2014, the U.S. Office of Naval  
17 Research in partnership with UC Riverside --

18           BOARD CLERK ESTABROOK: Fifteen seconds.

19           TOM BABINEAU: -- independently tested these DPFs  
20 and found them to be operating as designed. Again, zero  
21 operational safety issues have occurred.

22           We presently have --

23           BOARD CLERK ESTABROOK: Thank you.

24           TOM BABINEAU: -- two DPFs --

25           BOARD CLERK ESTABROOK: That concludes your time.

1 If you could state your last name for the record again,  
2 that would be great.

3 TOM BABINEAU: Yeah. Thomas Babineau.

4 BOARD CLERK ESTABROOK: Thank you.

5 TOM BABINEAU: I will submit these in writing  
6 too. Thank you.

7 BOARD CLERK ESTABROOK: Okay. Sounds great.  
8 Thank you.

9 Next will be Matt Holmes. You may unmute and  
10 begin.

11 MATT HOLMES: Good morning, Chair Randolph and  
12 members of the Board. I'm Matt Holmes. I'm a portside  
13 resident of Stockton, California, and I am, of course, in  
14 strong support of passage of the strongest possible  
15 Commercial Harbor Craft Rule.

16 This is an easy one for me, because I'm in  
17 Stockton, where there aren't any leisure craft or fisher  
18 fleets to speak of. We just have industrial operations  
19 that are filling their bank accounts on the daily while  
20 foot dragging on upgrading their equipment to maximize  
21 profits, while we die more or less ten years earlier than  
22 everyone else on this call.

23 We're the state's industrial colony and we live  
24 in constant non-attainment with the Clean Air Act. This  
25 rule is one more measure California can put in place to



1 let the Feds know that at least CARB is doing its parts to  
2 address non-compliance, since we know we can't count on  
3 our regional air district to take the Clean Air Act  
4 seriously.

5           And I really sympathize with some of the smaller  
6 operators we've heard from today and I wish there was a  
7 more nuanced application of the rule that acknowledged  
8 this difference. I'll be the first person to sign a  
9 waiver for the guide taking disabled youth out on the  
10 water. Lumping him in with somebody dragging the ocean  
11 floor should give everybody on here pause. You know,  
12 maybe we could figure out how to do that based on annual  
13 operating costs. And while there should maybe be a public  
14 benefit assessment for compliance deadlines for some of  
15 these folks, no doubt for the rest of them I'd say if  
16 someone can't afford to run a safe boat, then maybe  
17 they're in the wrong line of business.

18           You know, I'd like to live in Lake Tahoe, but my  
19 capacity to do so remains challenged by the cost. Is  
20 there a CARB program that can make my unnecessary dreams  
21 come true? I don't think so.

22           For the concerns we've heard today, I'll just gut  
23 check the Board, that these pleas that we're hearing, you  
24 know, they aren't un resistance to your rule. It's about  
25 the stinging awareness that they've never really paid all

1 of their own bills. This self-reliance crowd seems to be  
2 addicted to externalizing their costs in the portside  
3 communities. It's high time welfare-addicted businesses  
4 in California learned how to pay their own bills and stop  
5 pretending to get their businesses to pencil out by  
6 burying their unaddressed pollution in our bodies. No one  
7 has a right to run a dirty business, while we all have  
8 equal protection under the law and a right to an entire  
9 first-world lifespan.

10 Please center in your minds the stats on cancer  
11 and other respiratory distress that your team has and  
12 while these operators pull out their pockets demanding  
13 subsidies.

14 I'll closeout by reminding you that you've never  
15 subsidized our hospital bills.

16 BOARD CLERK ESTABROOK: Thank you. That  
17 concludes your time.

18 Next will be Jennifer Case. After Jennifer will  
19 be Nilda Langston, Sylvia Bentancourt, and then a phone  
20 number ending in 990.

21 Jennifer, you can unmute and begin.

22 JENNIFER CASE: Good morning. Thank you, Chair  
23 Randolph and the Air Resources Board members. Our  
24 business New Leaf Biofuel in San Diego recycles used  
25 cooking oil from San Diego restaurants and converts it to

1 biodiesel fuel, an ultra low carbon fuel that achieves an  
2 80 percent reduction in carbon emissions compared to  
3 petroleum diesel.

4           We commend the Board for continuing to push for  
5 regulations to some day achieve a fully zero-emission  
6 fleet of vehicles both on-road and marine. However, we  
7 believe that CARB is missing a huge opportunity by not  
8 recommending biodiesel as an alternative to achieve  
9 improved air quality goals in this regulation.

10           As mentioned by a previous speak, the renewable  
11 diesel supply is already very strained and we're all  
12 experiencing extreme hardship right now with the rise in  
13 fuel prices. Biodiesel is readily available in San Diego  
14 and all up and down the coast of California and it's  
15 priced at a substantial discount to petroleum and  
16 renewable diesel.

17           Blending renewable diesel and biodiesel together  
18 maximizes the environmental and economic profiles of those  
19 fuels. For example a blend of RD and -- at 80 percent and  
20 bio at 20 percent is similar in NOx reductions, but  
21 reduces more particulate matter than R99. It is also the  
22 best available solution to address asthma and cancer  
23 concerns while the state waits for zero emission to be  
24 fully implemented. We urge CARB to reconsider the  
25 exclusion of biodiesel in this important regulation for

1 the benefit of the environment, the economy, and small  
2 businesses.

3 Thank you.

4 BOARD CLERK ESTABROOK: Thank you.

5 Nilda Langston, you may unmute and begin.

6 NILDA LANGSTON: Good morning, everyone. I am  
7 Nilda Langston. I operate a glass-bottom boat in Long  
8 Beach. And as the only Latina-owned company, I can tell  
9 you that the -- I support the green goals that we have for  
10 the State. And these are aggressive goals. But at the  
11 same time, I ask you to consider that with a aggressive  
12 goals comes the need for aggressive funding, and that's  
13 not available.

14 Even to get to Tier 3, with the new -- with the  
15 new guidelines today, my funding to move to Tier 3 reduced  
16 to 20 percent of the project. And to be able to amortize  
17 a loan in a short amount of time, I won't be able to even  
18 get the life of the engine out of that type of loan on  
19 funding.

20 And while we support -- we're just a small team,  
21 small operators, we a hundred percent support the goals of  
22 the State. And we want to do everything we can to produce  
23 clean emissions. But at the same time, I ask you to  
24 consider all the aspects that this includes. We're just  
25 coming out of a hard, hard couple of years, all of us

1 having to deal with COVID, having to deal with labor  
2 issues that has happened as a result of COVID, and the  
3 lack of -- or the generalization of the problem is where I  
4 ask staff -- which they've been great. They've been great  
5 on certain questions, and emails, and providing the  
6 extensions. That's a relief to hear about the extensions  
7 today, because I -- to tell you the truth, I didn't know  
8 what was going to happen to our little company here.

9           And so I just ask you to reconsider and maybe put  
10 a pause, because with -- like I say, with the aggressive  
11 goals requires aggressive funding that is not available  
12 for all of us.

13           Thank you.

14           BOARD CLERK ESTABROOK: Thank you.

15           Next will be Sylvia Betancourt. After Sylvia  
16 will be a phone number ending in -- oh, it looks like  
17 Sylvia just dropped off.

18           So a phone number ending -- Oh, Sylvia, I see  
19 your hand went back up. Okay. Sylvia Betancourt and then  
20 a phone number ending in 990, and William Smith.

21           Sylvia, you can go ahead and begin.

22           SYLVIA BETANCOURT: Good morning. Sorry. I  
23 dropped my hand in anticipation of getting my comment.

24           My name is Sylvia Betancourt. I work at the Long  
25 Beach Alliance for Children with Asthma. We're based at

1 Miller Children's and Women's Hospital of Long Beach and  
2 we're part of the Asthma Center of Excellence, which is  
3 one of two centers on the west coast. And we take on this  
4 particular illness as we know that there is a high asthma  
5 rate in our region and that we have the challenge of air  
6 pollution.

7 I want to also thank the California Air Resources  
8 Board and staff for all of your hard work on this  
9 particular ruling and on this -- on this issue. I'm  
10 calling in support. And I urge the Air Resources Board to  
11 pass the strongest possible Commercial Harbor Craft Rule  
12 today.

13 I want to highlight the work that we do is  
14 directly on the front lines working with children who have  
15 asthma. Our hospital serves 70 percent -- 70 percent of  
16 our patients are Medi-Cal patients. And the majority of  
17 our families that we serve are in the harbor region. And  
18 many of these children face diesel exposure daily. We  
19 know that diesel exposure has a huge impact on children's  
20 health. We know that this regulation would dramatically  
21 reduce diesel pollution in Southern California, and where  
22 harbor craft constitute one of the top resources of DPM in  
23 the region.

24 We know that medicine is a solution for illness,  
25 but medicine is a reaction. What we need is to address

1 the problem at the source. We need to have children in  
2 school, not in the hospital or the ER. We need their  
3 parents and their caregivers at work and not at home  
4 taking care of children, missing work, and putting  
5 themselves in more vulnerable position to having to miss  
6 work. So we ask that the Board take action to safeguard  
7 current and future generations in the harbor region.

8 Thank you for your time.

9 BOARD CLERK ESTABROOK: Thank you.

10 Next will be a phone number ending in 990.

11 Please state your name for the record before you begin.

12 And next after the phone number ending in 990 we will hear  
13 from William Smith, Tim French and Harry Simpson.

14 You should be able to press star six to unmute  
15 and then you can begin.

16 HARVEY EDER: Hello. Am I being heard?

17 BOARD CLERK ESTABROOK: Yes, you are.

18 HARVEY EDER: Okay. Good afternoon -- I mean,  
19 good morning. My name is Harvey Eder. I'm speaking for  
20 myself and for the Public Solar Power Coalition and  
21 like-minded folks and entities.

22 I'm not as up on the details of this as I should  
23 be. I heard a number that -- with this rule that 500  
24 deaths are going to be prevented. Okay. I don't know if  
25 that's 500 over -- per year or over 10 years, 50 a year.

1 Okay. But here's -- here's the things that -- that we've  
2 been working on and have brought to you all.

3 The history of the cost of premature deaths, in  
4 the '07 plan, it was 7 -- 3 -- 3.5 million for premature  
5 deaths. And in the '12, plan it was -- it was seven  
6 million for premature death. And in the '16 plan, based  
7 on '15, it was nine million for premature death, okay?

8 Now, with the Indirect Source Rule, they're using  
9 like Rule 10 to 12 million, all right? A thousand times a  
10 thousand is a million. A thousand times -- a million  
11 times a thousand is a billion. So that's \$10 billion per  
12 thousand deaths. The State says there's 7,500 that's for  
13 air pollution, 5,000 in the South Coast, okay?

14 The real numbers, okay -- Lancet in '18, we got  
15 this from Pedro Piqueras, a doctor for the South Coast  
16 specializing in health air pollution law. They said  
17 there's 1.1 to 1.5 million premature deaths in the United  
18 States per year.

19 A million times a million --

20 BOARD CLERK ESTABROOK: Twenty second remaining.

21 HARVEY EDER: -- is a trillion. Okay. That's  
22 from 10 to 15 trillion for the U.S. cost. Ten percent of  
23 that goes here. That's the whole economy of the State  
24 basically. That's a half to two-thirds of the economy  
25 just using those numbers without -- we got -- we got 85



1 percent in schools of kids that have asthma. They don't  
2 get paid when they don't go to school.

3 BOARD CLERK ESTABROOK: Thank you. That  
4 concludes your time.

5 HARVEY EDER: All this other -- these costs are  
6 real --

7 BOARD CLERK ESTABROOK: Thank you.

8 Next will be William Smith. You may unmute and  
9 begin.

10 WILLIAM SMITH: Good morning. Can you -- am I  
11 being heard?

12 BOARD CLERK ESTABROOK: Yes, you are.

13 WILLIAM SMITH: Okay. Good morning. My name is  
14 William Smith. I am the owner of the CPV vessel Riptide  
15 in have Half Moon Bay. And I have just, just finished  
16 repowering to a Tier 3 motor. And I support the SAC and  
17 the GGFA position on this. I want to be allowed to  
18 operate and maximize my use of this engine. My vessel was  
19 small and I am -- would be unable to put the converter in  
20 here. So my position is that I would like you to support  
21 the position of both the GGFA and the SAC coalition.

22 Thank you.

23 BOARD CLERK ESTABROOK: Thank you. Our next  
24 speaker will be Tim French. And then I'll just read off  
25 the list of the last speakers for this item. Tim French

1 and then Harry Simpson, Josh Gaylord, Scott Hedderich,  
2 Greg Hurner, and Ryan Mack.

3 Tim, you can unmute and begin.

4 TIM FRENCH: Good morning. Thank you. My name  
5 is Tim French and I'm speaking on behalf of the Truck and  
6 Engine Manufacturers Association. And EMA would like to  
7 reiterate five points.

8 First and foremost, while EMA fully supports the  
9 deployment of the most advanced propulsion systems that  
10 are commercially available, we still have a number of  
11 significant concerns regarding staff's proposal,  
12 especially given the very short lead time before the  
13 proposed amendments would take effect, which can occur as  
14 early as next year.

15 Second, manufacturers currently produce very  
16 clean SCR-equipped Tier 4 commercial marine engines in a  
17 broad range of power and displacement categories.  
18 However, the types of Tier 4 Plus engines that the amended  
19 regulations would mandate are not commercially available  
20 across the regulated power range nor are sufficient  
21 verified Level 3 DPF retrofits.

22 Third, instead of trying to compel the deployment  
23 of unavailable hybrid Tier 4 Plus systems, CARB should  
24 work to foster the accelerated installation of available  
25 Tier 4 systems. Those Tier 4 products could include

1 engine families certified at emission levels compliant  
2 with the Euro 5 stage -- excuse me, the Euro Stage 5  
3 standards. And significantly, Euro Stage 5 systems are  
4 equipped the DPFs.

5 Fourth, CARB should fully coordinate any final  
6 CHC amendments with the U.S. Coast Guard. Without that  
7 full coordination and without accounting for the new  
8 burdens on vessel owners to obtain additional Coast Guard  
9 approvals, this rulemaking will face many significant  
10 obstacles.

11 And fifth and finally, all aspects of the  
12 proposed amendments will require a preemption waiver from  
13 U.S. EPA before CARB attempts to enforce them. Given the  
14 demonstrated lead time and cost effectiveness concerns at  
15 issue, a preemption waiver should not be viewed as a  
16 foregone conclusion in this case.

17 Thank you for the opportunity to testify today.

18 BOARD CLERK ESTABROOK: Thank you.

19 Next is Harry Simpson. You may unmute and begin?

20 HARRY SIMPSON: Hi. My -- can you hear me?

21 BOARD CLERK ESTABROOK: Yes, we can.

22 HARRY SIMPSON: I'd like to thank Chair Randolph,  
23 and the members of the Board, and CARB staff for the  
24 opportunity to comment on the proposed Commercial Harbor  
25 Craft Regulations. My company, Crimson Renewable Energy,

1 is the largest producer of biodiesel in California.

2 For nearly a decade, we have produced  
3 consistently over 50 percent of the biodiesel produced in  
4 California, specifically we produce ultra low carbon  
5 biodiesel from -- produced from 50 -- sorry, produced from  
6 used cooking oil and other inedible waste an byproduct raw  
7 materials. We play a significant role in helping  
8 California and our customers decarbonize challenging  
9 transportation emission sectors, such as heavy-duty  
10 trucking, rail, agriculture and construction equipment.

11 Crimson and the biodiesel industry can play a  
12 similar role in the marine sector to decarbonize and  
13 reduce harmful particulate matter and hydrocarbon  
14 emissions associated with marine fuels. As members of the  
15 California Advanced Biofuels Alliance and the Clean Fuels  
16 Alliance of America, we wish to align ourselves with the  
17 comments they have submitted as well as comments submitted  
18 by the Renewable Energy Group.

19 In particular, the proposal unnecessarily limits  
20 biodiesel content in marine diesel fuels and prevents 100  
21 percent renewable alternative marine fuel blends such a  
22 the renewable diesel, 80 percent biodiesel, 20 percent  
23 blend from being used in the marketplace for marine fuels

24 For the communities hardest hit by negative help  
25 impacts associated with diesel fuel in California's ports

1 and harbors, this means those communities will be deprived  
2 of the reductions in harmful PM and hydrocarbon emissions  
3 that can be delivered by biodiesel fuel blends.

4           Additionally, we are disappointed by the tone  
5 taken towards biodiesel within Appendix E of the proposed  
6 amendments to the regulations, especially in light of the  
7 fact that Air Resources Board has approved biodiesel for  
8 in-state use in California for over a decade and we have  
9 seen (inaudible)--

10           BOARD CLERK ESTABROOK: Thank you. That  
11 concludes your time.

12           HARRY SIMPSON: -- four billion gallons of  
13 biodiesel in California.

14           BOARD CLERK ESTABROOK: Thank you. Next will be  
15 Josh Gaylord. You may unmute and begin.

16           JOSH GAYLORD: Good morning. I'm Josh Gaylord  
17 with Flagship Cruises here in San Diego. We operate a  
18 harbor tours, whale watching, and ferries on the bay  
19 serving as an affordable access point to our bay for the  
20 community.

21           As Californians are experiencing higher gas  
22 prices through the nation, we need to keep alternative and  
23 less polluting per capita transportation methods  
24 affordable.

25           The Governor has announced providing free public

1 transportation for three months to help commuter  
2 ferries -- or -- are an important component of the public  
3 transportation system and critical to reducing the  
4 traffic, and congestion, and emissions from our roadways.

5           These are roadways that transect our most  
6 vulnerable communities and are demonstrated by the  
7 greatest pollution burden on these communities. We are  
8 more than willing to continue to invest in lowering  
9 emissions for our ferries, but the technology must be  
10 available. It must include State funding to maintain the  
11 affordability that will incentivize consumers to abandon  
12 their cars. And most importantly, we need to be -- we  
13 need a reasonable time frame to work with shipyards and  
14 technology providers to construct and deploy new systems  
15 as they become available.

16           We carry about 800,000 passengers a year that  
17 would normally drive the six miles through the community  
18 we are trying to protect. We feel that this isn't really  
19 considered in the carbon impact. We have up -- repowered  
20 to Tier 3 and reduced speed to minimize our impact on the  
21 environment. Tier 3 has also removed us from some of the  
22 grant opportunity, which kind of works backwards on the  
23 whole thing we're trying to achieve here with lower  
24 emissions.

25           We've engaged an engineering firm to look at the

1 zero emissions opportunities. And so far, it's not  
2 feasible for us to maintain our service and feasibility as  
3 an affordable alternative to driving across the bridge and  
4 driving through these communities.

5 BOARD CLERK ESTABROOK: Thank you. That  
6 concludes your.

7 Our next speaker is Scott Hedderich. Scott, you  
8 may unmute and begin.

9 SCOTT HEDDERICH: Good morning. Good morning,  
10 Chair Randolph and members of the Board. My name is Scott  
11 Hedderich. Appreciate staff trying to spell it or  
12 pronounce it. I'm with the Renewable Energy Group, a  
13 leading manufacturer of renewable and biodiesel in the  
14 U.S. I do want to make sure that we associate our  
15 comments those of CABA, CFA, and the other in-state  
16 biodiesel manufacturers.

17 I want to talk about something very specific that  
18 hasn't been mentioned, except I think by one of the last  
19 speakers around Appendix E and that's explain why the  
20 proposed language addressing biodiesel in Appendix E  
21 should be removed, excuse me, from the rule, or failing  
22 that should be thoroughly edited and rewritten to reflect  
23 valid factual information and evidence. Many of the  
24 claims made about biodiesel in that section are simply  
25 wrong. They're based on antiquated studies dating from

1 2006 to 2012, and they are no longer relevant nor accurate  
2 in light of new data.

3           For example one statement in the ISOR reads,  
4 "Biodiesel, which is a methyl ester compound that should  
5 not be used in high quantities with retrofit  
6 aftertreatment". We've simply found no evidence to  
7 support this claim whatsoever that biodiesel cannot be  
8 used in high quantities with aftertreatment devices.  
9 We've been using B20 in NTDEs on road for a significant  
10 amount of time, and no it's not a problem.

11           CARB's own finding in the 2015 ISOR for the ADF  
12 determined that engines that meet the latest emission  
13 standards through the use of selective catalytic reduction  
14 have been shown to have no significant difference in NOx  
15 emission based on the fuel used. And it should be pointed  
16 out that that study included testing 100 percent  
17 biodiesel.

18           It's disappointing that CARB would choose to  
19 present such misleading and inaccurate information on a  
20 fuel that's approved for in-State usage, has had over 1.4  
21 billion gallons consumed, and has delivered 12.3 million  
22 credits of carbon reduction in the LCFS. We again ask  
23 that this section be deleted, short of that working with  
24 industry to ensure that it at least reflects current data  
25 and not data that's 12 to 15 years old.



1 Thank you.

2 BOARD CLERK ESTABROOK: Thank you.

3 Greg Hurner, you can unmute and begin.

4 GREG HURNER: Thank you.

5 Thank you, Chair Randolph and members. Again, I  
6 want to reiterate from the sportfishing communities, your  
7 thanks for your comments at the November meeting.  
8 Additionally, Chair Randolph, I want to thank you for your  
9 personal involvement and the involvement of the  
10 legislative staff and your advisors that were -- that  
11 engaged with us, and also definitely want to thank Richard  
12 and Edie, Heather, Bonnie, and David for their engagement  
13 with us and their professionalism.

14 Dr. Balmes made a statement in November that  
15 really struck me, and that was about the impacts from the  
16 rule and the effects that it can have on those that are  
17 subject to the rule. And we need to consider those  
18 impacts. That's part of the non-monetary impacts that  
19 we've discussed with your staff and with you, and we  
20 really appreciate the engagement in that regard, and think  
21 we have found a very good path.

22 We are very interested in working with the engine  
23 manufacturers through the technology review to find out  
24 what they can bring to the table. We know there's future  
25 promises. We also know that there are zero-emission

1 technologies out there that are coming forward and we look  
2 forward to working with the Pacific Environment and the  
3 Coalition for Clean Air on helping the transition of all  
4 harbor craft.

5           And lastly, I just want to thank the bipartisan  
6 groups, some of legislators, some of those that the Chair  
7 mentioned at the beginning of the meeting. This has been  
8 a collaborative and productive effort. And it's truly  
9 appreciated, and we look forward to continuing to engage  
10 in the future.

11           Thank you.

12           BOARD CLERK ESTABROOK: Thank you.

13           Next will be Ryan Mack. And after Ryan, Beau  
14 Biller, I saw that your hand went back you, that it was up  
15 earlier, and you're able to speak now.

16           So, Ryan, you may unmute and begin.

17           RYAN MACK: Is it still morning?

18           Hello, everybody. Can you hear me?

19           BOARD CLERK ESTABROOK: Yes, we can.

20           RYAN MACK: All right. Hello and good morning.  
21 My name is Ryan Mack. I'm the founder and owner of MP  
22 Strategic group. It is a think tank comprised of Cal  
23 Maritime grads from different disciplines such as marine  
24 transportation and engineering, as well as policy. Myself  
25 and my colleagues love maritime policy and hope to one day

1 develop better maritime policy for the mariner.

2 I was proud and excited to see a Cal Maritime  
3 feasibility study cited in the commercial harbor craft  
4 methodology for the rulemaking. However, the Cal Maritime  
5 study clearly states that Tier 4 plus DPF is only  
6 attainable on the largest newest tugs.

7 Considering -- I'm going to repeat this from Max  
8 Cohen's point, but considering the vertical stability  
9 issues for towing vessels that are raise in the very same  
10 CMA study, which is used to justify the regulations,  
11 towing vessels in subchapter (m), according to 46 CFR 170  
12 will be put out of compliance for the regulation. It  
13 specifically states that it is not meant to put vessels  
14 out of compliance with CFRs, but it may, in fact, be doing  
15 so.

16 It would be naive of me to think that the CHC  
17 Regulation will be overturned. But moving forward, I  
18 employ CARB staff to work with the United States Coast  
19 Guard on vessel stability, safety, and heat with these new  
20 DPF systems. Recently, there was a fire on board the Miss  
21 Dorothy, a tug located on the Mississippi River. The  
22 cause of that fire, according to the NTSB was due to  
23 diesel spray on an exposed exhaust manifold. While this  
24 vessel did not have a DPV or SCR, addition a heat on the  
25 exhaust manifold will raise the likelihood of a fire on

1 board these vessels.

2           And I would just like to conclude and say that I  
3 have a -- I have a unique responsibility as a mariner to  
4 protect my fellow mariners in ensuring that vessel  
5 stability, safety, and reliability is paramount. So thank  
6 you so much for your time.

7           BOARD CLERK ESTABROOK: Thank you.

8           Beau Biller, you can unmute and begin.

9           Beau, are you there?

10          It doesn't look like you're unmuted.

11          Okay. Sorry, Beau. We're not able to hear you.  
12 You can please submit your written comments on the  
13 website. We're unable to -- it looks like you're not  
14 unmuted on your end. Sorry about that.

15          Chair, that concludes the commenters.

16          CHAIR RANDOLPH: Thank you. Staff, are there any  
17 issues raised in the comments that you want to address?

18          EXECUTIVE OFFICER COREY: Nothing to add, Chair.

19          CHAIR RANDOLPH: Okay. Thank you.

20          EXECUTIVE OFFICER COREY: Excuse me. There's a  
21 comment that legal wants to make.

22          BOARD CLERK ESTABROOK: Alex Wang, are you on?

23          SENIOR ATTORNEY WANG: Sorry. Hello. Sorry.

24          Yeah. This is Alex Wang. I'm a staff attorney assisting  
25 staff on this rulemaking item.

1           Chair Randolph and members of the Board, nearly  
2 all of the comments provided today do raise issues that  
3 had been previously submitted and considered by staff.  
4 Specifically in regards to environmental comments  
5 received, we have already provided you with comprehensive  
6 responses to those comments, in a response to comments on  
7 the Draft Environmental Analysis, which include comments  
8 submitted again today. Staff has not identified any new  
9 significant -- sorry, staff has not identified any new  
10 significant information in the comments today that have  
11 not already been addressed.

12           Staff would, however, like to provide an  
13 additional response to the comment letter submitted today  
14 from the Clean Fuels Alliance America and California  
15 Advanced Biofuels Alliance. While that letter does not  
16 identify a significant environmental effect, the  
17 regulation, it states that the responses we provided to  
18 comments 3196-1 and 3196-2 in the response to comments  
19 document appear to have been based on misconceptions and  
20 misunderstandings regarding the R99 proposal.  
21 Specifically, the letter states that the proposed R99  
22 requirement would result in fewer particulate matter  
23 emission reductions versus the renewable 80 and biodiesel  
24 20 fuel blend.

25           Staff believes that the responses provided for

1 comments 3196-1 and 3196-2 in the Final Environmental  
2 Analysis response to comments document reflects the most  
3 recent information and accurately reflects the reductions  
4 of particulate matter, NOx, and life-cycle greenhouse gas  
5 benefits that would have been achieved by the proposal to  
6 require use of R99 or higher blends of renewable diesel.

7 We're aware that there may be some PM reductions  
8 from R80/B20 blend compared to R99 or greater, but those  
9 potential benefits must be weighed against the potential  
10 relative NOx increases from the biodiesel and the blends,  
11 in addition to other performance concerns. And those  
12 concerns are responded to in comments 3235-4 in the Final  
13 Environmental Analysis response to comments document.

14 There is no other diesel fuel blend than R99 or  
15 higher that provides a greater amount of NOx reductions,  
16 and, as outlined in our staff presentation, there is a  
17 shortfall on the NOx reductions needed to meet the goals  
18 of the State SIP Strategy. Comments regarding PM  
19 reduction benefits from use of B80/B20 do not -- do not  
20 indicate that a significant environmental effect would be  
21 caused by the proposed regulation.

22 In addition to achieving less NOx reductions, use  
23 of blends of biodiesel by more than five percent would not  
24 comply with the standards for CARB diesel, according to  
25 ASTM D-975. The proposed amendments require use of

1 verified diesel emission control strategies verified  
2 pursuant to 13 California Code of Regulations 2700 to 2711  
3 et seq., which requires additional analysis and testing  
4 for use of alternative diesel fuels, such as biodiesel.

5           The use of biodiesel could also conflict with  
6 requirements of vessels that travel internationally or  
7 into international waters, such as the MARPOL Annex VI  
8 regulation 18 requirements, that require testing to ensure  
9 no increases in NOx emissions.

10           All right. Thank you.

11           CHAIR RANDOLPH: Thank you. I will now close the  
12 record on this agenda item. Any written or oral comments  
13 received after this hearing date will not be accepted as  
14 part of the official record on this agenda item.

15           If the Executive Director -- I'm sorry, if the  
16 Executive Officer determines that additional conforming  
17 modifications are appropriate, the record will be reopened  
18 and a 15-day Notice of Public Availability will be issued.  
19 If the record is reopened for a 15-day comment period, the  
20 public may submit written comments on the proposed changes  
21 which will be considered and responded to in the Final  
22 Statement of Reasons for the regulation. The Executive  
23 Officer may present the conforming modifications to the  
24 Board for further considerations if warranted, and if not,  
25 the Executive Officer shall approve or disapprove such

1 modifications and take final action to adopt the  
2 regulation after addressing all conforming modifications.

3 All right. Ready to bring this to the Board. If  
4 any Board member has a question or comment please raise  
5 your hand if in person or click the raise hand symbol, if  
6 you are on Zoom.

7 I'm going to kick off with a question. And this  
8 seems to me, you know, kind of the most key issue in this  
9 process. So I wanted to kind of set it out at the  
10 beginning. And I think the commenter Shawn Bennett  
11 articulated it best with kind of the fundamental questions  
12 about technological feasibility and safety. You know, he  
13 mentioned issues around power stability, and safety, and  
14 other concerns related to DPFs. And so I thought it would  
15 be important for staff to sort of discuss with the Board  
16 kind of the process and safety considerations that go into  
17 the approval of engines and DPFs. So if staff could  
18 respond to that, that would be --

19 EXECUTIVE OFFICER COREY: Yes. David Quiros will  
20 respond, Chair.

21 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:

22 Well, thank you, Chair Randolph and members of  
23 the Board. Safety is a top priority for us as an air  
24 quality agency when we're requiring the use of  
25 technologies like Tier 4 engines and diesel particulate



1 filters. We've worked with other bodies like the U.S.  
2 Coast Guard a number of times, and we're going to continue  
3 to work with them as we go into the implementation of this  
4 rule, if approved.

5 One thing to keep in mind is that there are DPFs  
6 that are certified by the United States Environmental  
7 Protection Agency for marine use to the Tier 3 standards  
8 that have DPFs on them, and those have been certified  
9 since 2017.

10 On CARB's role of that, we verify the aftermarket  
11 DPFs through a rigorous procedure that you heard about  
12 today from Rypos and Nett Technologies called the  
13 verification process. And through that process, in  
14 addition to verifying levels of emissions reductions of  
15 diesel PM of 85 percent or more, we also require the  
16 applicants to demonstrate the potential safety and failure  
17 modes associated with their strategies, and what  
18 mitigation measures that they're supposed to be using to  
19 make sure that those DPFs are safe.

20 So CARB would not verify something with a known  
21 performance issue with a DPF. In our recent conversations  
22 with the Coast Guard, we've also learned that they too are  
23 asking at the local level what type of safety measures are  
24 in place on these marine DPFs as they're beginning to be  
25 tested and verified for use in the rule.

1           So one such project that Nett Technologies is  
2 involved with the S. Bass tug that's operating down in San  
3 Diego. And that is currently undergoing verification, and  
4 the Coast Guard is being looped in, and it could be  
5 potentially a technology that would be used to comply with  
6 this rule.

7           CHAIR RANDOLPH: Okay. Thank you.

8           All right. Any other Board members would like to  
9 comment or ask questions?

10          Vice Chair Berg.

11          VICE CHAIR BERG: Thank you. And thank you staff  
12 and everybody who have been stakeholders that have been  
13 participating in this regulation. It is complicated.  
14 There are many duty cycles that we are addressing here and  
15 it's a long established industry. And so we know that  
16 when we go to the next steps, that that does make industry  
17 very nervous. What we also know that is the benefits are  
18 overwhelming and we know that we need to be forward.

19          I thought it would be helpful if staff could  
20 clarify a couple of things. One, we heard time and time  
21 again about technology not being available specifically in  
22 the Tier 4 area and DPFs. I think -- and yet in staff's  
23 presentation, they did mention that 22 engines were  
24 available. So if we could just have a little clarity on  
25 the availability of technology, and if technology is not

1 available, what's -- what's the process. I think that  
2 would be extremely helpful.

3           The other thing is the simplification of  
4 extensions. It did seem that I thought I didn't realize  
5 the cost of the \$54,000 for the needed documentation for a  
6 small company. That is very extensive. If you have one,  
7 two, three vessels that's a lot of money. So I'd be very  
8 interested in how the simplification has -- is going to  
9 impact positively on this process.

10           And then I think my last clarification truly is  
11 to address we have very short time frames. This is an  
12 aggressive rule and we have very short time frames, so  
13 there is going to be some barriers. There's going to be  
14 things backing up. This is a lot of engineering. This is  
15 a lot of preparation to retrofit, or to put new engines,  
16 or to get new vessels. And so what's going to be the  
17 process when things do get backed up for these companies?

18           And then finally, I'd really appreciate to hear  
19 from staff this issue of useful life. I have to say that  
20 I am sympathetic to the useful life issue. We're  
21 asking -- if we only started from now and the amount of  
22 investment, but people have been making investments to get  
23 to Tier 3s and Tier 4s. And so how are you thinking about  
24 that, especially in light of going to zero, which we know  
25 is our ultimate goal. So I would appreciate some thought

1 about that.

2 Thank you so much.

3 EXECUTIVE OFFICER COREY: David Quiros is going  
4 to take this as well. David.

5 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:

6 Thank you, Vice Chair Berg. This is David  
7 Quiros. I captured four questions that you raised to  
8 staff. Let me touch on them in order here.

9 The first one was on Tier 4 engine availability  
10 and DPF availability. We did have in our staff report, we  
11 said in the staff presentation, that there are 22 models  
12 of Tier 4 engines that are available. That would be  
13 certified by U.S. EPA for marine use today. Not all of  
14 those will fit in the in-use vessels that are operating in  
15 California today. And there might be some combinations of  
16 duty cycle ratings or engine power sizes, where there just  
17 isn't a Tier 4 engine certified.

18 So built into the regulation and the proposal in  
19 November, there's an extension pathway that would allow  
20 operators to get extensions, two years at a time, and  
21 there would be no limit to the number of two-year  
22 extensions, if technology is just not certified.

23 The separate question is whether it fits in the  
24 vessel, and that's the feasibility extensions that we've  
25 heard a lot about in the staff presentation that are

1 limited to six years for most vessels and eight years for  
2 passenger vessels with earlier compliance deadlines.

3           On the DPF side, there are some OEM engines,  
4 engines made by engine manufacturers that are certified by  
5 U.S. EPA with DPFs today. Those are in the Tier 3 class.  
6 There are no Level 3 DPFs that could be used with Tier 4  
7 engines today, but we heard from two retrofit  
8 manufacturers and one engine manufacturer that is  
9 certifying or verifying engines that would meet the Tier 4  
10 plus DPF standard.

11           Similarly, if there's no DPFs available by a  
12 compliance deadline, that's not a feasibility question,  
13 that's an availability question. And there's no limit to  
14 the number of two-year extensions that would be available  
15 to the operators that would need to comply.

16           The second question you asked was about the  
17 simplification of the compliance extension process. The  
18 CMA report, after reevaluating the direction in November,  
19 can be used by some vessel categories to satisfy the  
20 third-party Naval architect analysis. An initial idea  
21 that we have is for the first of the two -- the first two  
22 years of the six to eight year total of feasibility  
23 extensions, that that report would be able to satisfy the  
24 technical basis if a vessel is made out of wood or  
25 fiberglass. We might be able to use that CMA report in

1 broader context, but at a minimum, we should be able to  
2 use it for the wood and fiberglass vessels.

3           The third issue that was raised was the  
4 short-term time frames for compliance. So in the first  
5 five years of the regulation being implemented, 2024  
6 through 2029, vessels were the highest emissions have  
7 compliance dates. Tugs, for example, have high activity,  
8 large engines, and directly pollute near-shore  
9 communities. Ferries are in that category. They have a  
10 direct passenger impact. That's why they have early  
11 compliance deadlines.

12           The compliance dates can be extended due to the  
13 extensions either availability or feasibility. And if the  
14 feasibility extensions are granted in full, that could  
15 mean that vessels don't have to take action to reduce  
16 their emissions until 2030.

17           So that leads to the fourth topic you raised  
18 about the useful life. We heard requests about useful  
19 life of up to 25 years and we don't doubt that a lot of  
20 the operators take good care of their engines, have good  
21 maintenance practices, and that engines can last that  
22 long. With the compliance dates that are proposed in --  
23 back in November, most engines will have at least 10 to 15  
24 years before they have to turn over to something new. And  
25 we recognize that those engines might have been able to be

1 operated longer, but we do need to achieve reductions,  
2 especially as there's a need to reduce diesel emissions  
3 and then also the promise of zero-emission technology on  
4 the horizon.

5           And the last thing that I'll say is that every  
6 year where there's an opportunity to reduce cleaner  
7 combustion emissions by 90 percent, it would take 10 years  
8 of zero-emission operation to make it up.

9           So we can't wait for zero to be here for the  
10 majority of the harbor craft that are operating where  
11 there's an opportunity to achieve the public health  
12 protections that we need today.

13           Thank you.

14           VICE CHAIR BERG: Thank you, David. My follow-up  
15 question is is that given that it is a shorter useful  
16 life, that was taken in consideration for the cost  
17 analysis? So did you use a 10 or 15 year life in the cost  
18 analysis?

19           TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:

20           The useful life that was assumed in the emissions  
21 was also carried forward into the cost analysis. And in  
22 many cases, if there was remaining useful life, that's an  
23 asset to the company, because they can sell or trade that  
24 asset outside of the state. And in many cases, due to the  
25 current Harbor Craft Regulation, our engines are equal to

1 or cleaner than what other states or outside jurisdictions  
2 of California are using.

3 VICE CHAIR BERG: So do I understand that to be  
4 no?

5 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:  
6 We did use the cost -- the useful life of the  
7 engines into the consideration, yes.

8 VICE CHAIR BERG: Okay. And then may I ask one  
9 more question. And I'm not sure it will be of David, but  
10 I was intrigued by the -- the speaker that talked about  
11 Humboldt Port and the fact that they were in a compliant  
12 area. Sounds like a small port operation. Could someone  
13 make a comment on that?

14 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:  
15 This is David Quiros, I can start responding to  
16 that. One thing is that we --

17 VICE CHAIR BERG: Thank you, David.

18 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:  
19 -- recognize is harbor craft do operate across  
20 the state. In some cases, certain vessels are dedicated  
21 to one region. But we do really need a statewide rule,  
22 because even if a region achieves the National Ambient Air  
23 Quality Standards, that doesn't mean that the emissions  
24 don't adversely impact the communities of where those  
25 vessels operate. So in order to assure that vessels that



1 operate across the state provide public health  
2 protections, we have a statewide rule.

3 VICE CHAIR BERG: Thank you very much.

4 CHAIR RANDOLPH: Board Member Hurt.

5 BOARD MEMBER HURT: Thank you. I'd like to thank  
6 the staff for the additional outreach and all the work on  
7 the regulation since November. I'd like to thank all the  
8 public commenters and just the variety of stakeholders  
9 that I have met with between now and this Board meeting.

10 Everyone who requested a meeting, I made time.  
11 And so I want to thank all of you for sharing how this  
12 regulation impacts your businesses and your families. And  
13 to Graham Balch of Green Yachts, I've never met you  
14 before, but I'm happy to meet with you. So please reach  
15 out. It would be much appreciated to learn more about  
16 your business around electric yachts.

17 I do understand how unsettling some of this may  
18 feel for some of the folks that have to have great change  
19 in their business, and in this industry, and that there  
20 are some unknowns around technology feasibility and  
21 availability, but I'm reminded of how we are one community  
22 and where everyone must move through the necessary change  
23 to really meet this unprecedented need to reverse the  
24 negative effects of climate change and improve the air  
25 quality, especially in highly impacted communities. And

1 so I believe this edited or amended resolution is really  
2 threading the needle with many of the stakeholders, and  
3 they are diverse in their needs.

4           With that said, I, too, continue to be concerned,  
5 especially in the wake of the pandemic, for small  
6 businesses boat owners. And I'm concerned about the  
7 implementation process and ensuring that we continue these  
8 businesses forward, that in some cases have been around  
9 for generations.

10           But we also must not forget the negative impact  
11 to public health that happens every day we wait in making  
12 changes, especially in highly impacted communities.

13           I think of communities near Oakland and LA ports  
14 that have bore the burden of everyone's consumption for  
15 decades. They, too, have families, and businesses, and  
16 generations living under dire conditions. And I note, and  
17 I'm very thankful staff showed the cancer risk, while it's  
18 still not eliminated with these regulations, there is  
19 great improvement in those communities. So this is why we  
20 must move forward with this regulation with the  
21 appropriate guardrails. I've heard loud and clear that  
22 technology for some boat types are in flux or not  
23 available, and others just really have grave concerns  
24 around funding and implementation.

25           My ask of the Board and staff is not just a

1 technical feasibility, but also an implementation review  
2 of how this regulation is progressing, how the  
3 case-by-case extensions are going. It is BAAQMD's  
4 experience today and in the past that it takes months to  
5 get sign-off on a case-by-case extension, even in clear  
6 cases.

7 I did ask in my briefing, you know, are we going  
8 to increase the budget, are we going to have staff to  
9 really meet the need? And I understand that that's in  
10 process. But we need to get this right, so that this  
11 regulation really serves our end goals.

12 I also would like for us to assess the industry  
13 pace of ship builders and retrofiters. The ability of  
14 small boat owners to get in those necessary queues to get  
15 the retrofits in new boats I think is absolutely essential  
16 and cannot be lost in this process. I think about the Bar  
17 Pilots of San Francisco that have a 24/7 business that  
18 requires that they're moving, and operating, and guiding  
19 freight movement in the Bay. If there's limited pilot  
20 service, ocean-going vessels will not be able to come to  
21 shore and plug up, and they will idle in the bay around  
22 communities again highly impacted, which brings me to  
23 funding.

24 Around the grant funding, I understand that the  
25 deadlines and the surplus agreement under Carl Moyer grant

1 prevents funding -- or rather is not an option for many  
2 folks to rely on as it's currently situated. I understand  
3 that we are the regulators and we should do our best to  
4 shape our funding programs, however, to meet the needs, so  
5 that it's a successful regulation. I urge staff to find  
6 solutions around that, whether it's a shortening of the  
7 surplus years from three to two, or maybe extending that  
8 option. And maybe the IPAG group can take a look at how  
9 that's affecting the harbor craft folks.

10 I've also heard that there's folks lobbying the  
11 Capitol for more funding. And so this data around  
12 implementation, as well as technology feasibility I think  
13 will be beneficial. So if we could add those, again the  
14 implementation review I think it will helpful in the  
15 freight ask.

16 So with that said, I truly appreciate and support  
17 the compliance schedule and the extensions with financial  
18 hardship and feasibility at the front, equity centered, is  
19 really going to important for me when we talk about the  
20 streamlining of those extensions. I said in the last  
21 meeting that those who receive funding from Carl Moyer  
22 should be able to maximize those efforts with appropriate  
23 extensions. And I want to continue to keep that raised up  
24 as an important element in this regulation moving forward.

25 And so just again, if we could, in addition to

1 the technical feasibility biannual review add an  
2 implementation review.

3 But I'm ready to move forward. I know it's going  
4 to be a difficult reg, but I think it's important.

5 Thank you.

6 CHAIR RANDOLPH: Thank you. Board Member De La  
7 Torre.

8 BOARD MEMBER DE LA TORRE: Thank you. I want to  
9 thank staff as well. This, you know, two-part hearing  
10 process a lot has gone on, a lot leading up to the initial  
11 hearing and then obviously there's been more meetings,  
12 more discussions with industry. And we hear the concern.  
13 It's a big leap for many of you.

14 I am supportive of the adjustment being proposed  
15 for the fishing fleets. Those boats are unique. They're  
16 small. They're light. They -- you know, they're just  
17 different. And so I'm very supportive of getting the  
18 immediate air quality improvements that we can get and  
19 work with you going forward.

20 I also am very supportive of the mid-term review  
21 on the technological viability. That's very important. I  
22 know you don't see us do this all the time, but I want --  
23 I want to be clear. We -- when we do a mid-term review,  
24 it is a thorough, real mid-term review. So that isn't  
25 just a talking point here. We're going to do it. It will

1 be thorough. And if we identify things that are missing  
2 at the time, technologically, we -- we'll adjust. And we  
3 do that regularly here. So I want to -- I want to assure  
4 you that that is a real and significant commitment on the  
5 part of the Air Resources Board.

6           The extensions that are being proffered here with  
7 across the Board, very unusual. We -- when we do a  
8 extensions, they're normally, one-offs that we allow the  
9 Executive Officer to determine. In this case, it is a --  
10 an across-the-board extension offer at the -- when the  
11 time comes, when your dates come up for your particular  
12 vessels, and that is extremely unusual for us.

13           Yes, we -- I share Vice Chair Berg's concern in  
14 terms of the timing of it and Board Member Hurt's concerns  
15 about being able to process these. But the fact that  
16 we're doing an across-the-board extension is extremely  
17 unusual for us, and I think a sign that staff and the  
18 Board recognizes that you -- that we are taking this big  
19 leap, and, you know, we want to be as flexible as we can.

20           Finally, on the dollars for -- and this is  
21 particularly for the Catalina Ferry. I am -- I've said  
22 this before. I'll say it again. I'm very sympathetic to  
23 the issue of Catalina. I have not been able to find  
24 another scheduled ferry to an island offshore of  
25 California. There are charters, but it is -- to my

1 understanding, it is the only sched -- regularly scheduled  
2 ferry service to an island offshore in California.

3           It is the lifeline to that island for the people  
4 who live there and then obviously for the tourists who go  
5 back and forth. I've been there many times. It is part  
6 of, you know, being in Southern California, or being in  
7 California at all. So very, very important that that  
8 lifeline is maintained.

9           I have spoken to Senator Allen and Assembly  
10 Member O'Donnell about this. They have committed to work  
11 with us on finding the funding to help the Catalina ferry  
12 make this transition.

13           So we've talked about various ways it can be  
14 done. You know, it's the legislative process which I know  
15 all too well can -- it is -- it is the sausage making that  
16 everyone hears about all the time, but there's a few  
17 months here to really shape what that proposal looks like  
18 and gets some resources particularly to scheduled ferry  
19 service to offshore islands in California.

20           So that's it in terms of my comments. I do have  
21 a question on the articulated barge, because I heard this  
22 a few times in different meetings, that there was a  
23 difference in definition between California and the  
24 federal government on articulated barges, whether or not  
25 they're harbor craft or ocean-going vessels. So I'd like

1 an answer to that question. But I am supportive of the  
2 measure today for all the reasons I said.

3 Thank you.

4 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:

5 This is David Quiros. I'll respond to your  
6 question, Board Member De La Torre. California, CARB in  
7 particular, has regulated ATB tugs since 2009 as harbor  
8 craft and the U.S. Coast Guard also classifies ATB tugs as  
9 harbor craft as subchapter (m) towing vessels.

10 BOARD MEMBER DE LA TORRE: Thank you.

11 CHAIR RANDOLPH: Okay. Thank you.

12 Board Member Takvorian.

13 BOARD MEMBER TAKVORIAN: Thank you, Chair. I  
14 just wanted to add that I do support the measure as  
15 proposed. And I appreciate the collaborative work of CARB  
16 staff and particularly the Sportfishing Association and  
17 industry, which seems to have created a pathway that's  
18 feasible.

19 I understand the concerns that have been raised  
20 and I appreciate the addition of the mid-term review,  
21 which I hope will respond to many of the questions that  
22 have been raised about technology. I do want to  
23 emphasize -- we've been focusing a lot on feasibility, and  
24 a bit on economics, but I want to emphasize that the  
25 reduction of the cancer risk from these vessels and



1 improvement in the air quality and health is really  
2 significant and especially in environmental justice port  
3 and coastal communities from Oakland to San Diego. It's  
4 quite significant.

5           In San Diego, these vessels are a significant  
6 emissions source and they are included in the 617 program  
7 CERP. And it accounts for over half of the diesel  
8 particulate matter from off-road sources and 47 percent of  
9 the NOx. And the emissions from these vessels represent  
10 about 28 percent of the cancer risk to portside  
11 communities -- to the portside community of Barrio Logan.  
12 And I just wanted to be really clear about the exposure  
13 for those of you who may not have seen this in -- in  
14 different portside communities, but in San Diego. And we  
15 appreciate that CARB staff were able to come and visit and  
16 see the exposures for themselves. The tug maintenance  
17 yard in Barrio Logan is located right next to the only  
18 pier on San Diego Bay that's accessible to Barrio Logan  
19 and right next to the only bayside park, where students  
20 from the neighborhood elementary school recreate, because  
21 there's no playground at the school. So they walk over a  
22 railroad track and through heavy-duty trucks that are  
23 barreling down the streets in order to get to this park,  
24 because they have nowhere to play at the school.

25           I was there last week and saw U.S. Navy members

1 using the park for exercise as well. So make no mistake,  
2 there's quite a bit of exposure. The park is well used  
3 and we're very hopeful that the tugboats can transition to  
4 zero emissions sooner than we're currently anticipating.  
5 And again, that's why the mid-year -- mid-term review is  
6 quite important and we're -- we're very inspired by the  
7 pilot demonstration of zero-emission tugboat in San Diego  
8 and the ferry in San Francisco. So we look forward to  
9 hearing the results of those pilots.

10 So again the mid-term review is very good marker  
11 to -- to really indicate what the transition can be and I  
12 appreciate the addition of that measure.

13 Thank you.

14 CHAIR RANDOLPH: Thank you.

15 Supervisor Vargas.

16 BOARD MEMBER VARGAS: Thank you. Thank you,  
17 Chair Randolph. And I just wanted to add to some of  
18 Member Takvorian's comments. First and foremost, I want  
19 to thank you for -- you know, as the representative of our  
20 San Diego portside community, I want to say thank you to  
21 all the staff for all the work up and to this point, and  
22 coming to San Diego and to visit the sportfishing fleet,  
23 which really compromises small ownerships and family  
24 businesses. And I think it was really important that this  
25 rule really made sure that for the AB 617 communities had

1 additional considerations, and that the engagement that  
2 took place.

3           As it was mentioned, our San Diego portside EJ  
4 community is the second category of higher pollution  
5 sources impacting Barrio Logan, National City. And so  
6 this support -- this directly is going to support several  
7 of -- several of our CERP strategies and actions. And so  
8 the MOU that we have with CARB, our APCD staff is actually  
9 ready to assist fleets. And then we'll be planning  
10 outreach activities to harbor craft business as well. So  
11 I really appreciate the inclusion of our technical working  
12 group for the biennial review. I think it's extremely  
13 important.

14           So again, I want to just thank CARB staff, my  
15 colleague, Supervisor Fletcher, who spoke earlier today as  
16 well for all of his engagement, and the Portside Community  
17 steering committee for the work in the CERP. I know it's  
18 tough, but I think this rule allows us enough time to  
19 transition the fleets. And I'm supportive of the staff's  
20 recommendation as well, so thank you.

21           CHAIR RANDOLPH: Thank you.

22           Dr. Balmes.

23           BOARD MEMBER BALMES: Thank you, Chair Randolph.

24           And, you know, going kind of late in the queue of  
25 Board members, much of what I would say has already been

1 said and said well. I particularly want to highlight  
2 Supervisor Hurt's comments. You know, she stole the line  
3 that I was going to use, that staff, with the revised  
4 proposal, has thread the needle.

5           You know, there's a tension, which I remarked  
6 about and others did in November between trying to  
7 maintain small business -- businesses that are impacted by  
8 this regulation and the public health benefits that are so  
9 important to portside communities.

10           And I think staff has done a good job in  
11 threading that needle. I -- I appreciate Supervisor  
12 Vargas for mentioning the technical working group. You  
13 know, I think the mid-term review is very important, but  
14 the biennial technical working group -- I may have the  
15 biennial wrong, but the technical working group where  
16 staff and affected industry stakeholders will be working  
17 together I think is real -- is key and we really need to  
18 make sure that that functions well.

19           I also appreciate Supervisor Hurt saying that in  
20 addition to the mid-term review on technical matters,  
21 there should be implementation review as well. You know,  
22 I think that probably is what staff is proposing, but the  
23 implementation part is important to include the  
24 barriers -- economic barriers, as well as the technical  
25 barriers to getting cleaner vessels that move us towards

1 zero-emission ultimately.

2           And I just want to take this opportunity to  
3 praise Executive Officer Corey for his role in threading  
4 the needle here. I realize that there's a whole team  
5 effort here from Chair Randolph to staff. But since I  
6 won't be able to attend the April Board meeting, I want to  
7 say thank you for Mr. Corey's effort on this regulation  
8 and the many regulations and policies that I have worked  
9 with him on over the years. If this is your last hurrah,  
10 Richard, it's a good one.

11           Thank you.

12           CHAIR RANDOLPH: Thank you.

13           Board Member Kracov.

14           BOARD MEMBER KRACOV: Yes. Thank you, Chair  
15 Randolph. Coming here at the very end obviously want to  
16 thank staff for working so hard for so many years, and  
17 particularly the last few months in coming up with a more  
18 consensus based rule. You know, kudos to the staff for  
19 sure on this, just a great job all the way.

20           And, you know, support the comments of all my  
21 fellow Board members today. And do also want to highlight  
22 Counsel Member Hurt's -- I'll call you Supervisor Hurt  
23 too, is that okay? Give you the promotion that Dr. Balmes  
24 gave you, but Supervisor Hurt's highlighting of the role  
25 of the technological assessments, both in terms of the

1 technology and where it's going, as well as the  
2 implementation. I think Mr. De La Torre raised that as  
3 well.

4           And, you know, I come from South Coast Air  
5 District. I've heard a lot from the different  
6 stakeholders. All these different categories of vessels,  
7 you know, are in the South Coast District. So it's  
8 important being the rep from the District to hear from  
9 these stakeholders and ensure that the rule and how it's  
10 implemented is done in a fair way to industry, and, of  
11 course, all the folks that have to breathe the emissions  
12 from these vessels.

13           But I have, you know, heard from some in the  
14 industry, particularly the ferries and the tugs. So I  
15 wanted to ask a question about that, Mr. Executive  
16 Officer. You know, we've made this move now with the  
17 sport fishers to Tier 3 with the technological assessment.  
18 And we see where we go with that.

19           We have not made that revision or proposed it for  
20 the ferries or for the tugs. And I spoken to folks like  
21 Greg Bombard at Catalina, who, you know, is very concerned  
22 about the costs of this rule on his, you know, really  
23 critical fleets as Mr. De La Torre mentioned.

24           So I think it's very important that we explain  
25 the reasoning on this. So let me just ask the question,

1 and then I'll have some other comments, please, Chair.  
2 But for Mr. Corey, and, of course, you can defer that to  
3 Mr. Quiros or whoever else ably can describe this in staff  
4 in hopefully a detailed and persuasive way. But why are  
5 the other categories, particularly the ferries and the  
6 tugs and those kind of boats, not being given the same  
7 Tier 3 plus treatment as the sport fishers? If we could  
8 explain that to the stakeholders today in a persuasive  
9 way, in a thoughtful way, I'd really appreciate it.

10 EXECUTIVE OFFICER COREY: Thanks, Board Member  
11 Kracov. David Quiros will take this question as well.

12 TTD FREIGHT TECHNOLOGY SECTION MANAGER QUIROS:

13 This is David Quiros. Thank you Board Member  
14 Kracov. That's a really good question as to why the  
15 sportfishing vessel flexibility couldn't be offered to the  
16 other sectors. And the stars just really happened to  
17 align to provide this opportunity to provide early  
18 reductions for the sportfishing sector that overall would  
19 not increase emissions over our valuation period.

20 One thing to keep in mind is that the  
21 sportfishing vessels do not have compliance requirements  
22 to upgrade engines under the current Harbor Craft  
23 Regulation, which means that there's still a decent  
24 fraction of them that are Tier 1 or pre-Tier 1 or  
25 so-called Tier 0 engine operated. A lot of the

1 sportfishing vessels have upgraded to Tier 2 or 3, but  
2 there were enough of them that also had feasibility  
3 concerns as demonstrated by our Cal Maritime feasibility  
4 study, because that fleet is mostly all fiberglass and  
5 wood construction. We assumed that 99 percent of them,  
6 that would have to go to Tier 4 plus DPF would have to be  
7 replaced based on current engine technology.

8           That's not the case with the excursion vessels,  
9 with the ferries, with the tugboats. Feasibility is a lot  
10 better. They also don't happen to be operated by  
11 predominantly a small business industry, and they are  
12 mostly Tier 2 or Tier 3 now, which minimizes the  
13 opportunity to upgrade to Tier 3 and achieve early  
14 reductions that could give a little more time to  
15 transition to that Tier 4 plus DPF by 2035.

16           The final thing I'll say is that the other vessel  
17 categories still do have the extension process where they  
18 can get to six to eight years of extra time, if they can  
19 demonstrate technical and financial infeasibility.

20           BOARD MEMBER KRACOV: Okay. So thank you for  
21 that Mr. Quiros. And, you know, I think it's important  
22 that the stakeholders and industry, you know, sort of hear  
23 this as the justification for why we're moving in this  
24 direction. We do have the compliance extensions. We do  
25 have the technological assessment that's going to give us



1 a sense. And, you know, there might be reasons to revisit  
2 this rule after the technological assessment is done in a  
3 few years.

4 But the other key thing, and I know Mr. De La  
5 Torre focused on this too as well as others, is the  
6 funding. Now, I don't have all the relationships he does  
7 to, you know, be speaking with Senator Allen and  
8 Assemblyman O'Donnell, but I do know that, you know, all  
9 of us have a role in trying to assure that the funding for  
10 these sectors is available to the fullest extent possible.

11 For example, Moyer, you know I know that Moyer  
12 dollars are apportioned among the districts and that, you  
13 know, how the different sectors get that apportionment  
14 also is a decision that's up to the districts themselves.  
15 So you have committed to those folks in my Air District,  
16 you know, that I personally, you know, want to have a  
17 relationship with you. With the folks that we've just  
18 met, this is the start of a relationship, but I'll be  
19 following up, you know, with you and with District staff  
20 to see if there are opportunities to increase the funding,  
21 you know, dedicated for the marine sector.

22 And, you know, I guess this is a question for  
23 Executive Officer Corey, you know, as a Board member, you  
24 know, in addition to that, you know, whether there are  
25 things that we can do, either internally at the agency or

1 externally with legislative leadership, you know, options  
2 for directing additional incentive funds to this category.

3           It seems like we're going to pass this rule  
4 today. Folks are going to have some time, but we know  
5 there's constraints. So Executive Officer Corey, what do  
6 you think, you know, we as Board members can do to try to  
7 help get the incentive dollars to this sector as we're  
8 encouraging this very significant transition?

9           EXECUTIVE OFFICER COREY: Yes. Thanks, Board  
10 Member Kracov. That's a perfect question. And given the  
11 timing as a budget is put together, State budget, and  
12 ultimately refined over the next several months, sharing  
13 your perspective with legislative leadership, as well as  
14 the Administration would be incredibly helpful at this  
15 point in terms of the opportunities and need for  
16 incentives to pull forward the application of cleaner  
17 technologies and get reductions even earlier. That would  
18 be incredibly helpful over the coming weeks and months as  
19 the budget is refined and ultimately acted on and -- at  
20 the end of June.

21           BOARD MEMBER KRACOV: So we have our work cut out  
22 for us and thank you for allowing me to ask those  
23 questions, Chair.

24           CHAIR RANDOLPH: All right. Thank you.

25           Seeing no other comments, the Board has before

1 them Resolution number 22-6. Do I have a motion and a  
2 second?

3 BOARD MEMBER DE LA TORRE: So moved, De La Torre.

4 BOARD MEMBER BALMES: Second, Balmes.

5 BOARD MEMBER HURT: Second, Hurt.

6 CHAIR RANDOLPH: Okay. I think Board Member Hurt  
7 managed to slide the second in right before Dr. Balmes.

8 So, Clerk, would you please call the roll.

9 BOARD CLERK ESTABROOK: Dr. Balmes?

10 BOARD MEMBER BALMES: Yes.

11 BOARD CLERK ESTABROOK: Mr. De La Torre?

12 BOARD MEMBER DE LA TORRE: Yes.

13 BOARD CLERK ESTABROOK: Mr. Eisenhut?

14 BOARD MEMBER EISENHUT: Yes.

15 BOARD CLERK ESTABROOK: Senator Florez?

16 BOARD MEMBER FLOREZ: Florez, aye.

17 BOARD CLERK ESTABROOK: Ms. Hurt?

18 BOARD MEMBER HURT: Aye.

19 BOARD CLERK ESTABROOK: Mr. Kracov?

20 BOARD MEMBER KRACOV: Yes.

21 BOARD CLERK ESTABROOK: Dr. Pacheco-Werner?

22 BOARD MEMBER PACHECO-WERNER: Yes.

23 BOARD CLERK ESTABROOK: Mrs. Riordan?

24 BOARD MEMBER RIORDAN: Aye.

25 BOARD CLERK ESTABROOK: Supervisor Serna?

1 BOARD MEMBER SERNA: Aye.

2 BOARD CLERK ESTABROOK: Professor Sperling?

3 BOARD MEMBER SPERLING: Aye.

4 BOARD CLERK ESTABROOK: Ms. Takvorian?

5 BOARD MEMBER TAKVORIAN: Aye.

6 BOARD CLERK ESTABROOK: Supervisor Vargas?

7 BOARD MEMBER VARGAS: Vargas, aye.

8 BOARD CLERK ESTABROOK: Vice Chair Berg?

9 VICE CHAIR BERG: Aye.

10 BOARD CLERK ESTABROOK: Chair Randolph?

11 CHAIR RANDOLPH: Yes.

12 BOARD CLERK ESTABROOK: Madam Chair, the motion  
13 passes.

14 CHAIR RANDOLPH: All right. Thank you very much.

15 Okay. It is about 12:30 and we will take a  
16 45-minute lunch break, and we will be back at 1:15 for our  
17 next agenda item.

18 Thank you.

19 (Off record: 12:28 p.m.)

20 (Thereupon a lunch break was taken.)

21

22

23

24

25

1 AFTERNOON SESSION

2 (On record: 1:17 p.m.)

3 CHAIR RANDOLPH: Thank you very much.

4 That last item on the agenda is Item number  
5 22-5-2, draft scenarios for achieving carbon neutrality in  
6 the 2022 Scoping Plan update.

7 If you wish to comment on this item, please click  
8 the raise hand button or dial start nine now. We will  
9 call on you when we get to this portion of the item.

10 This is the second of two informational items  
11 scheduled to hear from staff about progress in developing  
12 the 2022 Scoping Plan update and details on specific  
13 legislation and considerations guiding this process. This  
14 item builds on the February Board item that provided an  
15 introductory overview to the 2022 Scoping Plan update.

16 The Board also held a joint meeting with the  
17 Environmental Justice Advisory Committee on March 10th to  
18 directly engage with Committee members on their  
19 recommendations.

20 Today's item provides the Board, the  
21 Environmental Justice Advisory Committee and the public  
22 another opportunity to hear from staff as they work  
23 towards analyzing options, tools, scenarios, and  
24 integrating environmental justice and equity  
25 considerations into the Scoping Plan to achieve carbon

1 neutrality no later than 2045.

2           Since the Legislature passed the California  
3 Global Warming Solution Act in 2006, there have been three  
4 Scoping Plans approved by the Board. The first plan  
5 outlined actions to return to 1990 emissions levels by  
6 2020, a task at the time seemed impossible without a heavy  
7 economic toll, but one that was ultimately achieved ahead  
8 of schedule during unprecedented economic stability.

9           Nevertheless, the climate impacts predicted prior  
10 to the adoption of the first Scoping Plan are being  
11 realized in California and beyond. The 2021 report by the  
12 Intergovernmental Panel on Climate Change, or IPCC, tells  
13 us that we must achieve global carbon neutrality by  
14 mid-century to avoid the worst impacts of climate change.  
15 This means in California and globally, we must achieve  
16 deep decarbonization across all sectors of the economy by  
17 2045 requiring that we escalate our mitigation measures in  
18 the near term.

19           The modeling presented today includes four  
20 scenarios where fossil fuel dependence is eliminated or  
21 drastically reduced. A future that phases out fossil fuel  
22 combustion will also deliver the critical air quality  
23 benefits needed to address ongoing air pollution  
24 disparities for our communities of color and low-income  
25 households. This transformation away from fossil fuel

1 combustion will come with a high cost. Significant  
2 investments today are critical knowing that the payback  
3 will be in future decades in the form of avoided higher  
4 damages from climate change.

5           Moreover, as we move away from combustion of  
6 fossil fuels, we must also continue to cut short-lived  
7 climate pollutants, or SLCPs, like methane and  
8 hydrofluorocarbons. We need to ensure success in reducing  
9 fossil fuel emissions isn't hampered by emissions of these  
10 super pollutants. And the modeling you will see today  
11 shows how many of the SLCPs persist, even if we phase out  
12 all fossil fuel combustion.

13           The framework for carbon neutrality also  
14 highlights the role of natural and working lands, a  
15 critical yet underutilized sector, and other mechanical  
16 carbon dioxide removal technologies will play in balancing  
17 out any emissions remaining in the system. The natural  
18 and working lands modeling presented today, is a  
19 first-of-its-kind effort to estimate and quantify the role  
20 of natural and working lands as part of our toolkit for  
21 addressing climate change.

22           The time to double down on our efforts is now.  
23 For communities disproportionately burdened by the impacts  
24 of climate change, there is no more time left. In line  
25 with statutory direction, this Scoping Plan update is

1 going to set a cost effective and technologically feasible  
2 path to continue our progress towards our 2030 goals and  
3 carbon neutrality no later than 2045 that can attract  
4 partners and be exported to other regions.

5           This plan will incorporate the final  
6 recommendations from the Environmental Justice Advisory  
7 Committee to the extent possible to ensure that all  
8 Californians, including low-income communities and  
9 communities of color, who continue to be on the front  
10 lines of experiencing the negative impacts of climate  
11 change are not left behind.

12           This plan needs to integrate environmental  
13 justice and racial equity, while including strategies to  
14 protect those most vulnerable from any negative impacts.  
15 For this to happen, dialogue and partnerships with the  
16 Environmental Justice Advisory Committee and communities  
17 of across California is critical.

18           It will also take international action and strong  
19 interstate and jurisdictional partnerships to solve this  
20 global threat. As such, building on the partnerships we  
21 have cultivated across the country and the globe will  
22 continue to be a priority for me and this agency. As has  
23 been the case historically, the benefits of this plan will  
24 be broader than just climate change. Its implementation  
25 will also help improve public health by reducing the



1 emissions burdens experienced by front-line communities.

2 Today's item is one of the several -- several  
3 opportunities the Board, members of the Environmental  
4 Justice Advisory Committee, and the public will have to  
5 engage on this important effort.

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

7 EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

8 And as you noted, the 2022 Scoping Plan  
9 represents the third update to the State's Climate  
10 Strategy. This plan will assess how our progress towards  
11 achieving our Senate Bill SB 32 2030 target and lay out a  
12 technologically feasible and cost-effective path to carbon  
13 neutrality no later than 2045.

14 The first draft of the Scoping Plan update will  
15 be presented to the Board in June, but today, as you  
16 noted, we have another opportunity that builds upon the  
17 February Board hearing to hear from staff and the public  
18 on the progress and considerations relevant to the plan.

19 The modeling presented today shows that we'll  
20 need to double, triple, or even more our efforts to  
21 develop clean technology and energy to achieve our 2030  
22 and longer term targets.

23 The red flag warnings as noted from hundreds of  
24 scientists in the IPCC report have told us we're out of  
25 time. We cannot afford to let the perfect be the enemy of

1 the good and we must consider the science and role of  
2 every tool available to us to start the transition away  
3 from fossil fuels and start removing carbon from the  
4 atmosphere. As such, carbon dioxide removal is included  
5 in every scenario staff will present.

6 The 2022 Scoping Plan must address the scale of  
7 the transition and will recommend technologically feasible  
8 and cost effective tools to achieve carbon neutrality no  
9 later than 2045 as noted. And for the first time, it will  
10 layout the quantified role our gnat and working lands will  
11 play in achieving that goal. In this update process,  
12 staff will continue to work with the Environmental Justice  
13 Advisory Committee and other stakeholders to provide  
14 meaningful public engagement in support of the building an  
15 actionable path to meet our greenhouse gas reduction  
16 targets.

17 We have the tools and we know where we need to be  
18 in the next 20 years. The Scoping Plan will outline the  
19 path to get there. We must do it in a way that supports  
20 our actions being exported elsewhere.

21 Over the course of the next month, staff will be  
22 holding workshops on the economic and air quality modeling  
23 for the scenarios being considered. I'll now ask Maureen  
24 Hand of the Industrial Strategies Division to give the  
25 staff presentation.

1           Maureen.

2           (Thereupon a slide presentation.)

3           ISD AIR RESOURCES ENGINEER HAND: Thank you, Mr.  
4 Corey.

5   --o0o--

6           ISD AIR RESOURCES ENGINEER HAND: The Scoping  
7 Plan is required by statute and is an actionable plan that  
8 lays out a cost effective and technologically feasible  
9 path to ensure we meet the statewide greenhouse gas  
10 reduction targets through direct emissions reductions for  
11 sources in the state.

12           Each Scoping Plan relies on a suite of policies.  
13 Implementing the outcomes identified in the Scoping Plan  
14 requires a combination of incentives, regulations, and  
15 carbon pricing, many of which are mandated or authorized  
16 via statute and that focus on direct emissions sources in  
17 the state, with the exception of imported electricity.

18           AB 32 requires that CARB update the Scoping Plan  
19 at least once every five years. This is our fourth  
20 Scoping Plan update. At a minimum, each plan leverages  
21 traditional air quality policies to provide both  
22 greenhouse gas and air pollution emissions reductions. We  
23 are required to minimize leakage, which is the situation  
24 where production of goods and jobs leaves the state giving  
25 the appearance that we've reduced emissions, but in

1 reality resulting in merely shifting emissions outside of  
2 the California border. When production leaves the state,  
3 not only does it shift emissions outside of California's  
4 borders, but it can also result in a loss jobs and  
5 economic activity in the state.

6 Finally, AB 32 requires that policies in the plan  
7 are cost effective with flexible compliance options and it  
8 directs CARB to facilitate subnational and national  
9 collaboration. Climate change is a global issue and  
10 without action from like-minded partners, we will still  
11 face the impacts of climate change. For global  
12 pollutants, such as greenhouse gases, a reduction anywhere  
13 is a benefit everywhere.

14 Our goal has always been to develop scalable and  
15 exportable programs that other jurisdictions can implement  
16 and use to reduce emissions within their borders. That is  
17 one of our biggest contributions to addressing this global  
18 threat.

19 --o0o--

20 ISD AIR RESOURCES ENGINEER HAND: As mentioned,  
21 direction on Scoping Plan goals and objectives are  
22 informed by statute and Executive Orders. Each Scoping  
23 Plan is a high level actionable plan that spans across all  
24 sectors. This is the step we are discussing today. After  
25 each Scoping Plan is adopted, CARB and other State

1 agencies start the process of reviewing and updating  
2 related programs or developing new programs to align with  
3 any outcomes identified in the Scoping Plan.

4           Aligning these programs relies on multiple  
5 divisions across CARB and other State agencies taking  
6 action based on their established roles and authority.  
7 For CARB, that means we bring forth dozens of regulations  
8 and programs to the Board to approve, which will help  
9 implement the plan. Each of these has their own public  
10 process and detailed technical analyses. For example,  
11 that means that some regulations can take at least a  
12 couple of years to develop through a public process, go  
13 before the Board for adoption, and follow the rest of the  
14 required regulatory steps involving approval by the Office  
15 of Administrative Law, and filing with the Secretary of  
16 State before regulations become effective.

17           Once regulations and programs are in effect,  
18 there is additional time for projects to be constructed,  
19 or for equipment turnover, or retrofits to occur.  
20 Therefore, the emissions reductions from these actions  
21 will take some time to show up in the AB 22 inventory.

22   --o0o--

23           ISD AIR RESOURCES ENGINEER HAND: Since we kicked  
24 off the 2022 Scoping Plan update in June last year, we  
25 have heard from California stakeholders through public

1 workshops and Environmental Justice Advisory Committee  
2 meetings. We have conducted 12 public workshops including  
3 a three-day kick-off series with sector-focused  
4 discussions for modeling scenario workshops, and topical  
5 workshops covering natural and working lands, engineered  
6 carbon removal, short-lived climate pollutants,  
7 electricity, building decarbonization, and public health.

8 We have received many written comments that we  
9 used to design both AB 32 sources scenarios and natural  
10 and working lands scenarios. We received comments from EJ  
11 organizations, industry representatives, individuals,  
12 topical experts, and other affected stakeholders. We  
13 received written comments from the EJ Advisory Committee  
14 for the AB 22 source scenarios and we have explained how  
15 these comments were incorporated in the scenario inputs.

16 In addition, conversations with the EJ Advisory  
17 Committee Working Group for Natural and Working Lands  
18 informed those scenarios. Last week, on March 15th, we  
19 held a public workshop to present the modeling results  
20 based on these scenario design inputs.

21 --o0o--

22 ISD AIR RESOURCES ENGINEER HAND: The overlay of  
23 carbon neutrality in our long-term climate planning means  
24 we need to redefine our scope of sources and sinks in that  
25 framework in the 2022 Scoping Plan. Carbon neutrality is

1 achieved when emissions sources equal sinks. Up until  
2 now, every Scoping Plan has focused on reducing emissions  
3 from fossil energy and industrial-focused sources defined  
4 in the AB 32 inventory.

5 As we shift to the framework of carbon  
6 neutrality, we have expanded the scope to include all  
7 sources, which means emissions from the natural and  
8 working lands and all sinks.

9 The circle shown on this slide represents  
10 California's greenhouse gas emissions from AB 32 inventory  
11 sources, which we continue to ratchet down through air  
12 quality and climate policy. Carbon capture and  
13 sequestration can also be applied to large emitters of  
14 carbon dioxide to mitigate emissions.

15 Natural and working lands can be a net GHG source  
16 or sink, as indicated by the plus and minus signs. The  
17 state's separate natural and working lands inventory  
18 allows us to track the GHG emissions and sequestration on  
19 natural and working lands over time.

20 Beyond nature-based solutions, there are  
21 technological carbon dioxide removal options, such as  
22 direct air capture of CO2 coupled with permanent  
23 underground storage of CO2 that can remove emissions from  
24 the ambient air.

25 Once we have a sense of GHG emission mitigation

1 from our sources and the potential role of our natural and  
2 working lands, we can begin to think about how to  
3 compensate for any remaining emissions in order to reach  
4 carbon neutrality. The initial modeling results I'm  
5 presenting today were first shown at a public workshop  
6 last week. There may be slight adjustments to these  
7 results in the Draft Scoping Plan.

8 First, I'll present the AB 32 sources scenarios  
9 followed by the natural and working lands scenarios.

10 --o0o--

11 ISD AIR RESOURCES ENGINEER HAND: In addition to  
12 a reference, or business-as-usual scenario, we modeled  
13 four draft energy and technology scenarios. Two of the  
14 scenarios achieve carbon neutrality by 2035 and two by  
15 2045.

16 Alternative 1 nearly phases out fossil and  
17 biomass combustion completely across the economy. This  
18 alternative includes limited engineered carbon removal to  
19 achieve carbon neutrality by 2035. This alternative  
20 includes ambitious innovation in electric technology and  
21 aggressive consumer adoption trends.

22 Alternative 2 implements a full suite of  
23 technology options, including engineered carbon removal at  
24 a rapid pace, in order to reduce emissions as much as  
25 possible and achieve carbon neutrality by 2035.



1           Alternative 3 uses a broad portfolio of existing  
2 and emerging fossil fuel alternatives and includes  
3 achievement of Executive Order N-79-20, eliminating  
4 internal combustion engines throughout the transportation  
5 sector as much as possible.

6           Alternative 4 relies on existing and some  
7 emerging technologies with slower deployment and consumer  
8 acceptance rates. It reflects a higher reliance on carbon  
9 dioxide capture and removal technologies to achieve carbon  
10 neutrality by 2045 then alternative three.

11                   --o0o--

12           ISD AIR RESOURCES ENGINEER HAND: Transitioning  
13 or economy away from fossil fuels is truly a  
14 transformation of our energy system, and this is evident  
15 in all four alternatives. Electrification is a  
16 cornerstone of each alternative. The speed at which we  
17 need to expand zero carbon electricity capacity is  
18 unprecedented. For example, building the necessary solar  
19 capacity estimated for each alternative exceeds our recent  
20 annual installation rate of 2.7 gigawatts. Similarly, the  
21 battery capacity additions needed each year greatly  
22 exceeds the historic rate of 0.3 gigawatts.

23           All of the alternatives include a transition from  
24 gasoline or diesel-powered vehicles to zero-emission  
25 vehicles over time. Because Alternative 1 eliminates

1 combustion by 2035, this means that millions of vehicles  
2 will need to be retired early. For example, 16 million  
3 light-duty vehicles and 1.4 million medium- and heavy-duty  
4 vehicles would be removed from California's roads by 2035.

5 For context, the U.S. Cash for Clunkers Program  
6 implemented a few years ago cost \$3 billion and retired  
7 690,000 vehicles. Early vehicle retirement is largely  
8 avoided in the other alternatives by allowing an  
9 end-of-life transition, but it -- this extends the need  
10 for liquid petroleum fuel.

11 Similarly, eliminating combustion in homes by  
12 2035 in Alternative 1 requires early retirement of  
13 millions of gas appliances to be replaced with electric  
14 appliances. Again, Alternatives 2, 3, and 4 retain  
15 natural gas supply to allow this transition to electric  
16 appliances to occur as the gas appliances reach their end  
17 of life.

18 In addition to the electricity -- or in addition  
19 to electricity, hydrogen becomes a primary alternative  
20 fuel for the transportation sector. The quantity of  
21 hydrogen needed in each of the alternatives to supply  
22 California's projected demand is significant and it will  
23 also need to be provided by low-carbon sources.

24 One approach to creating hydrogen involves  
25 electrolysis. If all of the hydrogen needed in each

1 alternative was produced with solar-powered electrolysis,  
2 we would need an additional 31 to 47 gigawatts of solar  
3 capacity. This level of solar-powered electrolysis  
4 represents about 40 to 50 percent of our current electric  
5 generation capacity.

6 The need for petroleum refining in California  
7 declines as fewer and fewer internal combustion engine  
8 vehicles remain. As I mentioned, all ICE vehicles are  
9 retired by 2035 in Alternative 1, therefore refining  
10 operations cease.

11 Alternative 2 accelerates ZEV adoption equally  
12 fast without early retirements of vehicles resulting in 25  
13 percent of today's refining capacity remaining in 2035 and  
14 eight percent remaining in 2045.

15 Alternative 4 has the slowest ZEV adoption rate,  
16 and therefore retains the most refining capacity of the  
17 four alternatives.

18 To reduce remaining combustion emissions in each  
19 alternative, we apply carbon capture and sequestration  
20 technology to high temperature industrial operations like  
21 cement and to refineries. In Alternative 1, industrial  
22 combustion emissions captured with CCS are less than one  
23 million metric ton per year. In the other alternatives,  
24 CCS is applied to refineries along with some industrial  
25 plants. The quantity of CCS needed is related to the

1 quantity of refining capacity remaining. CCS related to  
2 dispatchable power for grid reliance and for producing  
3 renewable hydrogen with biogas is not included in this  
4 slide.

5           Finally, after all of the direct emissions  
6 reductions we envision for the four alternatives, there  
7 are residual emissions. Even Alternative 1, which nearly  
8 eliminates combustion of fossil fuels, still has residual  
9 non-combustion emissions like methane. The quantity of  
10 residual emissions in each scenario is related to the pace  
11 at which fossil fuels are shifted to alternative energy  
12 sources.

13           In Alternative 1, the transition to ZEVs and  
14 electric appliances is aggressive, but it's not complete  
15 in 2035. To reach carbon neutrality would require over a  
16 hundred million metric tons of carbon removal from the  
17 atmosphere. Because Alternative 3 and 4 target carbon  
18 neutrality by 2045, there are no residual emissions to  
19 compensate in 2035, but residual emissions remain in 2045.  
20 Moreover, if we did not pursue CCS on the large emitters,  
21 more carbon dioxide removal would be needed to capture  
22 those emissions from the ambient air.

23                           --o0o--

24           ISD AIR RESOURCES ENGINEER HAND: Reliance on  
25 fossil fuels is drastically reduced in all four

1 alternatives as shown in this traffic. The brown, blue,  
2 and black colors reflect fossil fuel energy demand in 2020  
3 on the left compared to each of the four alternatives in  
4 2035 and 2045.

5 Alternative 1 nearly eliminates fossil fuel  
6 energy demand in 2035 by phasing out combustion in  
7 vehicles, homes, buildings, and most industrial  
8 applications.

9 Alternatives 2, 3, and 4 allow the transition  
10 away from fossil fuels to occur at a pace based on  
11 end-of-life replacement of equipment or phased  
12 transition -- transition to alternative fuels.

13 Hydrogen, biofuels, and biomethane use grows to  
14 provide energy for hard-to-decarbonize sectors like  
15 aviation and high temperature industrial processes.  
16 Electricity, which is not shown on this figure, becomes  
17 the primary energy source. And reducing fossil fuel  
18 supply of electricity is a key aspect of each alternative.

19 The next slides show how this transition away  
20 from fossil fuels is completed in each -- is accomplished  
21 in each sector.

22 --o0o--

23 ISD AIR RESOURCES ENGINEER HAND: Liquid  
24 petroleum fuels, gasoline and diesel shown in brown, are  
25 the primary source of energy for transportation today.

1 Each of the alternatives ramps up sales of zero-emission  
2 vehicles that rely on electricity and hydrogen, shown in  
3 light blue and pink, and expand reliance on biofuels to  
4 reduce demand for petroleum.

5           The overall energy demand for transportation is  
6 reduced in the near term, along with reductions in vehicle  
7 miles traveled, or VMT. Efficiency gains from electric  
8 drivetrains, compared to internal combustion engines, also  
9 contribute to lower overall energy demands.

10           Alternative 1 phases out combustion in 2035 with  
11 early retirement to millions of internal combustion engine  
12 vehicles, such that only ZEVs are on the road.  
13 Alternatives 2, 3, and 4 replace vehicles at end of life  
14 resulting in continued dependence on liquid petroleum  
15 fuels or biofuels as the transition proceeds.

16           The year in which 100 percent of vehicle sales  
17 are ZEVs dictates the pace of the transition and the level  
18 of remaining petroleum demand in 2045. Reaching 100  
19 percent ZEV sales earlier results in less demand for  
20 petroleum later.

21           The fossil fuel combustion reductions included in  
22 all of these alternatives will significantly reduce the  
23 concentration of combustion-associated air pollutants  
24 throughout the state. For example, Alternative 3 achieves  
25 the Governor's Executive Order to eliminate internal

1 combustion engines throughout the transportation sector as  
2 much as possible.

3 Liquid biofuels, particularly directed toward  
4 production of sustainable aviation fuel, provide energy  
5 for aviation, rail, and other end uses that are difficult  
6 to electrify.

7 Biomethane transitions to other sectors, but  
8 continues to play a limited role as a transportation fuel.  
9 The use of biofuels is restricted in Alternative 1 in  
10 concert with minimizing fuel combustion, and it is  
11 expanded in Alternative 4, which has the slowest pace of  
12 ZEV adoption.

13 --oOo--

14 ISD AIR RESOURCES ENGINEER HAND: The number of  
15 light-duty ZEVs on California's roads needs to grow  
16 dramatically over the coming decades to achieve the  
17 reductions in petroleum demand in each of the  
18 alternatives. There are about 29 million  
19 internal-combustion-engine LDRs on our roads today and  
20 approximately one million ZEVs.

21 The steep increase in number of ZEVs in the  
22 yellow line for Alternative 1 reflects the phaseout of  
23 combustion and early retirement of vehicles, such that the  
24 entire population of LDVs are ZEVs by 2035.

25 Alternative 2, 3, and 4 steadily increase the

1 number of ZEVs relative to the BAU reference. The BAU  
2 reference reflects a case where no additional policies or  
3 incentives accelerate the ZEV adoption.

4 The Governor's Executive Order for 100 percent  
5 sales of ZEVs by 2035, in the green line for Alternative  
6 3, leads to 11 million ZEVs by 2035. This means that  
7 there will still be millions of light-duty vehicles that  
8 depend on gasoline in 2035.

9 --o0o--

10 ISD AIR RESOURCES ENGINEER HAND: Most of the  
11 gasoline and diesel consumed by vehicles in California is  
12 refined in California, and California produces a  
13 substantial portion of the fuel refined in the State. The  
14 demand for petroleum fuel is directly related to the  
15 number of vehicles that continue to rely on gasoline and  
16 diesel. As the number of ZEVs increase, the demand for  
17 petroleum and the associated greenhouse gas emissions  
18 decrease.

19 With the phaseout of combustion by 2035 in  
20 Alternative 1, emissions from oil and gas extraction and  
21 from petroleum refining drop to zero.

22 For the other alternatives, extraction emissions  
23 decline over time as the demand for petroleum fuel drops  
24 and the number of ZEVs grows. Alternative 3 includes a  
25 planned phaseout of extraction operations by 2045. The



1 portion of crude oil needed to meet remaining demand in  
2 2045 would need to be imported.

3           Refining GHG emissions also decline over time,  
4 along with decreased demand for petroleum fuel for  
5 Alternatives 2, 3, and 4, as shown in the dotted lines in  
6 the figure on the right. The addition of carbon capture  
7 and sequestration technologies to refining operations by  
8 2030 substantially reduces refining emissions in the near  
9 term as shown in the solid lines.

10           Emissions continue to decrease after CCS  
11 installation as refining production tracks the reduced  
12 demand for petroleum. If we decouple petroleum production  
13 from demand and ratchet down on the supply more  
14 aggressively, we would need to import petroleum to meet  
15 in-state demand. This situation would be leakage for the  
16 sector.

17                           --o0o--

18           ISD AIR RESOURCES ENGINEER HAND: Fossil fuels  
19 used in California's industrial sector are primarily  
20 natural gas and other fossil gases used in refining  
21 operations. Each of the alternatives represents a  
22 transition of industrial operations to equipment powered  
23 by electricity, hydrogen, or biofuels to reduce demand for  
24 natural gas. Blending hydrogen and biomethane into the  
25 pipeline -- pipeline, also displaces fossil natural gas.

1           The overall energy demand for industrial  
2 activities is reduced primarily as refining operations  
3 decrease, but efficiency gains from electrification and  
4 operational improvements also contribute to reduced energy  
5 demand.

6           Electricity is a suitable alternative for  
7 industrial processes that require low-temperature heat,  
8 but it may be a more expensive or technically challenging  
9 alternative to provide medium and high temperatures for  
10 industries like cement, steel, and glass.

11           Hydrogen combustion, through dedicated pipelines  
12 to serve industrial clusters and blended into the pipeline  
13 with natural gas, can provide higher temperature heat  
14 where on-site combustion may be needed. All four  
15 alternatives assume that CCS is used to capture combustion  
16 emissions from cement plants that continue to rely on  
17 fossil fuel sources.

18           The pace at which industrial applications are  
19 transitioned to electricity or to equipment designed for  
20 hydrogen combustion varies across each alternative.  
21 Alternative 1 relies almost completely on electricity to  
22 meet industrial energy needs to reduce combustion.

23           Alternatives 2, 3, and 4 achieve different levels  
24 of electrification and conversion to equipment for  
25 hydrogen combustion to reduce reliance on natural gas.

1 Alternative 4 retains the most legacy equipment that uses  
2 natural gas.

3 --o0o--

4 ISD AIR RESOURCES ENGINEER HAND: Natural gas is  
5 also the primary fossil fuel used for space and water  
6 heating, cooking, and clothes drying in our homes and  
7 businesses. Each of the alternatives ramps up sales of  
8 electric appliances to reduce demand for natural gas.  
9 Blending hydrogen and biomethane in the pipeline also  
10 displaces natural gas consumption in buildings.

11 Across all alternatives, overall energy demand is  
12 reduced with efficiency gains from electric heat pumps and  
13 traditional energy efficiency measures. Phasing out  
14 combustion by 2035 in Alternative 1 leads to early  
15 retirement of millions of gas appliances. Alternative 2,  
16 3, and 4 replace appliances at end of life resulting in  
17 continued dependence on natural gas as the transition  
18 proceeds. By 2045, about 90 percent of the building  
19 energy demand is electrified in Alternatives, 2, 3 and 4.

20 --o0o--

21 ISD AIR RESOURCES ENGINEER HAND: Electricity is  
22 the primary alternative to fossil fuels currently used in  
23 transportation buildings and many industrial activities.  
24 While California has actively reduced dependence on fossil  
25 fuel for electricity generation over the past decade.

1 Fossil fuels, primarily natural gas, still supply about 45  
2 percent of electricity generation serving California.

3           Electricity sector modeling for the Scoping Plan  
4 alternative aligned with previous work done by E3, CARB,  
5 and the State's energy agencies under SB 100. SB 100 aims  
6 to achieve 60 percent renewable electricity generation by  
7 2030 and 100 percent renewable and zero carbon retail  
8 sales by 2045, which will be accomplished by installing  
9 record levels of solar and wind generation each year.

10           Even with this increase in renewable generation,  
11 reliability concerns require some amount of electricity  
12 generation that can be cycled on and off as needed from  
13 gas generation. Alternative 1 nearly eliminates  
14 combustion in electricity production through reliance on  
15 hydrogen fuel cells combined with renewable electricity  
16 generation. Electric loads increase about 80 percent  
17 relative to today to accommodate the sharp increase in  
18 demand to supply the ZEVs, electric appliances, and  
19 industrial demand.

20           Alterantives 2, 3, and 4 include a broader range  
21 of technology options to produce zero carbon electricity  
22 to meet retail sales while meeting system constraints.  
23 Load growth is slower in these alternatives, but it still  
24 increases 60 to 80 percent relative to today by 2045.  
25 It's important to note that additional electricity

1 generation beyond what is shown here is likely needed to  
2 produce hydrogen or support direct air capture of carbon  
3 dioxide.

4 --o0o--

5 ISD AIR RESOURCES ENGINEER HAND: Greenhouse gas  
6 emissions don't only originate with combustion of fossil  
7 fuel. Methane, hydrofluorocarbons, or HFCs, and other  
8 greenhouse gases contribute to climate change. These  
9 non-combustion emissions are particularly challenging to  
10 reduce, and in many cases cannot be eliminated.

11 Methane emissions are reduced in line with the SB  
12 1383 target by 2030 in all four alternatives with  
13 continued reductions through 2045. The four alternatives  
14 employed different strategies to arrive at the same level  
15 of methane reduction by 2030. Organic waste, shown in  
16 green, is diverted from landfills and converted to fuel at  
17 the same level in all scenarios.

18 Fugitive emissions from oil and gas operations  
19 and pipelines are essentially eliminated in Alternative 1  
20 as the gas grid is retired and oil and gas extraction  
21 phase out. In Alternatives 2 and 3, additional reductions  
22 exceed those anticipated by the current oil and gas  
23 regulation.

24 Methane emissions from dairy and livestock  
25 operations are addressed with different strategies in each

1 alternative, balancing energy production from methane  
2 captured, manure management, enteric emissions, and herd  
3 size reductions in excess of historic levels. Alternative  
4 1 emphasizes manure management, herd size reduction rates,  
5 and enteric emission mitigation, while Alternative 2  
6 relies most heavily on methane captured for energy  
7 production.

8           There is an opportunity to introduce low global  
9 warming potential refrigerants as building retrofits and  
10 newly constructed buildings transition to electric  
11 appliances, although this may have high costs.

12                           --o0o--

13           ISD AIR RESOURCES ENGINEER HAND: The modeling  
14 results show that even after we transition to alternative  
15 fuels, there will be residual emissions in all four  
16 alternatives. These emissions are primarily associated  
17 with methane in the agriculture sector, combustion  
18 emissions remaining in the electricity and industrial  
19 sectors, transportation fuels to meet remaining demand  
20 from internal combustion engine vehicles, and high global  
21 warming potential HFCs.

22           In order to achieve carbon neutrality, these  
23 residual emissions must be compensated, by carbon dioxide  
24 removal from the atmosphere to get to zero emissions. To  
25 be clear, we are modeling scenarios that first push on

1 clean fuels and technology and carbon dioxide removal is  
2 second in that loading order. The extent to which we will  
3 need CDR depends on how successful we are at building  
4 clean energy production and infrastructure and how quickly  
5 we deploy clean technology.

6 As noted earlier, there are two approaches to  
7 carbon dioxide removal, nature-based solutions and  
8 technological carbon dioxide removal. I will share the  
9 results of our natural and working lands assessment of  
10 carbon emissions and sequestration next. However, we do  
11 find that both nature-based and technological carbon  
12 dioxide approaches will be necessary for California to  
13 achieve carbon neutrality no later than 2045.

14 --o0o--

15 ISD AIR RESOURCES ENGINEER HAND: Recognizing the  
16 importance of the State's lands for our climate efforts,  
17 Governor Newsom issued an Executive Order in October 2020  
18 directing CARB to include a target for natural and working  
19 lands in support of carbon neutrality as a part of this  
20 Scoping Plan.

21 Natural and working lands has been a part of  
22 California's Scoping Plan since the first one in 2008. At  
23 that time, however, only forests were considered and only  
24 one study was used to identify the five million metric ton  
25 carbon sequestration rate goal.

1           The next Scoping Plan called for a more thorough  
2 look at forest lands, which resulted in California's  
3 forest carbon plan. The forest carbon plan did not set  
4 any carbon targets, but it does provide a lot of valuable  
5 information on actions and mechanisms that California can  
6 use within forests.

7           The 2017 Scoping Plan update took the next step  
8 towards developing a comprehensive natural and working  
9 lands carbon target. After the 2017 Scoping Plan was  
10 adopted, CARB, along with the California Department of  
11 Food and Agriculture and the California Natural Resources  
12 Agency, developed the draft Natural and Working Lands  
13 Implementation Plan.

14           Through this effort, it was calculated that  
15 California could reduce emissions from natural and working  
16 lands by 15 to 20 million metrics tons of carbon -- of CO2  
17 equivalent per year by 2030.

18           Now, as we look to achieving carbon neutrality no  
19 later than 2045 and seek to better understand both the  
20 potential emissions and emission reductions possible from  
21 natural and working lands, we have undertaken the most  
22 advanced modeling for natural and working lands to date.

23           This is really groundbreaking work and the first  
24 time this level of assessment of natural and working lands  
25 has been undertaken by any government for identifying



1 carbon targets and climate goals

2 --o0o--

3           ISD AIR RESOURCES ENGINEER HAND: Just as on the  
4 industry and energy side, CARB staff have modeled a  
5 business-as-usual scenario, as well as four alternative  
6 scenarios with different levels of climate action for  
7 natural and working lands. In this case, climate action  
8 refers to different levels of forest management and fuels  
9 reduction, regenerative agricultural practices, urban tree  
10 canopy expansion, and a whole host of other actions we can  
11 take to address climate change.

12           These scenarios reflect the input we have  
13 received from stakeholders and the public, as well as  
14 working with our agency partners and span a wide range of  
15 potential levels of action. Each scenario has an  
16 overarching objective that informs the level of  
17 management.

18 --o0o--

19           ISD AIR RESOURCES ENGINEER HAND: For this  
20 assessment, we are trying to model every major carbon pool  
21 and ecosystem in the state of California. This is a list  
22 of the ecosystems that we were able to include in our  
23 modeling and the models associated with that assessment.

24           No single model can simulate all of the dynamics  
25 that we are interested in for all of the land types, and

1 so you can see that we used a wide assortment of different  
2 models. This is because each ecosystem has very different  
3 ecological, biological, and other dynamics that require  
4 special consideration.

5 For each land type, we used these models to  
6 simulate the effect of varying levels of climate action  
7 that we identified in consideration of and consultation  
8 with the public and our agency partners.

9 For forests, shrublands and grasslands for  
10 example, we were particularly interested in being able to  
11 quantify the GHG emissions from wildfire, and so we chose  
12 a model that allows us to estimate potential fire  
13 emissions on these landscapes. We also wanted to  
14 understand how various levels of management would impact  
15 fire emissions, and so we ran scenarios with a range of  
16 land management intensities.

17 We conducted a similar analysis across each  
18 landscape assessing the carbon and GHG benefits of  
19 different levels of management actions for wetlands, urban  
20 forestry, croplands, and deserts.

21 --o0o--

22 ISD AIR RESOURCES ENGINEER HAND: Now, I will  
23 show a few example results from our natural and working  
24 lands modeling. Displayed are the results for the carbon  
25 stock within annual cropland soil. This graph is of

1 carbon stock, not emissions. So a positive trend means  
2 that more carbon is getting stored in soil.

3 For agriculture, for Scenario 1, we modeled the  
4 impact of applying the maximum rate of healthy soils  
5 practices physically possible as quantified by CDFA, as  
6 well as achieving 30 percent of total agriculture in  
7 annual croplands being organic by 2045.

8 Then the other scenarios have a tiered-down  
9 approach to quantify the impacts of varying levels of  
10 action. And to add some context, Scenario 1 represents a  
11 10X increase in healthy soils practices from current  
12 levels.

13 You can see here that in the business-as-usual  
14 scenario, which includes no healthy soils practices,  
15 annual croplands will be net emitters into the future.  
16 However, our results indicate that with aggressive climate  
17 action, these lands can sequester carbon over the long  
18 run.

19 --o0o--

20 ISD AIR RESOURCES ENGINEER HAND: This slide  
21 again represents annual croplands. However, this graph  
22 shows emissions when N2O emissions are also taken into  
23 account. In this graph, values below the zero line mean  
24 increasing annual emissions. This graph shows that even  
25 though in some scenarios annual croplands can sequester

1 carbon into their soils when N2O emissions are taken into  
2 account, croplands are net emitters of CO2e.

3           However, with climate action and regenerative  
4 agricultural practices, these emissions can be reduced and  
5 the curve can be bent towards carbon neutrality.

6                               --o0o--

7           ISD AIR RESOURCES ENGINEER HAND: This slide  
8 shows the results of forest modeling. Forests hold 85  
9 percent of the state's natural and working lands carbon  
10 stock or existing carbon and is by far the largest carbon  
11 pool in the state. For this reason, the modeling done to  
12 assess forests is our most advanced natural and working  
13 lands modeling efforts. This modeling dynamically  
14 includes wildfires, drought impacts, management effects,  
15 and hydrology. This graph shows carbon stocks above and  
16 below ground as well as within harvested wood products  
17 carbon pools. Negative trends indicate decreasing carbon  
18 within the system and increasing emissions of carbon into  
19 the atmosphere.

20           For the forest sector, we modeled the impact of  
21 no further management after 2025 in Scenario 1, so that is  
22 to say what if we no longer cut or intentionally burn any  
23 trees, shrubs, or grasses anymore. We have not -- we have  
24 also modeled the future impact of business as usual, which  
25 is about 250,000 acres of forest management per year, as

1 well as modeling 1 million, 2.5 million, and 5 million  
2 acres of management per year. For context, the State's  
3 current policy objectives is to treat 1 million acres  
4 annually.

5 Modeling results showed that under all scenarios,  
6 forests will be net emitters into the future. However,  
7 with increasing management and fuels reduction, we can  
8 reduce our wildfire emissions while not substantially  
9 impacting our carbon stock. Reducing wildfire emissions  
10 in California will have significant benefits, particularly  
11 in terms of air quality and health.

12 --o0o--

13 ISD AIR RESOURCES ENGINEER HAND: As part of the  
14 Scoping Plan, CARB staff conducted a meta-analysis and  
15 literature review to catalogue and quantify what previous  
16 research has identified as the future of California's  
17 natural and working lands carbon.

18 This graph shows the combined results from CARB's  
19 Scoping Plan modeling laid on top of the results of this  
20 meta-analysis and alongside the natural and working lands  
21 inventory trend line. You can see that previous research  
22 indicates a probable decrease of carbon stocks into the  
23 future. The CARB natural and working lands carbon  
24 inventory indicates that we are currently on the low end  
25 of that trajectory. And CARB's Scoping Plan modeling just

1 presented is in line with previous research in indicating  
2 a probable decrease in carbon stocks going into the  
3 future. However, even though under all scenarios, natural  
4 and working lands modeling indicates decreased carbon  
5 stocks, management can increase carbon stocks from the BAU  
6 trajectory, reduce GHG emissions from lands, and improve  
7 ecosystem and public health.

8           We also know that uncertainty exists about future  
9 climate and the impacts that it may have on our ecosystem,  
10 so it is important that the State take decisive and  
11 aggressive action to improve and diversify ecosystem  
12 structures and management. Modeling and collaborative  
13 work we have done with our sister agencies highlight the  
14 importance of increasing the pace and scale of natural and  
15 working land actions to ensure that our ecosystems are  
16 equipped to withstand future climate change and that they  
17 continue to provide the services that both nature and  
18 society depend upon for survival.

19                           --o0o--

20           ISD AIR RESOURCES ENGINEER HAND: As we go about  
21 assessing the contribution of natural and working lands to  
22 carbon neutrality, we must not only look at long-term  
23 trends, but on short-term sequestration and emission  
24 rates. This graph shows five-year moving averages at 2  
25 different a time slices for each scenario for the lands

1 and actions we modeled. Additionally, this graph shows  
2 the relative contribution of each land type to the overall  
3 sequestration or emissions rate.

4 In this graph, negative values represent  
5 emissions, while positive values represent sinks of  
6 carbon. First, you can see that in 2035 our modeling  
7 indicates an overall source of emissions for most  
8 scenarios. While in 2045, all scenarios are sinks. This  
9 demonstrates natural variability within the sector.

10 You can also see in this graph that forests play  
11 the dominant role in determining the contribution that  
12 natural and working lands can have on carbon neutrality,  
13 followed by shrublands. This indicates the need for more  
14 climate action in these lands especially to help us  
15 achieve carbon neutrality over both the short and long  
16 term.

17 There are also a number of landscapes and actions  
18 for which the GHG benefits increase as we increase action.  
19 The modeling shows that we can achieve more carbon  
20 benefits and GHG reductions as we scale up wetland  
21 restoration, healthy soils practices, organic farming,  
22 urban forestry, and land protections.

23 It is important to remember, however, that carbon  
24 is not the only aspect to consider when identifying how  
25 well a scenario performs under climate change. So as you

1 look at these scenarios keep in mind that even though a  
2 scenario might have a high sequestration rate, at a given  
3 time, it may also have high wildfire emissions and worse  
4 public health outcomes.

5           Finally, we know that the ability of natural and  
6 working lands to support carbon neutrality goes beyond the  
7 specific lands and management actions we modeled here, and  
8 that there are additional strategies that can provide more  
9 carbon sequestration and GHG reductions than what we have  
10 shown here.

11                               --o0o--

12           ISD AIR RESOURCES ENGINEER HAND: In summary, we  
13 find that it is possible to drastically reduce fossil fuel  
14 combustion, which will lead to air quality and GHG  
15 benefits. This can be accomplished with aggressive action  
16 in every sector to introduce alternative fuels and  
17 technologies.

18           Even after all the direct emissions are  
19 quantified residual emissions persist, primarily from  
20 short-lived climate pollutants. Achieving this  
21 transformation of our energy supply and infrastructure  
22 will require unprecedented rates of deployment. This will  
23 impact planning and operations in multiple sectors, as  
24 well as require significant coordination across agencies  
25 and levels of government on actions such as permitting.



1           Alternative fuels and technologies are available  
2 today, but they are somewhat limited in number. It will  
3 be important to keep clean energy options open.

4           On the natural and working lands side, our  
5 assessment indicates that decisive and aggressive climate  
6 action is needed to improve ecosystem climate resilience.  
7 Improved ecosystem climate resilience protects ecosystems  
8 against future climate change disruption, ensures their  
9 provision of services to nature and society, and protects  
10 communities from the negative impacts of climate change.

11           High levels of actions on forests can decrease  
12 wildfire risks and improve forest health and our modeling  
13 indicates that this can be accomplished without  
14 substantially negatively impacting carbon stock.

15           Additionally, increasing actions on other lands  
16 can improve carbon storage and reduce emissions from those  
17 sectors. In some land types, emissions benefits from  
18 climate action can occur faster than others. For example,  
19 avoiding land conversion away from natural and working  
20 systems can immediately preserve that carbon, reducing  
21 fertilizer application, or restoring wetlands can have  
22 immediate emissions reductions. However, other systems  
23 require time for climate benefits to build upon  
24 themselves, such as action within forests.

25                           --o0o--

1           ISD AIR RESOURCES ENGINEER HAND: In the  
2 following slides, I'll touch briefly on some of the work  
3 the EJ Advisory Committee is doing to inform the Scoping  
4 Plan. The Committee has been meeting twice a month and  
5 will continue to contribute multi-day monthly efforts  
6 through the end of the Scoping Plan process.

7           One joint meeting between the Committee and the  
8 Board was held earlier this month to discuss the  
9 Committee's draft recommendations, and another joint  
10 meeting is schedule in September. The EJ Advisory  
11 Committee will use their regular meetings to gather  
12 information and obtain technical support.

13                   --o0o--

14           ISD AIR RESOURCES ENGINEER HAND: The Committee  
15 continues to meet in work groups on specific topics in  
16 order to inform their recommendations. At Board meetings  
17 and public Scoping Plan workshops, the EJ Advisory  
18 Committee members are invited to share perspectives after  
19 staff presentations. In the event of a workshop with  
20 panel speakers, Committee members are invited to  
21 participate on a panel.

22                   --o0o--

23           ISD AIR RESOURCES ENGINEER HAND: EJ Advisory  
24 Committee Members engage local communities through events  
25 supported by CARB. These community workshops are intended

1 to inform Scoping Plan recommendations. These community  
2 engagement events are supported with CARB funding and  
3 logistical support.

4 --o0o--

5 ISD AIR RESOURCES ENGINEER HAND: One example of  
6 a community engagement workshop occurred in February,  
7 hosted by the San Joaquin Valley EJ Advisory Committee  
8 members. Over 100 participants joined the virtual meeting  
9 to share ideas and priorities.

10 The next events are planned for May.

11 --o0o--

12 ISD AIR RESOURCES ENGINEER HAND: We are  
13 conducting a number of analyses to evaluate the  
14 alternative scenarios. Now that we have these  
15 alternatives scenarios that illustrate how we might use  
16 energy in the future, we can begin to evaluate the impacts  
17 of achieving that transition away from fossil fuels. The  
18 characteristics in each of alter -- of these alternatives  
19 will result in different health and economic outcomes. We  
20 are beginning similar evaluations of the land management  
21 strategy scenarios as well.

22 We will explore cost of policies, the social cost  
23 of carbon, and estimated air quality benefits as required  
24 by AB 197. In addition, we will evaluate public health,  
25 economic, and environmental aspects of the Scoping Plan

1 alternatives.

2 --o0o--

3 ISD AIR RESOURCES ENGINEER HAND: There are many  
4 activities slated for the next two months in preparation  
5 for release of the Draft Scoping Plan. In April, there  
6 will be a public workshop with air quality, public health,  
7 and economic modeling results. We are also planning a  
8 transportation sector focused workshop. In May, we plan  
9 to release the Draft Scoping Plan for public comment, and  
10 in June we will present the Draft Scoping Plan to the  
11 Board. The Board may provide additional direction to CARB  
12 staff to inform the Final Scoping Plan.

13 The Environmental Justice Advisory Committee  
14 continues to meet regularly. Community meetings are being  
15 scheduled to seek input and provide information on how  
16 community members can influence the Scoping Plan.

17 Based on Board direction, additional workshops,  
18 EJ Advisory Committee meetings and public input, updated  
19 modeling will be conducted this summer in preparation for  
20 assembling the proposed Final Scoping Plan.

21 --o0o--

22 ISD AIR RESOURCES ENGINEER HAND: In terms of the  
23 overall schedule, staff will present the Draft Scoping  
24 Plan to the Board in June. There will be another joint  
25 EJAC Board meeting around September and staff is targeting

1 bringing the proposed Final Scoping Plan to the Board for  
2 adoption by the end of 2022.

3 Chair Randolph, that in -- that concludes the  
4 staff presentation. Before inviting guest speakers, does  
5 the Board have any questions.

6 CHAIR RANDOLPH: Not at this time. Why don't you  
7 go ahead and invite the guest speakers.

8 ISD AIR RESOURCES ENGINEER HAND: Okay. Our  
9 first invited speaker is Jared Blumenfeld, California  
10 Secretary of Environmental Protection.

11 Secretary Blumenfeld.

12 CALEPA SECRETARY BLUMENFELD: Hey. Appreciate  
13 the opportunity, yeah. So just for the record, my name is  
14 Jared Blumenfeld and I serve as the Secretary of  
15 California's EPA. And Chair Randolph and CARB Board  
16 members, it's a distinct privilege to be with you today to  
17 help kick-off the discussions on the modeling for the 2022  
18 Scoping Plan.

19 As you each know, we live in extremely  
20 challenging times. And when I think of the things that  
21 I'm most excited about, the Scoping Plan process rises to  
22 the top. The reason it gives me hope is because it  
23 proposes pathways out of the darkness, it's intentional,  
24 it's based on community voices and science, and we're not  
25 waiting to solve the planet's largest crisis. We're

1 meeting the moment with the urgency it demands. And like  
2 cartographers of yesteryear we're charting a course past  
3 the horizon's edge.

4 I want to start by thanking Richard Corey and  
5 Rajinder Sahota, who, with their incredible teams at CARB  
6 and the contracting folks we just heard from, have created  
7 this multi-faceted three-dimensional decision support  
8 tool. This endeavor has required CARB and many others  
9 working countless weekends and late nights, and is really  
10 important to me that we acknowledge the people and  
11 government who are truly making a difference.

12 We're not going to solve the climate crisis  
13 without solving the crisis of inequality plaguing  
14 California and the planet. By achieving a quality of  
15 opportunity, a quality of the fundamental right to breathe  
16 clean air, drink clean water, and live on land  
17 uncontaminated by toxic chemicals, we will have the  
18 foundation upon which the solutions we see can be  
19 implemented.

20 Before we can be trusted as a partner of  
21 communities, we must evidence our ability to listen  
22 empathize and develop new models of power sharing. And  
23 I'm so grateful to the EJAC for your work as a catalyst of  
24 paradigm change.

25 I know I personally can be exhaustingly slow to

1 understand, slow, and even uncomfortable to shift my  
2 perspectives so that I can even meet you halfway. And  
3 yet, together we have all come a long way. Together, we  
4 also have a long way to go, but together we're stronger  
5 against the forces that want to keep polluting our  
6 communities.

7           With this Scoping Plan, I will be focused on the  
8 key actions that will make the most difference for the  
9 greatest number of vulnerable Californians.

10           We all want the Scoping Plan to be everything it  
11 can be, but it's also important to define what it is not.  
12 The Scoping Plan will not prescribe specific policies,  
13 actions, or funding decisions. The Scoping Plan is the  
14 beginning not the end of the a process. The Scoping Plan  
15 will require regulations, and laws, and Executive Orders,  
16 and significant funding to bring it to life. All those  
17 processes will engage the public and be informed by new  
18 innovations, changing realities on the ground, and by  
19 everyone's ideas.

20           The scale of the opportunity and the scale of the  
21 challenge is staggering. There are a few things that  
22 stand out for me from the modeling. First of all, the  
23 scenarios modeled drastically reduce our dependence on  
24 fossil fuels. As Governor Newsom said in this year's  
25 State of the State quote, "Drilling even more oil only

1 leads to even more extreme weather, more extreme drought,  
2 more wildfire. Our nation-leading climate investments  
3 this year's budget proposes 38 billion will ensure that  
4 other innovations will surely follow". He continued, "By  
5 not recreating the 20th century by extraction more oil but  
6 extracting new ideas, drilling for new talent, by running  
7 our economy on a carbon-free engine".

8           Secondly, getting to our 2030 and carbon  
9 neutrality targets will not be easy. Every single sector  
10 and subsector will have to make major reductions and/or  
11 increase carbon sequestration. At the same time, every  
12 single sector must be part of the solution. And with a  
13 concerted effort, as we just heard, on natural and working  
14 lands, we'll have fewer emissions and sequester more  
15 carbon than today.

16           Our energy and industrial sectors will similarly  
17 drive down their emissions. There are, as we know, no  
18 silver bullets in achieving these targets. There's no one  
19 sector or one action that can do it alone.

20           Another key takeaway from the modeling is that no  
21 matter what we do to drive down combustion, in every  
22 scenario some emissions will persist in 2045. As a  
23 result, this is not the time to take any tools off the  
24 table. I'm committed to working with all of you in  
25 developing principles that help us effectively and safely



1 deploy new carbon reduction technologies, such as CCS and  
2 direct air capture.

3 California is a leader when it comes to  
4 innovation and we will continue to invest in technological  
5 development. As you new carbon reduction strategies and  
6 technologies come online, they will be taken into account  
7 when the Scoping Plan is updated in 2027.

8 I'm glad that Julie Henderson, Director of the  
9 Department of Pesticide Regulation is also providing  
10 remarks today. Accelerating a system-wide transition to  
11 safer more sustainable ways to manage pests and  
12 strengthening the State's pesticide use enforcement are  
13 top priorities for this administration. Julie's  
14 department is leading the change on both better protecting  
15 public health and the environment, particularly in our  
16 most vulnerable communities.

17 I've heard calls during these meetings for  
18 pesticides to be included in the Scoping Plan. However,  
19 as of now, we don't have evidence that pesticides are an  
20 important source of GHG emissions and we must continue to  
21 focus the Scoping Plan on its purpose, charting our path  
22 to carbon neutrality -- neutrality and assessing our  
23 progress towards our 2030 goals.

24 To those who argue that more research is needed  
25 on the connection between pesticides and GHG emissions, I

1 agree with you, and I'd note that CARB, DPR, and sister  
2 agencies alike will be working on research on this  
3 subject. I also want to acknowledge the incredibly  
4 critical role that other government agencies within  
5 California are playing on developing the Scoping Plan,  
6 from the California Public Utilities Commission, to the  
7 Natural Resources Agency, to C -- to the California Energy  
8 Commission, to GovOps, to the California Department of  
9 Food and Agriculture. Karen Ross, the Secretary, is here  
10 today. All these, and many, many more, led in the  
11 Governor's office by the Governor's Senior Policy Advisor  
12 on Climate, Lauren Sanchez, are coordinating a very, very  
13 large and complex interagency collaboration. And the  
14 number of hours that we can look at our CARB employees and  
15 CARB Board members is being extrapolated out through  
16 government agencies. This really is an all-of-government  
17 approach.

18           Once it's completed, the task of implementing the  
19 Scoping Plan will require all of us working together. We  
20 must act decisively with courage and urgency, so that  
21 communities, ecosystems, and our economy are protected  
22 from the worst impacts of climate change, while building a  
23 more just and equitable society.

24           I really appreciate the opportunity to be here  
25 with you today and I'm looking forward to the discussion.

1 Thank you.

2 ISD AIR RESOURCES ENGINEER HAND: Next. We would  
3 like to invite Virginia Jameson, Deputy Secretary for  
4 Climate and Working Lands at the -- of the California  
5 Department of Food and Agriculture.

6 Deputy Secretary Jameson.

7 CDFA DEPUTY SECRETARY JAMESON: Thank you very  
8 much having me. Hi. My name is Virginia Jameson. And  
9 sorry, Secretary Blumenfeld, you're stuck with me today.  
10 Secretary Ross had a conflict.

11 But thank you. We are grateful to the Air  
12 Resources Board's staff for this first crack at difficult  
13 modeling in the natural and working lands sector and being  
14 so collaborative with CDFA, and Natural Resources Agency  
15 staff throughout the process.

16 Achieving carbon neutrality is an incredible but  
17 necessary challenge. As Secretary Blumenfeld mentioned,  
18 we know that we will have -- need to have all sectors  
19 contribute to our emissions reductions. We are already  
20 seek the impacts of climate change, particularly during  
21 the current climate change induced drought, which is  
22 having such a devastating impact on our farms, ranches,  
23 and environment.

24 The Scoping Plan models we saw today drive home  
25 the message that active management of our landscapes for

1 climate benefits is vital and that there's significant  
2 opportunity for soils and other Climate Smart land  
3 management practices to support California's climate  
4 change goals, and that we will need to increase our  
5 efforts toward measuring, monitoring, and verifying our  
6 efforts to ensure progress.

7           Fortunately, many of our State agencies,  
8 including CDFA, have been developing programs and  
9 initiatives that seek to bolster our natural and working  
10 lands as carbon sinks, such as our Healthy Soils Program.  
11 We stand at the ready to ramp up our deployment of these  
12 efforts and we are confident that our lands are part of  
13 the solution.

14           We've also seen a lot of leadership from our  
15 agricultural sector. Last January, we held a series of  
16 workshops where we received countless ideas climate  
17 actions, what we -- which we put together in a report  
18 called, "Farmer- and Rancher-Led Climate Change  
19 Solutions". These are the folks who are experiencing the  
20 impacts of climate change on a daily basis and they're  
21 also leading the charge to mitigate its impacts and come  
22 up with adaptation and resilient strategies.

23           As the staff presentation also highlighted, we  
24 know that there's still a ways to go to meet the methane  
25 targets called for in statute, but we're making progress

1 now by deploying digesters and other manure management  
2 practices in California that have a proven track record of  
3 success.

4           We are proud that California has the most  
5 ambitious methane reduction goal in the world and our  
6 dairy families are important partners in making those  
7 reductions. Additionally, there are many co-benefits  
8 associated with Climate Smart agricultural practices, like  
9 improving soil water holding capacity, improving air  
10 quality, and increasing yields that will not only continue  
11 to produce nutritious foods for the nation and the world,  
12 but will also make us more resilient to climate change  
13 into the future.

14           In closing, we look forward working with the Air  
15 Resources Board and our stakeholders as we continue to  
16 pursue these opportunities and to participating in future  
17 modeling activities together.

18           Thank you.

19           ISD AIR RESOURCES ENGINEER HAND: Now, Julie  
20 Henderson, the Director of Department of Pesticide  
21 Regulation will make some remarks.

22           DPR DIRECTOR HENDERSON: Good afternoon. My name  
23 is Julie Henderson and I'm the Director the Department of  
24 Pesticide Regulation. I've been in this role since July  
25 of last year, first in an acting capacity and then

1 appointed in December.

2 Before that, I was Deputy Secretary for Public  
3 Policy at CalEPA. Thanks very much for inviting me to  
4 join you today to share information about the actions  
5 we're taking to reduce the use of hazardous pesticides and  
6 to strengthen our enforcement efforts to better protect  
7 the health of all Californians and our environment.

8 Equity and environmental justice and engaging  
9 meaningfully with communities most impacted by pesticide  
10 use are central to our work. And our ongoing  
11 collaboration with CARB, CalEPA, CDFG, and our other  
12 sister agencies provides critical input and support.

13 I'll start with some quick background on our  
14 mission. DPR is responsible for regulating the use of  
15 pesticides in California in agricultural and  
16 non-agricultural settings, so that their use is safe and  
17 avoids harm to communities, workers, and the environment.  
18 We scientifically evaluate all pesticides to assess their  
19 potential health and environmental risks prior to  
20 registration and use in California, and we continue to  
21 evaluate those risks after registration. We oversee  
22 statewide enforcement of pesticide laws that are enforced  
23 locally by the State's 55 county agriculture  
24 commissioners, and we're seeking additional funding in  
25 this year's budget to strengthen those efforts.

1           In addition to your regulatory role, we're  
2 responsible for fostering and accelerating the use of  
3 safer and more sustainable ways of managing pests to  
4 better protect public health, workers, and the  
5 environment. This is our direction for the future and it  
6 requires a system-wide approach that engages all  
7 stakeholders with that focus.

8           So together with CalEPA and CDFG, we convened the  
9 Sustainable Pesticide Management Work Group last year to  
10 recommend pathways and ambitious, targeted, measurable  
11 goals to support and accelerate the system-wide  
12 transition. We anticipate draft comments from the work  
13 group this spring. The work group includes 26 members  
14 from diverse backgrounds including community and tribal  
15 representatives, who bring environmental, social justice,  
16 and farmworker perspectives, conventional and organic  
17 growers, and other representatives from across the  
18 agricultural industry, university researchers, and public  
19 health experts, and government representatives.

20           Effecting this system-wide change will not be  
21 easy and it will take time, but it's critical. It will  
22 require alternative pest management tools and practices.  
23 It will require research to develop those tools. It will  
24 require outreach and education to support farmers of all  
25 sizes moving to more knowledge-intensive, regional, and

1 crop-specific practices that focus on long-term prevention  
2 of pests and the use of the least toxic effective methods  
3 to control them and it will also require incentives to  
4 take risks to move to a new system of operate.

5           We're collaborating closely with the CARB,  
6 CalEPA, CDFA, and the Natural Resources Agency to connect  
7 the work group's goals and recommendations to the State's  
8 natural and working lands, Climate Smart, and Healthy  
9 Soils strategies, and to identify multi-benefit solutions  
10 that address pesticide, air, climate, and water risks.  
11 We're also working together on research related to  
12 connections between pesticides, and healthy soils, and  
13 greenhouse gas emissions.

14           In addition, with supplemental one-time funding  
15 this year, we'll be administering five and a half million  
16 dollars in integrated pest management research grants to  
17 incentivize innovation and outreach and education grants  
18 to promote and expand the adoption of integrated best  
19 management practices.

20           I want to go back to the topic of our equity and  
21 environmental justice work that I mentioned as core to our  
22 mission. We're working closely with AB 617 community  
23 steering committees, CARB, OEHHA, and local air districts  
24 in the communities of Shafter, Eastern Coachella Valley,  
25 and Arvin-Lamont. We conducted pilots for alternative



1 mitigation measures to reduce emissions and potential  
2 exposures to the fumigant 1,3-dichloropropene or 1,3-D in  
3 Shafter and are in the process of developing regulations  
4 to implement those strengthened mitigation measures.

5           We also are in the process of developing a  
6 statewide pesticide application notification system that  
7 grew out of the Shafter community steering committee's  
8 request for notification of pesticide applications. We're  
9 coordinating with CARB, OEHHA, the steering committees,  
10 and local air districts in Eastern Coachella Valley and  
11 Arvin-Lamont on ambient air monitoring to evaluate  
12 potential exposures unique to each community to inform  
13 potential mitigation measures. And in response to each  
14 community's concern regarding engagement at the local  
15 level, we have facilitated conversations between the  
16 residents and steering committees and their local  
17 agricultural commissioners to further interagency  
18 engagement and strengthen relationships at the local  
19 level.

20           We're also beginning a process to develop a  
21 county agricultural commissioner and community engagement  
22 framework in collaboration with community, ag  
23 commissioner, CalEPA, and CARB representatives. We look  
24 forward to this work and our transition to a safer system  
25 of managing pests to ensure that we're protecting all

1 Californians and our environment while supporting  
2 agriculture and the management of pest pressures in  
3 non-agricultural and urban areas.

4           Thanks very much for the opportunity to be here  
5 with you today.

6           ISD AIR RESOURCES ENGINEER HAND: From the  
7 Environmental Justice Advisory Committee, first we will  
8 have Martha Dina Argüello, followed by Sharifa Taylor,  
9 then Connie Cho, and finally Dr. Catherine Garoupa White.

10           MARTHA DINA ARGÜELLO: Hello. Good afternoon.  
11 I'm Martha Dina Argüello the Executive Director of  
12 Physicians for Social Responsibility, Los Angeles. I do  
13 want to add that another EJAC member, Matt Holmes, is also  
14 going to be presenting with us. So thank you again for  
15 this opportunity.

16           As stated in the CARB presentation, the EJAC has  
17 been incredibly busy doing, you know, outreach to  
18 communities, but also working with CARB and the staff to  
19 develop a true environmental justice scenario as reflected  
20 in our recommendations. You know, a lot has been said  
21 about all the work that has been done by the Environmental  
22 Justice Advisory Committee. And as this is not my first  
23 time being on this committee, I continue to be very  
24 concerned about performative engagement versus meaningful  
25 engagement. And to us that meaningful engagement act --

1 actually means we are listened to and see our concerns and  
2 experience reflected in the Scoping Plan.

3           And I think that the scenarios that we saw today  
4 still do not meet that standard. We urge the Board to  
5 take seriously the concerns expressed by the international  
6 climate and environmental justice community about the  
7 feasibility and viability of carbon capture and  
8 sequestration themes -- schemes. I urge you to look at  
9 the emerging body of evidence that is not funded directly  
10 or indirectly by the fossil fuel industry that these will  
11 not work, that they will not get us to where we need to  
12 be. And if our plan rests on technology that have not  
13 been proven, what happens when we don't meet those goals.  
14 What are the opportunities lost to actually improve air  
15 quality and make our communities healthier and more  
16 breathe -- breathable, and actually make the path toward a  
17 just transition.

18           These plans allow -- we need to understand that  
19 if you extend the life of the fossil fuel infrastructure,  
20 that infrastructure currently is based in low income  
21 communities and communities of color, environmental  
22 justice communities. So to say that, you know, I think it  
23 is clear that those impacts will fall on that community --  
24 on our communities the most. And so it -- it's just sort  
25 of -- I'm not sure why we're doing this, right? If it

1 allows us to say on some report, yes, we met these  
2 standards of carbon capture, a technology that hasn't been  
3 proven, I just really think the Board needs to tell staff  
4 to go back and one, as Matt says, model out some worst  
5 case scenarios. What happens if this technology doesn't  
6 work? What happens if this technology, as happened with  
7 others, actually ends up producing more carbon than it  
8 takes in? These are serious questions. They're not --  
9 you know, and there's an emerging body of evidence that  
10 shows us that these concerns are real.

11 All right. We don't want to be here in three  
12 years and say we told you this would happen, right? We  
13 just have to get it right and do better at getting it  
14 right. And part of getting -- doing better is looking at  
15 the body of our -- of our recommendations and seeing the  
16 reductions that it can get us and moving aggressively  
17 toward those reductions, and getting us to real zero, not  
18 net zero, not carbon neutrality, but really zero  
19 reductions.

20 And I think it's important also that we adopt a  
21 meaningful -- you know, pesticide reduction targets,  
22 reduce the use of chemical pesticides by 50 percent by  
23 2030, reuse -- reduce the haz -- use of hazardous  
24 pesticides by 75 by 2035, and overall adopt more ambitious  
25 targets for organic al -- I can't talk today -- organic

1 agriculture.

2           And, of course, you know, I'd be remiss if I  
3 didn't say we've still yet to see how and when there will  
4 be a robust public health analysis of past plans, and of  
5 these measures, and of, you know, what are the potential  
6 impacts if these fail.

7           And with that, I'm going to hand it over to my  
8 other co-chair and my other EJAC members.

9           Thank you.

10           SHARIFA TAYLOR: Thanks, Martha Dina. Thanks  
11 everyone who's spoken so far. It really gave me some more  
12 things to think about in conjunction with the workshop  
13 last week. I support everything Martha Dina just said.  
14 To add some different comments, I'm really looking forward  
15 to meeting with folks from E3 as well as the CARB staff  
16 who are working on the Draft Scoping Plan, as well as once  
17 it's relevant, the UC Irvine and Rhodium group folks  
18 related to IMPLAN and whomever is responsible for BenMAP,  
19 so that we can, like Martha Dina said most recently, have  
20 a robust public health analyses, especially since you all  
21 are considering CCS in every scenario, even the most  
22 health protective scenario, which would be Scenario 1. We  
23 definitely need a life cycle analysis in order to know how  
24 this is going to effect our EJ communities, especially  
25 because all of these CCS projects of course are being

1 housed where all the pollutants are, which are in our, of  
2 course, EJ communities.

3           Also, I guess there's just still some concern  
4 about how the public health analyses that are done with  
5 BenMAP or any other type of modeling how they will be  
6 incorporated into the modeling that we've seen so far with  
7 PATHWAYS and that we will see with IMPLAN being that as  
8 the plan is drafted from these first two models, BenMAP,  
9 or the public health analysis is kind of just slapped on  
10 there at the end.

11           And I think it's great that we are, of course,  
12 focusing on like the economic aspects of climate  
13 solutions, but I think to put the humanistic public health  
14 concerns at the end ignores who it is that's going to be  
15 acting out these economics solutions. And so I think, you  
16 know, being able to mindfully put effort into  
17 understanding like the risks to EJ communities, the risks  
18 to the folks in the labor who are going to be helping to  
19 move these changes along, I think is something we just  
20 need to put more thought and discussion into.

21           And I guess that's the end of my comments for  
22 now. Just cause that was the major concern, I don't want  
23 to repeat what Martha Dina said, because she said it so  
24 eloquently and I will pass it now to whomever is speaking  
25 next from the EJAC.

1           Thanks so much.

2           ISD AIR RESOURCES ENGINEER HAND: Connie you can  
3 go ahead.

4           CONNIE CHO: Hello. This is Connie Cho. I am a  
5 member of the EJAC from Communities for a Better  
6 Environment. I use she/her pronouns. And I'm thankful to  
7 the modelers here to the modelers for providing some very  
8 useful information here. And I want to take a little bit  
9 of a different tack in my comments zeroing in on one  
10 specific sector. But I think it -- there are some lessons  
11 here that can be extrapolated to the other sectors as  
12 well.

13           There are so many critical assumptions that are  
14 essential to understanding this modeling presentation that  
15 are missing and they're scheduled to be released in May,  
16 while comments are due April 4th, so that puts us in a bit  
17 of a predicament. But I'd like to provide some had  
18 context raise some questions that illustrate the  
19 importance of understanding those assumptions that we have  
20 questions about specifically in the refinery sector.

21           First, I'd like to raise that the environmental  
22 justice advocates actually requested a 2045 phaseout date  
23 notably with no CCS, which is not reflected here in any of  
24 the alternatives, because we do care about feasibility and  
25 we do care about complex data driven cross-stakeholder a

1 planning. And we through -- can discuss later other  
2 mechanisms determined that 2045 was an appropriate target  
3 phaseout date.

4 My main comment here is specifically about how  
5 the refinery 90 percent capture rate assumption for CCS on  
6 Alternatives 2, 3, and 4, and its timing for immediate  
7 deployment is completely divorce from reality. The  
8 modeling is only going to be as useful as the assumptions  
9 and parameters that CARB chooses to provide.

10 So for some important background, in an EJAC work  
11 group, the only example that CARB CCS protocol staff were  
12 able to point to when I asked for an example of CCS  
13 working on refineries was the Shell refining upgrade in  
14 Alberta, Canada, where they have a tax on the tar sands to  
15 fund these sorts of pilots.

16 The project ran into the billions. The actual  
17 carbon capture is only on one piece of upgrader equipment  
18 when refineries have thousands of emission sources. And  
19 then another independent report showed it emitted more to  
20 run overall than it captured.

21 Even if the technology existed for the other  
22 emission sources at a refinery, where would they  
23 physically put it? There's a serious problem of physical  
24 limitations even for basic pollution controls at  
25 California refineries right now. I want to know if that



1 was accounted for. There are only so many refineries in  
2 California, so if we want to look at CCS on California  
3 refineries, it doesn't have to and shouldn't be a  
4 hypothetical exercise. You should assess the issue and  
5 then craft an assumption that's appropriate. We can't  
6 just pick a number that sounds nice or perhaps a number  
7 that an oil lobbyist suggested.

8           And so in the Alberta project CCS on its -- on  
9 one of the hundreds of emission sources, it looks like it  
10 hit 80 percent at best, but with significant performance  
11 issues. It's inconsistent. Some days being at 15 percent  
12 and that doesn't even include the emissions required to  
13 run the technology of course.

14           So all this still doesn't help me understand what  
15 percentage of the total emissions at a refinery is assumed  
16 to be captured, given that the capture technology in a  
17 refinery only operates at one part of the refinery and I  
18 won't go into the technical details of that.

19           But a California refinery is much bigger than an  
20 upgrade is something we should know, and has significantly  
21 more emission sources. And the air districts know that  
22 because there can be hundreds, thousands of permits at a  
23 single refinery. So I'd like to see that assumption,  
24 because refineries don't even have continuous emissions  
25 monitoring right now at all their emission sources. This

1 is a persistent data collection problem that I'm sure some  
2 CARB staff are aware of.

3           And this modeling also assumes a steady carbon  
4 capture from CCS starting immediately in the -- in the  
5 graph. Is the implication that we just ask all the oil  
6 industries to get started on this as a pinky promise, so  
7 they'll reach uncharted levels of continuous carbon  
8 capture, is that what we're assuming California is willing  
9 to invest billions in?

10           So I think that those who care about California's  
11 bottom line, not just the bottom line of industry would be  
12 concerned about the multi-billion dollar price tag for CCS  
13 required per refinery and the risks that I assume as  
14 industry would ask to take on.

15           Now, if we want to honestly talk about capturing  
16 carbon out of the atmosphere -- atmosphere while doing  
17 everything to decarbonize everywhere else, we should have  
18 that conversation. And I'm actually very open to that  
19 dialogue. I love learning about new technologies. But we  
20 have to have that conversation separately from a just an  
21 equitable transition planning process to manage the  
22 declining need for liquid fuels from over hundred year old  
23 fossil fuel refineries, while providing a safety net for  
24 their workers and communities who live there, because of  
25 State sanctioned racist redlining.

1           You know, there are so many different kinds of  
2 carbon capture I've learned about and it's really sort of  
3 confusing at first. And it's frankly heartbreaking that  
4 there are corporations out there trying to confuse  
5 everyone in kicking the can down the road on their  
6 corporate billion dollar Environmental remediation  
7 liabilities and workers' pensions, buying time to draft  
8 their bankruptcy paperwork.

9           So I just ask the Board members to separate --  
10 separate the currently very academic discussion of what it  
11 means to have excess carbon, and really look carefully at  
12 the state of technologies for each sector as they exist  
13 now, the state of currently existing infrastructure now  
14 that you are proposing to put CCS on and their impact on  
15 communities, and think about what it really means to spend  
16 billion and billions to extend the life of fossil fuel  
17 infrastructure like refineries, with the rate of almost  
18 absolute uncertainty.

19           And lastly, I'll just say that after seeing this  
20 hypothetical assumption, it's a real slap in the face  
21 after -- to see this and to see the OEHHA report in which  
22 GHGs and PM2.5 pollution went up. It increased in  
23 refinery communities, disproportionately Black and Brown  
24 communities. And those illnesses, those deaths, those  
25 funerals are not hypothetical. They're real.

1           That concludes my comments.

2           DR. CATHERINE GAROUPA WHITE: Good afternoon and  
3 thank you for that you for the opportunity to comment.  
4 This is Dr. Catherine Garoupa White. I use they and she  
5 pronounce and I'm the Executive Director of the Central  
6 Valley Air Quality Coalition, or CVAQ, and also serve on  
7 the EJAC. Thank you to my comment -- to my colleagues and  
8 I support your comments as well. CVAQ works to restore  
9 clean air to the San Joaquin Valley, which is one of the  
10 nation's most polluted and poorest places. We work in  
11 unceded Yokuts and Miwok lands.

12           We know that front-line communities contribute  
13 the least and are impacted first, worst, and cumulatively,  
14 and the Scoping Plan will only improve public health and  
15 achieve climate justice if the assumptions are calibrated  
16 correctly.

17           From the start, EJAC has been put in a  
18 reactionary position and asked for adjustments from major  
19 to minor, from improved format and coordination of the  
20 public workshops and other forms of engagement to analysis  
21 regarding public health and social costs of past plans and  
22 current measures that includes local, cumulative, and  
23 synergist impacts.

24           An analysis of the role of Cap-and-Trade is  
25 missing from the current discussion of the modeling and

1 discussion of how mounting problems with the program will  
2 be addressed. We are essentially halfway through the  
3 planning process. And as EJAC members, we came together  
4 to submit a second round of recommendations that again  
5 frankly were rushed and that we need more time for robust  
6 dialogue around.

7           While I appreciate the recognition for the  
8 community engagement event that we held in the San Joaquin  
9 Valley, again it was done with not enough time to really  
10 have integrated and aligned planning. We are still  
11 working to synthesize our written report out and look  
12 forward to sharing that at a future meeting, and can  
13 generally say that the overarching themes of climate  
14 justice and resilience came through from strategies that  
15 have been named today, but again that we need to see  
16 implemented in our communities, like ecosystem  
17 restoration, urban greening, and really a theme that our  
18 communities are concerned that they're going to be left  
19 behind as usual when these investments come through, that  
20 it will be the wealthy communities, and the easy places,  
21 and the big corporate polluters that will continue to  
22 benefit. With longer term planning and support for EJAC,  
23 which we've repeatedly asked for, feedback from our most  
24 impacted neighborhoods could be more directly integrated  
25 into the plan.

1           And oftentimes in these meetings, we hear big  
2 questions asked again and again, like what is the Scoping  
3 Plan? The Scoping Plan is an important exercise that  
4 sends market and policy signals related to key technology  
5 choices as much as it's CARB's interpretation and analysis  
6 of existing laws. Environmental Justice communities want  
7 the right investments and recognition that money and  
8 technology will not solve every problem.

9           Another overarching question that we are  
10 constantly hearing is when will this happen? And often  
11 it's not now, in the future. If this plan is truly an  
12 iterative process that is updated every five years, this  
13 plan is not a beginning or an end. It's a continuation.  
14 We've heard a lot of interest in equity and an interest in  
15 permanence for EJAC and a more integrated role.

16           So now we need to see actions to actually make  
17 those things happen. What is the Board's commitment and  
18 what is your role in the Scoping Plan now with your  
19 existing resources and with an eye towards planning for  
20 the long term.

21           In closing, I just really want to underscore  
22 Connie's comments about wanting to be in dialogue. These  
23 are challenging conversations. This is a difficult  
24 challenge that we have in front of us that we need to  
25 tackle together by improving planning and by providing

1 direction for CARB staff that every division should have  
2 assigned roles in the planning process. We are past due  
3 having an integrated approach and breaking down silos.

4 Thank you for the opportunity to comment and I  
5 will pass it now to my colleague Matt Holmes.

6 MATT HOLMES: Thanks. Found the notification. I  
7 really appreciate the comments from my colleagues. This  
8 body is really lucky to benefit from the insights of women  
9 like that. So I'll just start by saying my name is Matt  
10 Holmes. My pronouns are he/him/his. I'd live in  
11 Stockton, California, and I work for Little Manila Rising.

12 You know, my experience in this CARB EJAC has  
13 really been an education. I've been really grateful for  
14 the opportunity to learn about all of these amazing  
15 policies that impact my community in Stockton. I've met a  
16 lot of smart hard working people at CARB that absolutely  
17 want to do the right thing. But there are times, I think  
18 as you just heard, where we're not connecting on like  
19 direction, and values, and -- you know, I feel like I'm  
20 tapping on really thick glass and people can't hear me on  
21 the other side.

22 So there's -- you know, like I said, I'm not a  
23 technical person, but I know a little bit about history  
24 and I know a little bit about culture, and there's some  
25 real barriers between this agency and the significance of

1 this plan, and really understanding the communities that  
2 it impacts the most.

3           You know, I have felt throughout this process  
4 that I am responding to a prebaked conclusion that ISD  
5 knows that it wants to do and it wants to sort of tear the  
6 Band-Aid off on the EJAC process, and get through this,  
7 and get back to the work that it knows is more important  
8 than hearing our input. So I'm really worried about being  
9 appendicized and marginalized again.

10           So I think we -- you know, we're talking with  
11 people and they seem to hear us sometimes about breaking  
12 down these barriers. I think that can happen by, you  
13 know, empowering an EJ Division that is sincere in hearing  
14 from us, but doesn't seem to really have a lot of say in  
15 this process that was sort of -- you know, they knew it  
16 was coming for five years, but there was really no plan to  
17 ramp us up and get us to some level of understanding where  
18 we could provide an informed set of recommendations.

19           So throughout the whole process, there's been  
20 kind of like a reticence to make a confident statement  
21 about any of these scenarios, because even though we've  
22 been meeting with you all since June, like excessively, I  
23 still feel really uninformed on some of these scenarios.

24           So, you know, my hope is that we can actually  
25 extend this process. You know I don't think the 20 --



1 it's been clear that there's no political will to protect  
2 the 2022 Scoping Plan with a -- with an extension. But,  
3 you know, there will be another Scoping Plan, and it would  
4 be just a shame if in 2027, we were to trot out 30 new  
5 unsuspecting community advocates and ambush them with a  
6 dearth of knowledge and a mountain of responsibility.

7           So I hope we can sort of plan for the future and  
8 find a way to break down the barriers between staff and  
9 the -- you know, really what's a myopic set of research  
10 questions that seem to be, you know, interested in  
11 preserving business as usual, instead of really taking a  
12 hard look at the moment that we're in.

13           I also think there's an opportunity to break down  
14 the barriers between these appointed Board members. Ever  
15 time we meet with you all, we hear -- we hear like  
16 important insights and considerations. And, you know,  
17 those are things that should be peppered in throughout our  
18 process.

19           So again I think maybe I'm the optimist in the  
20 group, which will shock everyone on this call. But in the  
21 long term, I think we can get into dialogue, but I can't  
22 lie right now, I do not feel like we are in dialogue. And  
23 I feel like we are mostly commenting on process rather  
24 than commenting on the content.

25           So, you know, 2022 plan feels like it's in

1 trouble. I look forward to learning as much about it as  
2 possible. And I'll just say that, you know, I am not a  
3 technically proficient person, but I am a history teacher  
4 and I know what fairness looks like.

5 (Knocking)

6 MATT HOLMES: Oh, and I'm getting a package at  
7 the door.

8 You know, and so I just -- I just hope that we  
9 can use this opportunity, acknowledge that inequity isn't  
10 just wrong. It's dangerous. You know, COVID should have  
11 taught us that and the policies that the Scoping Plan are  
12 framing have a chance to really paint this state into a  
13 corner.

14 (Knocking)

15 MATT HOLMES: So I don't expect California to  
16 necessarily do the right thing because they care about us,  
17 but at least out of the basic self interest agree, they  
18 should really take the consideration of impacted  
19 communities more seriously to protect everybody. So hope  
20 we can pull something together. Thank you.

21 CHAIR RANDOLPH: All right. Thank you. Now, we  
22 will hear from the public who would like to speak on this  
23 item.

24 If you would like to speak, please raise your  
25 hand or hit star nine now.

1           Board Clerk, will you please call the first  
2 Commenter.

3           BOARD CLERK GARCIA: Thank you, Madam Chair. We  
4 have 17 commenters who wish to speak at this time. If you  
5 wish to verbally comment on this Board item, please raise  
6 your hand or dial star nine now. And I apologize in  
7 advance if I mispronounce your name.

8           The first three speakers are Jim Verburg, Richard  
9 Grow, and Joy Alafia.

10           Jim, I have activated your microphone. Please  
11 unmute yourself and you can begin.

12           JIM VERBURG: Thank you. Good afternoon, Chair  
13 Randolph, members of the Board. For the record my name is  
14 Jim Verburg. I am the Senior Manager for Fuels Regulatory  
15 Issues for WSPA. WSPA is a trade organization that  
16 proudly represents companies in California and for other  
17 western states that provide biodiverse sources of  
18 transportation fuels and other energy. In California, our  
19 member companies employ thousands and contribute  
20 significantly to California's economy. We are also a key  
21 part of the energy transition throughout the west and in  
22 California.

23           Appreciate the opportunity to comment today on  
24 the Scoping Plan in particular. I want to start by saying  
25 we appreciate CARB's acknowledgement of the important role

1 of renewable fuels, hydrogen, CCS play in our view.  
2 California will not reach its interim or 2045 goals in a  
3 feasible cost-effective way without these and a diverse  
4 set of strategies.

5           We do, however, have some observations and  
6 concerns about the scenario models to developed by E3. If  
7 the transportation sector reductions are heavily reliant  
8 on ZEV mandates, we recommend a more technology neutral  
9 approach that allows for innovation and suggests that CARB  
10 run scenarios without mandates to identify alternative  
11 opportunities to reduce emissions in the transportation  
12 sector.

13           We also have concerns given the structure of  
14 scenario models about the overall program costs and cost  
15 effectiveness. We suggest, as we did in our October 2021  
16 comment letter, the employment of market-based approaches  
17 prioritizing the lowest cost implementation. These market  
18 based approaches that are technology neutral are critical  
19 to pursuing carbon neutrality in the most cost-effective  
20 way.

21           Finally, just a caution, and it's been mentioned,  
22 that the goals as portrayed in all four scenarios will  
23 require extremely large projects with emerging  
24 technologies, the likes of which have not been seen in a  
25 very short time frame. CCS, hydrogen, expand electricity,

1 renewable fuel and gas projects and all accompanying  
2 infrastructure improvements. It's a daunting task for  
3 permitting CEQA alone, not to mention other potential  
4 barriers. We recommend that CARB carefully consider the  
5 feasibility of deployment rates as they are currently  
6 portrayed in the modeled scenarios.

7           So in closing, thank you for your time today. We  
8 look forward to providing written comments for the fast  
9 approaching April 4th comment deadline and engaging with  
10 CARB and other stakeholders in the coming weeks and  
11 months.

12           Thank you.

13           BOARD CLERK GARCIA: Thank you.

14           Richard, I have activated your microphone.  
15 Please unmute yourself and you can begin.

16           RICHARD GROW: Greetings. My name is Richard  
17 Grow. You've heard from me before. My expertise, such as  
18 it is, comes from working several decades at the U.S. EPA  
19 in the Air Program and environmental justice and civil  
20 rights. And regarding emissions trading, I've been  
21 involved over all those decades in developing guidance  
22 policies, safeguards, in evaluating actual Cap-and-Trade  
23 programs.

24           And while today's main agenda topic, it's been a  
25 broad look at scenarios, and modeling, and so on. My

1 comments regarding scenarios have to do with scenarios not  
2 yet evaluated. None of your scenarios include the  
3 safeguards and reform that have been recommend and  
4 needed -- and shown to be needed by your Cap-and-Trade  
5 Program.

6           Regarding Cap-and-Trade, you have at least four  
7 reports in play. The first one, much favored by CARB  
8 staff, is a 2020 report from UC Santa Barbara written by  
9 two economists, for Pete's sake, showing the benefit of  
10 Cap-and-Trade supposedly, a report by now thoroughly  
11 debunked and discredited. But then you have the OEHHA  
12 report, which after having been disingenuously cherry  
13 picked for very clear talking points, nevertheless shows  
14 serious problems in Cap-and-Trade when it comes to the  
15 refinery sector, as has been mentioned earlier, especially  
16 for people of color, the sector in which emissions of  
17 greenhouse gases and co-pollutants were found to have been  
18 increasing rather than decreasing since the start of the  
19 program. The problem is likely to exist in other sectors.

20           And then you also have the recent report released  
21 at the same time by Manuel Pastor and others showing very  
22 similar problems and recommending reforms that are in fact  
23 identical to some of those being recommended by the EJAC  
24 for the Cap-and-Trade Program.

25           And finally, you have the report from the

1 Independent Emissions Market Advisory Committee showing  
2 that the AB 32 bank has so much funny money in it already  
3 that basically the Cap-and-Trade Program is not going to  
4 require any further reductions until 2030.

5           Anyone willing to cloak this situation in  
6 congratulatory expressions is like -- which I heard a  
7 hundred percent compliance of the Cap-and-Trade Program,  
8 frankly is engaged in an intellectual gamesmanship and  
9 dishonesty, games which are not only not amusing, but, in  
10 fact, are dangerous to public health, especially for  
11 disadvantaged communities.

12           So anyone on staff -- likewise on staff for the  
13 Board claiming the mantle of environmental justice while  
14 letting these games go on, I get -- I almost -- I don't  
15 know what to say to you, but like stop it. And CARB  
16 overall and the Board needs to stop stonewalling on this  
17 issue, needs to do its due diligence and step up to the  
18 evaluation of the recommendations and reforms of the  
19 Cap-and-Trade system being put forward by the  
20 Environmental Justice Advisory Committee and this needs to  
21 be done now, not during. It needs to be done now, during  
22 and not after the Scoping Plan process, so that you can  
23 then deal with the real challenges left once the smoke  
24 screen left behind, behind which the Cap-and-Trade Program  
25 has been hiding has been removed.

1 Thank you.

2 BOARD CLERK GARCIA: .... Joy Alafia. After Joy  
3 we'll hear from Jeanne Merrill, Mariela Ruacho and Virgil  
4 Welch.

5 Joy, I have activated your microphone, please  
6 unmute yourself and you can begin.

7 JOY ALAFIA: Thank you. Thank you, Chair  
8 Randolph and Board members for the opportunity to speak.  
9 My name is Joy Alafia pronouns she/her/hers.

10 And I am with the Western Propane Gas  
11 Association, an organization that powers rural  
12 Californians, low-income populations, emergency and  
13 essential facilities like hospitals and water treatment  
14 facilities among of host of other markets.

15 Our industry's interest align with the goals of  
16 CARB in an effort to provide meaningful greenhouse gas  
17 reductions and to do so equitably. It is because of this  
18 belief that our organization set forth the ambitious goal  
19 to provide Californians with a hundred percent renewable  
20 propane by 2030. This is a self-imposed goal as renewable  
21 propane is -- provides up to 2.26 million tons of avoided  
22 CO2 emissions.

23 And we can do this within the next two to five  
24 years with the right support. This is the equivalent of  
25 taking 537,000 cars off the road annually. Renewable



1 propane is produced from sources like use cooking oil and  
2 animal fat, and provides a reduction of up to 80 percent  
3 versus fossil fuels.

4           So as we transition to renewable propane, we can  
5 empower communities that are left stranded by other  
6 cleaner energy solutions or even provide resiliency for  
7 communities to power through any Public Safety Power  
8 Shutoffs or energy when they are asked to power down, so  
9 there's a collective benefit here. And we can provide  
10 this sustainable energy as early as 2024 in significant  
11 volume with the right support.

12           I echo the comments of the EJ commentate --  
13 commenter to look at life-cycle emissions as well as to  
14 devise timeline benchmarks for deployment and assure that  
15 the cost is equitably distributed, so that all communities  
16 have access to carbon neutral solutions.

17           We encourage CARB staff to think creatively for  
18 how all carbon-neutral technologies can work in concert to  
19 provide complementary power, back-up power, power to  
20 remote and rural communities and increase the volume of  
21 renewable grid electricity that's available.

22           Through this lens, renewable propane delivers and  
23 we look forward to working with CARB staff to further  
24 elaborate on these points and the unique opportunities to  
25 help achieve these goals.

1 Thank you.

2 BOARD CLERK GARCIA: ...unmute yourself and you  
3 can begin.

4 JEANNE MERRILL: Hi. This is Jeanne Merrill with  
5 the California Climate and Agriculture Network. We're a  
6 coalition of sustainable and organic agriculture  
7 organizations. Thank you, Chair and Board Members.

8 We are very glad to see a stronger effort to  
9 include natural and working lands in the Scoping Plan.  
10 And we're glad to see in the scenarios modeling inclusion  
11 of organic agriculture, farmland conservation, or avoided  
12 conversion, healthy soils practices, grassland  
13 restoration, alternative manure management, and more.

14 However, we are concerned that the lack of  
15 inclusion of reduced or eliminated synthetic fertilizers  
16 result in the modeling not telling us much about the  
17 benefits of organic agriculture or healthy soils  
18 practices. Moreover, based on the outcomes of the  
19 scenarios, there's not a lot of detail on many of the  
20 assumptions underlying the scenarios. For example, on  
21 grasslands restoration, we know few details on what's  
22 included there.

23 We know that climate modeling is very complex,  
24 but the lack of soil carbon sequestration modeling and  
25 non-croplands landscapes is a significant limitation of

1 the natural and working lands modeling.

2 We'd like to see more details on the modeling  
3 assumptions and the underlying literature to better inform  
4 us and others on -- on the modeling. And we would also  
5 like to ensure that there's enough time for public input  
6 to inform the Scoping Plan policy pathways as we pivot to  
7 that collectively. The timeline is quite tight, but there  
8 are many stakeholders who I think who robustly inform what  
9 happens next on the natural and working lands side of the  
10 Scoping Plan update.

11 Thank you.

12 MARIELA RUACHO: Hi. Can you hear me?

13 I believe that's a yes. Hi. Good afternoon. My  
14 name is Mariela Ruacho from the American Lung Association.

15 We appreciate all the work staff has done on the  
16 Scoping Plan. As CARB continues to analyze results from  
17 modeling the four scenarios, we urge the Board to direct  
18 staff to maximize the focus on programs that generate  
19 direct emission reductions and health benefits. We see  
20 the Scoping Plan as a roadmap for achieving critical  
21 climate standards, but also a roadmap to healthier  
22 communities, improve health outcomes, and less local  
23 pollution.

24 We see these as working hand in hand and believe  
25 that a focus in direction emission reduction measures is

1 the clearest pathway forward. Currently, there are still  
2 questions about how some sectors will reduce emissions in  
3 the scenarios reliant -- in the scenarios reliant on the  
4 Cap-and-Trade Program and CCS. Again, we believe that the  
5 most health protective plan will focus on direct emission  
6 reductions and reductions in combustion as the primary  
7 strategy.

8 We also encourage a strong focus on aligning this  
9 plan with trackable measures for achieving healthier  
10 communities, reductions in vehicles miles traveled, and a  
11 better alignment of transportation funding with climate  
12 standards. In addition -- in addition, CARB should  
13 continuously report how they are responding to the EJAC  
14 recommendations in the development and adoption on the  
15 plan and throughout implementation. We look forward to  
16 drafting plan -- plan -- the plan and working with staff  
17 and Board members.

18 Thank you. Also, your audio is not coming  
19 through very well. So just FYI. Thank you.

20 BOARD CLERK GARCIA: ....microphone. Please  
21 unmute yourself and you can begin.

22 Virgil?

23 VIRGIL WELCH: Hi. Can you all hear me?

24 BOARD CLERK GARCIA: Yes, we can.

25 VIRGIL WELCH: Great. Thanks. Thank you very

1 much and good afternoon, Madam Chair and members of the  
2 Board. My name is Virgil Welch. I'm with the California  
3 Carbon Capture Coalition. The Coalition is a business and  
4 labor organization working to create a comprehensive  
5 policy framework to ensure that proven carbon capture  
6 utilization and sequestration technologies can play a key  
7 role in achievement of California's climate goals.

8           And I just wanted to acknowledge at the outset  
9 the team at CARB and all the stakeholders and experts that  
10 have been engaged in the Scoping Plan process. As you all  
11 well know, this is an incredibly important part of your  
12 work and it is one of the key opportunities for California  
13 to demonstrate ongoing climate action leadership, both  
14 inside and beyond our borders.

15           Carbon capture and sequestration technologies are  
16 a necessary component of any successful strategy to meet  
17 global, national, and California GHG reduction goals.  
18 This is the conclusion of numerous expert analyses, as we  
19 heard earlier, including the IPCC, the International  
20 Energy Agency, here in California, analyses from places  
21 like Lawrence Livermore and Stanford all demonstrate the  
22 key role that CCS has to play in these efforts.

23           The math just simply does not work in terms of  
24 achieving the emission reductions we're going to need to  
25 meet scientifically-determined climate goals without CCS.

1 As the presentation today made clear, there are  
2 significant emission reductions to be achieved across  
3 multiple industries and sectors in California.

4 And for some of the veterans on the Board, you  
5 will I'm sure recall that CCS has been acknowledged in a  
6 number of previous scoping plans as a set of technologies  
7 that would need to be considered in the future. Well,  
8 that future is right now. As the Chair noted in her  
9 comments at the outset, we have got to get going and we  
10 need action across all sectors to scale down emissions.

11 So just as we are doing the whole range of other  
12 technologies, we need a comprehensive framework to enable  
13 CCS to play a meaningful role in cutting greenhouse gases  
14 in California.

15 I'm sure most of you are all well aware of the  
16 fact that the Biden Administration has prioritized CCS as  
17 an important component of national efforts to decarbonize  
18 and is providing some really significant financial  
19 incentives as part of the President's Climate Action Plan.  
20 So we have a tremendous opportunity to benefit from these  
21 incentives in California, if we put in place mace the  
22 right policy and regulatory framework.

23 And, of course, we need to account for the  
24 significant economic and job benefits that CCS can provide  
25 here, which are quite substantial in terms of both energy

1 cost savings --

2 BOARD CLERK GARCIA: ...are Ryan Kenny, Evan  
3 Edgar, and Julia Levin.

4 Ryan, I have activated your microphone. Please  
5 unmute yourself and you can begin.

6 RYAN KENNY: Great. Good afternoon, Board  
7 member -- Board members and Chair Randolph. Thank you for  
8 your time today. My name is Ryan Kenny with Clean Energy.  
9 Our company is the nation's largest provider of renewable  
10 natural gas transportation fuel. And we are here to help.  
11 We are looking to help the state drive deep  
12 decarbonization and help meet the 2045 carbon neutrality  
13 goals then, if not sooner.

14 We encourage CARB to continue incentivizing the  
15 production and use of low to carbon negative fuels and to  
16 prioritize in the Scoping Plan the reduction of  
17 short-lived climate pollutants. Given the state's climate  
18 emergency, policy tools are needed to help drive deep  
19 decarbonization of fuels today. Encouraging greater  
20 development of such low carbon fuels today will ensure  
21 that future clean transportation markets will be powered  
22 by fuels that are in line with California's goals.

23 As you know, diesel-powered heavy-duty trucks are  
24 the single largest source of black carbon, which is a  
25 short-lived climate pollutant, and CO2. Low to carbon

1 negative fuels capture methane, another short-lived  
2 climate pollutant, before being emitted into the  
3 atmosphere, and they are used to help displace diesel in  
4 the heavy-duty transportation sector.

5           Near-zero-emission vehicles are the only  
6 transportation technology available today that delivers  
7 less than zero emissions. The average carbon intensity of  
8 all natural gas reported in the California LCFS is  
9 negative at minus 28.17. No other transportation fuel in  
10 California averaged zero or below. So this is a  
11 significant solution to help driving deep decarbonization  
12 and to help meet the carbon neutrality goals.

13           The LCFS is working and we encourage CARB to  
14 again focus on the reduction of short-lived climate  
15 pollutants and to incentivize the production and use of  
16 low to carbon negative fuels.

17           Thank you.

18           BOARD CLERK GARCIA: ...please unmute yourself.

19           EVAN EDGAR: Chair Randolph and Board members.  
20 My name is Evan Edgar of Edgar Associates representing the  
21 refuse industry that is vested in anaerobic digestion  
22 facilities coupled with near-zero NOx heavy-duty fleets  
23 using in-state carbon negative RNG, while implementing SB  
24 1382 to reduce methane in the near term and addressing  
25 short-live climate pollutants, which CARB is not making a



1 priority in the modeling so far.

2           We filed a white paper today based upon European  
3 studies regarding the carbon intensity of manufacturing  
4 ZEV batteries, which is based on defensible science and  
5 life cycle carbon accounting. CARB has a statutory  
6 requirement to minimize the leakage, when considering the  
7 Scoping Plan and not increase greenhouse gases on  
8 non-California entities and that needs to be addressed.

9           With the CI of ZEV batteries, which are  
10 manufacturing, which is 38 to 66 CI depending on the type  
11 of ZEV battery. CARB's existing emission factor for ZEVs  
12 used in California grid energy is plus 23 CI now and will  
13 be for the next 23 years.

14           ZEVs are not zero emissions, but have a life  
15 cycle carbon intensity of 62 to 90. CARB is picking ZEV  
16 as a technology winner, while leaking emissions out of the  
17 State. CARB has a statutory requirement to support cost  
18 effective and flexible compliance when considering the  
19 Scoping Plan for heavy-duty vehicles is not reflected in  
20 the modeling so far while using ZEVs.

21           CARB should use -- should include ZEV battery  
22 manufacturing in the Low Carbon Fuel Standard, since the  
23 core tenets are based upon life-cycle analysis. The  
24 modeling shows a tailpipe mentality where the ZEV is  
25 wagging the dog.

1 Modeling the scenarios shows diesel for decades  
2 and RNG for very few. There is adequate RNG supply for  
3 the refuse heavy-duty fleet to utilize in-state RNG by  
4 2025 with a current in-state RNG productions underway,  
5 where there are many co-benefits. EJAC and CARB shall  
6 want to decrease diesel use instead of phasing out the  
7 near-zero NOx fleet on a carbon negative RNG platform that  
8 has near-term reduction than can try -- criteria  
9 pollutants benefits now.

10 We cannot wait for a perfect 2045 when the world  
11 would be timed out on climate change according to the IPCC  
12 and COP. The UN General Secretary says climate change  
13 target is on life support and we are sleep walking into a  
14 climate catastrophe. It's time to wake up and model the  
15 RNG.

16 EJAC is meeting next week and will be briefed on  
17 the force child labor in the Congo and a review of the  
18 Amnesty International documents on the serious human  
19 rights violations linked to -- linked to extraction of  
20 minerals and used in ZEV batteries, plus all the  
21 environmental degradation in many countries outside from  
22 Africa to South -- South America.

23 Where is the environmental justice for all. I'll  
24 be asking EJAC that question next Wednesday.

25 Thank you very much.

1 BOARD CLERK GARCIA: ...moment to test my audio.

2 Can you hear me, Evan?

3 EVAN EDGAR: Yes, I can hear.

4 BOARD CLERK GARCIA: Great. Thank you.

5 Okay. Julia, I have activated your microphone.

6 Please unmute yourself and you can begin.

7 JULIA LEVIN: Good afternoon. Julia Levin with  
8 the Bioenergy Association of California.

9 I really want to thank the Air Board for this  
10 focus on reaching carbon neutrality by mid-century, as  
11 well as the new addition of really fully incorporating  
12 natural and working lands into the main body of the  
13 Scoping Plan itself, instead of treating it as sort of a  
14 side or separate issue as past Scoping Plans have done.

15 Having said that, we do have a couple of concerns  
16 and recommendations for the Scoping Plan. In particular,  
17 we're very concerned about the sort of broad use of  
18 different technologies or fuels as though they are all  
19 equivalent in terms of life cycle carbon emissions.

20 For example, biofuels can have orders of  
21 magnitude different life cycle carbon intensities from  
22 positive -- kind of high positive to several hundred --  
23 negative several hundred on a life-cycle basis. The same  
24 is true of hydrogen. The same is true of electricity.  
25 The same is true of zero-emission vehicles. So we need to

1 look all technologies, fuels, and other solutions on a  
2 life-cycle basis or we are not going to get to a  
3 defensible, actionable plan that really will meet our  
4 climate requirements.

5           Our second concern is while we appreciate the  
6 conversation round carbon capture and storage and direct  
7 air capture, we think there needs to be a more targeted  
8 focus on opportunities for negative emissions, because as  
9 Virgil and other speakers have said, we know we're going  
10 to need negative emissions to balance out to net zero.  
11 That's not in order to continue fossil fuel use, but even  
12 if we eliminate all fossil fuels, there will still be  
13 emissions from other sectors and we need to offset those  
14 with carbon negative emissions.

15           My third point is on slide 15 I could not  
16 understand why, with a 75 percent waste diversion  
17 requirement in California, slide 15 shows no greenhouse  
18 gas reductions from organic waste between now and 2045.

19           I realized after looking at the slide for a long  
20 time, that the reason is that that slide, and it turns out  
21 most of the analysis, is looking at climate pollutants on  
22 a hundred year global warming potential. That doesn't  
23 make any sense for a plan that is intended to achieve  
24 carbon neutrality in just over 20 years.

25           So I really urge the Air Board to reassess both

1 emissions and potential for reductions based on a 20-year  
2 global warming potential. Do anything else makes no sense  
3 in a plan that, you know, sets a goal for 2045. It also  
4 really devalues the climate forcing impact of short-lived  
5 climate pollutants and the immediate climate benefit of  
6 eliminating short-lived climate pollutant emissions.

7 My last point is there's really no discussion  
8 about costs. And we know that there is a very wide range  
9 of costs for different reduction strategies, and  
10 technologies, and fuels. And we cannot adopt a plan that  
11 doesn't assess the cost effectiveness of different  
12 technologies and choices.

13 Thank you.

14 CHAIR RANDOLPH: Thank you. I am going to be  
15 closing the queue at 3:22. So if you want to speak and  
16 have not yet placed yourself in the queue by raising your  
17 hand or dialing star nine, you need to do so before 3:22.

18 BOARD CLERK GARCIA: Thank you. Our next three  
19 commenters will be Mikhael Skvarla, Steve Jepsen, and  
20 George Peridas.

21 Mikhael, I've activated your microphone. Please  
22 unmute yourself and begin.

23 MIKHAEL SKVARLA: Yeah. Mikhael Skvarla with the  
24 Gualco Group here on behalf of the California Council for  
25 Environmental and Economic Balance. CCEEB would like to

1 thank ARB staff, the Board members, modelers, and other  
2 stakeholders who have dedicated substantial time through  
3 these workshops and comment periods to date.

4 Carbon neutrality is an important pursuit  
5 environmentally and has major implications for all  
6 Californians and their economic prosperity.

7 Moreover, what we do globally -- or what we do  
8 matters globally, if it can be replicated in other states,  
9 regions, and countries. There should be an openness and  
10 an optimism to any new viable solutions that move us  
11 towards our goals allowing for innovation.

12 It's important to note that we do not yet have  
13 the data, inputs, assumptions, like technology uptake and  
14 other pertinent information to review these initial  
15 results. Additionally, PATHWAYS is not an optimization  
16 model, so these initial results are ambitious at best, and  
17 not a complete picture. We look forward to the disclosure  
18 of these technical documents in April as staff has  
19 indicated. This will provide us an opportunity to fully  
20 analyze the scenarios and model results to date.

21 However, even with daylighting of the PATHWAYS  
22 inputs, we want to caution that modeling is not precise.  
23 It is a -- at this points, it's simply showing an  
24 ambitious picture absent the economic data and impacts.  
25 The cost, affordability, consumer adoption, jobs impacts,

1 and other considerations must be considered in the  
2 forthcoming economic modeling that will feed into the  
3 Draft Scoping Plan.

4 As Secretary Blumenfeld stated, it is important  
5 to keep all the tools on the table to provide for the  
6 widest set of options for decarbonization. The future is  
7 unpredictable and we are currently living the ever present  
8 history of the future.

9 Current day solutions may not be sufficient to  
10 achieve our end goals, so policies that enable innovation  
11 and flexibility like the Low Carbon Fuel Standard and  
12 Cap-and-Trade are incredibly important.

13 Finally, the energy system of the future relies  
14 on upfitting, upgrading, and expanding clean and renewable  
15 energy production, both electric and molecular. To  
16 achieve our decarbonization goals, we need to build our  
17 way to carbon neutrality, meaning that beyond capital,  
18 permitting is a major barrier to achieving our goals. The  
19 State should take action to enable rapid build-out of  
20 decarbonization projects and low carbon technologies.  
21 CCEEB looks forward to the opportunity to continue to  
22 review, and comment, and provide feedback. And we look  
23 forward to the data and the cost assumptions as we move  
24 toward. Thank you.

25 BOARD CLERK GARCIA: Thank you.

1           Steve, I have activated our microphone. Please  
2 unmute yourself and begin.

3           STEVE JEPSEN: Hello, Chair Randolph and members  
4 of the Board. This is Steve Jepsen, the Executive  
5 Director for the Southern California Alliance of Publicly  
6 Owned Treatment Works, or SCAP. We represent over 80  
7 public water, wastewater, and recycled water agencies in  
8 Southern California.

9           Wastewater treatment plants generate a non-fossil  
10 biogas as part of the process of cleaning the public's  
11 wastewater to protect public health and the environment.  
12 State greenhouse gas reduction policies, such as SB 1383,  
13 will divert food waste away from landfills to existing  
14 waste water treatment plants located in all types of  
15 communities. This will significantly increase the amount  
16 of waste derived non-fossil biogas generated.

17           SB 1383 also requires the diversion of wastewater  
18 generated biosolids from landfills, which will result in  
19 more beneficial land application of biosolids in the  
20 state, which also sequesters carbon and improves soil  
21 water holding capacity.

22           The wastewater sector has a unique opportunity to  
23 use wastewater derived biogas fueled trucks and equipment  
24 for managing the society's wastewater, food waste, and  
25 biosolids in a carbon neutral, even approaching carbon



1 negative scenario.

2           We need reliable homes for this wastewater  
3 derived biogas to be resilient for the public. Using it  
4 as a low carbon renewable fuel to power our essential  
5 public service maintenance and emergency equipment will  
6 expedite the transition from diesel-powered trucks.

7           The wastewater derived renewable gas clean  
8 engines are currently available and in some cases already  
9 in use, whereas zero-emission equipment are not available  
10 for our sector, and based on communication with equipment  
11 suppliers not feasible with current technologies. We are  
12 not opposed to zero-emission vehicles, where appropriate  
13 and available, and many of our agencies already have them  
14 in their fleets.

15           In summary, the wastewater sector has a  
16 non-fossil renewable fuel source derived from society's  
17 waste that cannot be turned off. Engines and our  
18 specialty equipment that can use this fuel already exist.  
19 Embracing this non-fossil renewable fuel will expedite  
20 carbon neutrality while getting diesel trucks off the  
21 road, allowing the wastewater sector to continue our  
22 emission -- our mission of protecting public health and  
23 be -- and to be consistent with federal Clean Air Act  
24 requirements.

25           This approach is consistent with the AB 32

1 Climate Change Scoping Plan statutory requirements to  
2 support cost effective and flexible compliance.

3 Thank you for the opportunity to comment today.

4 BOARD CLERK GARCIA: George, I have activated  
5 your microphone. Please unmute yourself and begin.

6 GEORGE PERIDAS: Great. Thank you. Can you hear  
7 me okay?

8 BOARD CLERK GARCIA: Yes, we can.

9 GEORGE PERIDAS: Thanks. Thanks. Chair  
10 Randolph, members of the Board. Thank you for the  
11 opportunity to comment today. My name is George Peridas  
12 from Lawrence Livermore National Laboratory.

13 Our job is to solve hard problems and represent  
14 science. We do not stand to profit from any climate  
15 solution and we don't have any dog in the fight, except  
16 helping to solve climate change.

17 Today, I'm compelled to comment on what appears  
18 to be a point of contention, the use of carbon removal  
19 technologies. As with climate science itself, the  
20 scientific community is overwhelmingly united in believing  
21 that we must capture CO2 and put it back where it came  
22 from, and that's deep underground. Our emission levels  
23 and the levels of CO2 in the atmosphere are simple too  
24 great, to high at this point. This applies to the globe,  
25 to the nation, and to California specifically.

1           Technological carbon removal does not need to be  
2 the star player in this game, but nonetheless, it is a  
3 necessary and important player if we are to achieve carbon  
4 neutrality.

5           Fortunately, this is a proven concept and family  
6 of technologies. Nature has stored CO2 securely over  
7 hundreds of millions of years, well before we thought of  
8 doing it ourselves. We have over four and a half thousand  
9 miles of CO2 pipeline in the U.S. Tens of projects that  
10 capture transport and store CO2 are operating worldwide  
11 with an excellent track record.

12           In addition, California has the strictest rules  
13 in the world to control the practice with brand new  
14 regulations dating from the last few years that were  
15 crafted with the failings of oil and gas regulation in  
16 mind and with an unprecedented level of scrutiny.

17           The U.S. has safely stored 14 million tons of CO2  
18 underground in research programs, run specifically to test  
19 geologic storage. Returning CO2 deep underground is not  
20 only necessary for carbon neutrality but can serve several  
21 of other California's goals. It can present -- prevent  
22 catastrophic wildfires, it can create rural economic  
23 opportunities, maintain a healthy workforce, improve air  
24 quality, and generate benefits for local communities.

25           We firmly believe that we can and have no choice

1 but to make these projects work both locally and for our  
2 global climate emergency.

3 Thank you very much for the time.

4 BOARD CLERK GARCIA: ...your microphone. Please  
5 unmute yourself and you can begin.

6 Paul Mason.

7 PAUL MASON: Oh, hi. Sorry. It is hard to hear  
8 the clerk call the names that -- the volume on that mic is  
9 lower than all the rest of them. But my name is Paul  
10 Mason. I am with the Pacific Forest Trust. And thank you  
11 Chair Randolph and members for the opportunity to make a  
12 few comments today.

13 I'll be really brief. We really appreciate the  
14 much more substantial focus on natural and working lands  
15 in this Scoping Plan compared to the previous ones. The  
16 modeling that was described today and that we've all been  
17 engaged with over the last, oh, many months is very  
18 ambitious. Especially for the forest sector, it's going  
19 to be hard to really know what that means until we see the  
20 modeling results out to 2100, because over these next 20  
21 years, we're going to create a lot of emissions under all  
22 circumstance by thinning, and prescribed fire. And  
23 theoretically we would see more of those longer term  
24 benefits out in the second half of the century. So seeing  
25 that information as well as the benefits to fire behavior,

1 water quality, et cetera, would be really interesting.

2           That said, I think it will be important for both  
3 the forest and really all of the -- especially the natural  
4 and working lands modeling that's so complex is to realize  
5 it will be informative and sort of directional. But all  
6 modeling has limitations and we'll need to combine what  
7 we're seeing in the modeling with what we also know to be  
8 true. And so that's going to need to get reflected in the  
9 way the Scoping Plan is actually presented as this guiding  
10 document.

11           And one of the things that we know to be true and  
12 is going to be very important on our natural landscapes is  
13 our interventions need to be driven by restoring an  
14 ecological resilience that's going to be stable over time  
15 and not just on maximizing carbon. And I appreciate the  
16 staff calling this out in the presentations, but I think  
17 it's going to be -- need to be sort of the driving  
18 consideration to both trying to restore more forest  
19 structure, but then also to maintain that and let it  
20 develop over time. We need to make sure that we're not,  
21 you know, doing good things now only to see the forest  
22 clear cut in 20 years and be right back on to sort of  
23 dense, fire prone, even-aged condition. We need to be  
24 changing some of this management, so that we're restoring  
25 the large fire resilient trees on the landscape as sort of

1 a driving consideration for how we get to a more fire  
2 resilient, climate resilient condition on our forested  
3 landscapes.

4 So really appreciate the moment to talk and thank  
5 you very much.

6 BOARD CLERK GARCIA: Thank you, Paul.

7 And I switched microphones. Can you hear me  
8 better now?

9 PAUL MASON: It's a little bit -- yeah, it is  
10 better. Just make sure you're holding it close.

11 BOARD CLERK GARCIA: Okay. Thank you.

12 Our next three commenters will be Graham Noyes,  
13 Sarah Deslauriers, and a phone number ending in 180.

14 Graham, I have activated your microphone. Please  
15 unmute yourself and you can begin.

16 GRAHAM NOYES: Thank you. Confirming the audio.

17 BOARD CLERK GARCIA: Yes, we can hear you.  
18 Can you hear me?

19 GRAHAM NOYES: Chair Randolph, members of the  
20 Board. My name is Graham Noyes. Thank you for the  
21 opportunity to provide comments today. I'm the Executive  
22 Director of the Low Carbon Fuels Coalition. Our mission  
23 is to support an expansion of low carbon fuel policies.

24 And what I'd like to share with the Board today  
25 are what I see as some untapped opportunities to achieve

1 the targets faster. As other commenters have pointed out,  
2 California has very aggressive goals in this sector and so  
3 really recommend the use of all available tools, and  
4 particularly tools that have proven well over the  
5 experience we've had to date.

6           Regarding Slide 8 in particular, it shows  
7 substantial use of fossil fuels all the way out to 2045.  
8 By contrast, the Institute for Transportation Studies  
9 Report, Driving California's Transportation Emissions to  
10 zero shows a path to zero use of fossil fuels by 2045.  
11 And that report was commissioned specifically to look for  
12 strategies to achieve carbon neutrality consistent with  
13 Executive Order B-55-18. So really recommend the  
14 integration of that report to the greatest extent possible  
15 in ts approaches.

16           Also on that same slide, we see under all  
17 scenarios essentially a 20 percent reduction in carbon  
18 intensity by 2030 and under Alternative 2, a 25 percent  
19 reduction but not until 2035. And it is perplexing to me  
20 why there aren't more aggressive numbers there. We  
21 already have a 20 percent reduction within the LCFS  
22 Program as it exists today. This is a program that has  
23 gained State, national, and international recognition, and  
24 is being replicated in other jurisdictions. We've seen  
25 over 75 million metric tons of greenhouse gas reduction

1 and \$10 billion in credit value. And it's made California  
2 the world leader in attracting low carbon fuels and low  
3 carbon fuel technologies.

4 But just this past week, Oregon with their clean  
5 fuels program surpassed our program in credit value. Our  
6 lamb has lapsed from a \$200 credit value down to 120. And  
7 the Oregon program by contrast is responding to an  
8 Executive Order to really maximize the reductions. And I  
9 understand that the LCFS is a separate process than this  
10 one, but I think the Scoping Plan can take advantage of  
11 the proven capabilities of this LCFS Program, and also  
12 needs to send a signal to the market to grow low carbon  
13 fuel production and expansion rather than shrink it, which  
14 is the signal that the market is starting to get.

15 Thank you for the opportunity to provide these  
16 comments.

17 BOARD CLERK GARCIA: ...microphone phone. Please  
18 unmute yourself and you can begin.

19 SARAH DESLAURIERS: Can you hear me okay?

20 BOARD CLERK GARCIA: Yes, we can.

21 SARAH DESLAURIERS: Excellent. Thank you. Good  
22 afternoon, Chair Randolph and Board members. My name is  
23 Sarah Deslauriers. And I am the Climate Change Program  
24 Manager for the California Association of Sanitation  
25 Agencies, or CASA, and we represent over 90 percent of the



1 sewer population across the state. CASA is an association  
2 of local agencies and we do perform essential public  
3 services of cleaning wastewater to protect public health  
4 and the environment, but while also advancing community  
5 resilience through the recovery of renewable resources,  
6 including water, energy or fuel, biosolids, nutrients.

7           Our members full support and are focused on  
8 helping the State achieve carbon neutrality. We believe  
9 the use of renewable biogas as transportation fuel, as  
10 well as biosolids as an organic soil amendment derived  
11 from wastewater treatment plants are critical paths in  
12 achieving this goal, while reliably maintaining these  
13 essential public services for all communities.

14           Anaerobic digestion is a key component of the  
15 solids treatment process at wastewater treatment plants  
16 across California that produces a renewable biogas or  
17 digester gas. By capturing this resource, we avoid  
18 venting it to the atmosphere and beneficially using it as  
19 a transportation fuel, or for onsite heat and power  
20 productions, or for pipeline injection.

21           Digestion also produces a beneficial organic  
22 residual referred to as biosolids, which can be recycled  
23 back to agricultural or natural and working lands as a  
24 soil amendment to displace synthetic fertilizer.

25           Biosolids also sequester carbon, improve soil

1 health, which in turn improves water holding capacity, and  
2 then increases crop yields, all of which are targeted by  
3 the natural and working land scenarios, and we will be  
4 sharing data, which support these valuations, and also  
5 begin to address some of those noted limitations, like not  
6 accounting for offsetting synthetic fertilizer, and not  
7 including carbon sequestration accomplished on croplands.

8           We are concerned about the disconnect between the  
9 this Scoping Plan scenarios to achieve carbon neutrality,  
10 the developing advanced clean vehicle regulatory language  
11 or fleet regulatory language, and the Clean Air Act  
12 timeline requirements that are in place to achieve NOx and  
13 ozone reductions in nonattainment zones.

14           This is especially concerning given the limited  
15 available of heavy-duty zero-emission vehicle technology  
16 for specialty vacuum and jetter vehicles that we need for  
17 our sewers as Steve Jepsen mentioned, and the fact that  
18 near-zero-emission vehicles are available today to provide  
19 continued resilience while achieving NOx reductions.

20           Our members have already been required to invest  
21 in compressed natural gas vehicles fueled by renewable  
22 biomethane, as well as the infrastructure by various  
23 regulatory requirements, including South Coast LEV 96.  
24 And CNG is now showing in all Scoping Plan scenarios for  
25 heavy-duty vehicles, but the definition of NZEVs in the

1 Draft ACV does not support that.

2 We urge CARB to coordinate across these programs  
3 and we thank you for the opportunity to comment today.  
4 And we will be submitting more detailed written comments  
5 for your consideration.

6 Thank you.

7 BOARD CLERK GARCIA: ...so the phone number  
8 ending in 180. We'll hear from Gary Hughes, John Larrea,  
9 and Charles Davidson.

10 Phone number ending in 180, I have activated your  
11 microphone. Please state your name for the record.

12 JON COSTANTINO: Hello. Can you hear me?

13 BOARD CLERK GARCIA: Yes.

14 JON COSTANTINO: Thank you. This is Jon  
15 Costantino. Good afternoon, Chairman Randolph, Board  
16 members, and CARB staff. Im speaking today on behalf of a  
17 number of clients that are focused on reducing their  
18 carbon footprint throughout the different sectors of the  
19 economy. We appreciate the ability to comment and look  
20 forward to more important work that's going to happen  
21 moving ahead.

22 The recent modeling results workshop provided a  
23 partial compass where the landmark policy document could  
24 go. Today's discussion will also help direct staff in  
25 preparing that document. While we need to make sure we

1 take into account the public health and economic impacts  
2 of these scenarios.

3           Some of the important aspects of carbon  
4 neutrality were highlighted today and last week. The fact  
5 that innovation and investment are the keys to success.  
6 CARB's historical policy of all good ideas should be  
7 welcomed should be retained from earlier Scoping Plan  
8 efforts.

9           California has a whole lot of momentum going on  
10 right now to reduce emissions. As we sit here today,  
11 refineries are being converted, lower carbon biofuels are  
12 expanding, CCS project are within days of initial  
13 injection under the LCFS, hydrogen is getting closer,  
14 methane capture is accelerating, and wholesale electricity  
15 decisions are being driven by the price in carbon. New  
16 technologies to reduce industrial heat are coming this  
17 summer and so much more.

18           That's why isn't important for the Board to  
19 direct staff to continue with an open and public process  
20 to develop a broad inclusive plan that takes a realistic  
21 view of innovation and investment opportunities, and that  
22 the obstacles that needed -- that are needed to overcome  
23 and achieves the success include rising energy costs, our  
24 notorious permitting requirements, and the capital needs  
25 and the time to bring this all together.

1           The plan has been described as -- the plan has  
2 been described by staff as being an endpoint document. If  
3 that is true, then it is important that the market signals  
4 drive the path forward, rather than CARB drawing a line on  
5 the road. The most efficient, innovative, and successful  
6 strategies may not even currently be on CARB's radar. The  
7 path to success may look much different in the rearview  
8 mirror in a few years than out the windshield today.

9           So I look forward to the -- continuing the public  
10 process and thank you for your time.

11           BOARD CLERK GARCIA: Thank you.

12           Gary, I have activated your microphone. Please  
13 unmute and begin.

14           GARY HUGHES: Thank you. Good afternoon, Chair  
15 Randolph. Thank you, members of the Board for this  
16 opportunity to speak. My name is Gary Hughes and I work  
17 with the international organization Biofuelwatch. While  
18 we continue to challenge the exaggerated climate benefits  
19 attributed to the expansion of refining and use of high  
20 deforestation risk liquid biofuels in the state, and while  
21 we implore the Board to fully consider eliminating the use  
22 of food as feedstocks for making fuel in a time of an  
23 intensifying global food crisis, my comment today is  
24 focused on the risks embedded in the reliance on unproven  
25 and dangerous carbon dioxide removal technologies as seen

1 in the modeling that is currently central to the  
2 development of the Scoping Plan.

3 Perhaps a bit of history with the fossil fuel  
4 industry roots of direct air capture and the links with  
5 campaigns of climate disinformation will assist in  
6 illuminating this concern.

7 It was back in 1999 that a group of scholars  
8 wrote the first known academic paper advocating for direct  
9 air capture published on behalf of Los Alamos National  
10 Laboratory. One of those co-authors was a former  
11 scientist for Exxon who wrote, "Direct air capture  
12 completely avoids a restructuring of today's  
13 infrastructure. Carbon dioxide extraction from air would  
14 allow the continued use of carbon based fuels".

15 Later the fossil fuel funded think tank American  
16 Enterprise Institute created the Geoengineering Project,  
17 with the head of the project co-writing a paper in 2009  
18 advocating for the scaling up of direct air capture. The  
19 American Enterprise Institute is well known for climate  
20 disinformation and climate denial. The 2009 paper was  
21 actually published by the Copenhagen Consensus Center, a  
22 group infamous for its climate denialism and efforts to  
23 delay real climate action.

24 We must ask how is it that the unicorn of direct  
25 air capture, once the geoengineering crown jewel of the

1 climate denial machine, is now promoted as a central piece  
2 of the climate policy puzzle in California? This history  
3 of fossil fuel industry climate disinformation is not  
4 irrelevant. And we hope that understanding these dynamics  
5 around the promotion of direct air capture as a tactic of  
6 climate deception and confusion campaigns will empower  
7 members of the Board to direct the staff to correct course  
8 on the Scoping Plan by elevating modeling of alternatives  
9 that explicitly acknowledge that reliance on large-scale  
10 carbon dioxide removal, as the IPCC makes abundantly clear  
11 threatens to result in irreversible harm to water  
12 resources and biodiversity, as well as posing severe risks  
13 to social justice and human rights, while failing to  
14 reduce emissions as promised. We need a course  
15 correction.

16 Thank you for your attention to this comment.

17 BOARD CLERK GARCIA: Thank you.

18 John, I have activated your microphone. Please  
19 unmute and begin.

20 JOHN LARREA: Thank you. Good afternoon, Chair  
21 Randolph and Board members. I am John Larrea,  
22 representing the California League of Food Producers. The  
23 League represents industrial food processors with  
24 operations in California, many of which are subject to the  
25 Cap-and-Trade.

1           First, I'm pleased to see that all four scenarios  
2 will apparently allow us to reach the 2030 goals, though  
3 at what cost is still a question. The League will  
4 continue to engage with staff to ensure the most  
5 reasonable, cost-effective, and technologically feasible  
6 scenarios recommended to this Board for adoption.

7           But, speaking to the whole of the analysis in  
8 this presentation, I'm again disappointed to see that not  
9 all available options are being considered, for instance,  
10 the role of nuclear power. I mean you are considering the  
11 complete elimination of combustion one of the scenarios.  
12 For a hard-to-decarbonize sector like food processing,  
13 that represents a huge problem and there must be some  
14 viable alternatives available that make some sense for our  
15 industry, whether in the area of combustion or energy  
16 generation.

17           Now, please don't take this as an endorsement of  
18 nuclear power, but if we are indeed in a climate crisis  
19 requiring immediate action, as we are reminded of on a  
20 daily basis, why are you not considering all options for  
21 the rapid reduction of emissions.

22           Additionally, I'd like to mention that no matter  
23 which scenario is ultimately approved by this Board,  
24 generous and well-targeted incentives will continue to be  
25 a fundamental necessity to achieving any of the State's



1 emissions reductions goals in the industrial sector.

2 I have great respect for the work and the effort  
3 that the Board, and staff, and other experts have put  
4 forth to date. Yet, I can't help but think that ignoring  
5 the role that options, such as nuclear power, might play  
6 in State's efforts to electrify or decarbonize, undermines  
7 the credibility of these efforts to some degree.

8 I hope you, as Board members, agree that CARB  
9 should make the effort, no matter how politically  
10 unpopular it may seem, to be open to all options and to  
11 insist that such options are expertly analyzed and  
12 included in the Scoping Plan recommendation.

13 Thank you.

14 BOARD CLERK GARCIA: Thank you.

15 After Charles, our remaining speakers will be  
16 Sarah Aird, Robert Spiegel, Steven Karen Smith, Alison  
17 Torres and Julia May.

18 Okay. Charles, I have activated your microphone.  
19 Please unmute and begin.

20 CHARLES DAVIDSON: Greetings, Chair Randolph and  
21 Board. Charles Davidson here. Thank you for letting me  
22 speak. I live in Hercules near the Phillips 66 refinery  
23 in Contra Costa County, which is planning on being the  
24 world's largest renewable diesel biofuels refinery in the  
25 world and about 12 miles away from the Marathon Refinery,

1 which is planning on being the world's second largest  
2 biofuels refinery.

3           Despite their renewability moniker, let us be  
4 clear, making refinery biodiesel, or so-called renewable  
5 diesel, from hydrogenated vegetable oils and animal fats  
6 are as energy consuming and carbon intensive to refine as  
7 the world's dirtiest, most dense, and highest sulfur crude  
8 oils. This is because fat and oil molecules are  
9 triglycerides, like the kind that your doctor measures,  
10 and they counterintuitively are far more difficult to  
11 crack than petroleum oils.

12           Marathon proudly claims a reduction in carbon  
13 dioxide greenhouse gases of 60 percent in their renewable  
14 diesel project. However, that 60 percent CO2 reduction  
15 comes entirely from the 60 percent smaller daily  
16 throughput specified by the project and is entirely not  
17 from the decreased carbon intensity of the renewable  
18 diesel itself.

19           Similar for Phillips 66, the facts belie the  
20 case. Despite the shimmer of Marathon's decrease in  
21 throughput, a simple look at the 42 percent increase in  
22 hydrogen made by fossil fuels, combined with our  
23 simultaneous decrease throughput results in a 32 percent  
24 per barrel increase in carbon intensity. Similarly,  
25 Phillips will be producing 37 percent more hydrogen than

1 with petroleum refining and a 36 percent increase in per  
2 barrel carbon intensity.

3           So what we have proposed before us today in  
4 California is a very expensive, publicly funded,  
5 unscientific, and entirely CARB-facilitated carbon bomb  
6 falsely based on their so-called renewable diesel being a  
7 low carbon fuel.

8           Lastly, refinery biodiesel is being funded to the  
9 tune of up to \$3.32 per gallon according to Stratas  
10 Advisors. That could amount to \$5 billion yearly given to  
11 Phillips 66 and Marathon under false pretenses, which  
12 flies in the face of a massive increase in per barrel  
13 carbon intensity and global food security.

14           BOARD CLERK GARCIA: Sarah, I have activated your  
15 microphone. Please unmute and begin.

16           SARAH AIRD: Good afternoon to Chair Randolph and  
17 CARB Board members, CARB staff, EJAC members and the  
18 general public. I appreciate the opportunity to comment.  
19 My name is Sarah Aird and I'm Co-Director of the statewide  
20 coalition Californians for Pesticide Reform, which is made  
21 up of more than 200 organizations across the state and is  
22 deeply engaged with the low-income communities of color  
23 that are most impacted by agricultural emissions in eight  
24 of the largest agricultural counties in California.

25           First, in addition to a climate crisis, we also

1 have an environmental justice public health crisis in  
2 low-income communities of color and agricultural areas in  
3 California. The Scoping Plan is supposed to be addressing  
4 and centering equity and public health in the Scoping  
5 Plan, but has not adequately done so to date. To meet its  
6 equity and health goals, the Scoping Plan must focus on  
7 direct emissions reductions and not on new unproven carbon  
8 capture sequestration technologies.

9           To meet climate, health, and equity goals, the  
10 Scoping Plan must include strategies that support natural  
11 carbon sequestration, but not to counter emission  
12 reductions. They are a critical add-on to emission  
13 reduction targets. In addition, it is critical that  
14 public health and equity impacts for all proposed  
15 agricultural management strategies are assessed, and are  
16 used as limiting parameters for determining acceptable  
17 strategies to be supported in the Scoping Plan. To date,  
18 it seems that while there's been some attention to the  
19 expected benefits of proposed strategies, there hasn't  
20 been an assessment of potential harms posed by proposed  
21 management strategies.

22           Second, we very much appreciate that organic  
23 farming has been included in the modeling, the first time  
24 ever, but want to urge that the current modeling scenarios  
25 are not ambitious enough and should be aiming for 30

1 percent acreage in organic farming by 2030, not by 2045.  
2 That would translate into an organic acreage of roughly 75  
3 to 80 percent by 2045.

4           And then it's frustrating to know that emerging  
5 independent science is showing that CCS technologies are  
6 not living up to the promised carbon sequestration  
7 expectations. And yet, CCS technologies may have  
8 significant harmful impacts on environmental justice  
9 communities, but they are being included in all of the  
10 modeling scenarios, while pesticide reduction strategies  
11 are not being included, when we know that reductions of  
12 pesticides, especially fumigants, will result in better  
13 protection of healthy soils, which mean significantly  
14 greater carbon sequestration, reduction of greenhouse gas  
15 emissions, such as tropospheric ozone, recognized by the  
16 Intergovernmental Panel on Climate Change as the third  
17 most potent greenhouse gas, and nitrous oxide, 300 times  
18 more potent than carbon dioxide from fields, which are  
19 currently being largely ignored in the Scoping Plan draft.

20           These reductions also result in better protection  
21 of community health, air quality, water quality,  
22 biodiversity, and ecosystems. And it is for this reason  
23 that we are calling on California to catch up with other  
24 agricultural economies and adopt some ambitious pesticide  
25 reduction targets, including setting a goal of 50 percent

1 reduction of pesticides by 2030 and Setting a goal of 75  
2 percent reduction of the most hazardous pesticides by  
3 2030.

4           This may seem not feasible. It is feasible. The  
5 European Union has already adopted similar targets and  
6 it's time California catches up.

7           Thank you.

8           BOARD CLERK GARCIA: Thank you.

9           Robert, I have activated your microphone. Please  
10 unmute and begin.

11           ROBERT SPIEGEL: Great. Thank you. Good  
12 afternoon, Chair Randolph and members. Rob Spiegel,  
13 Senior Policy Director with the California Manufacturers  
14 and Technology Association, or CMTA.

15           To begin with, I'd like to extend a thank you to  
16 agency staff for their continued commitment and engagement  
17 with stakeholders throughout the Scoping plan update  
18 process. It's foundational to the development of the  
19 Scoping Plan and it is appreciated by CMTA and our  
20 membership.

21           CMTA participated in the March 15th workshop and  
22 we're currently conducting a thorough review of the E3  
23 pathways and related alternatives. Our initial review of  
24 the alternatives has raised some concerns however.

25           We recognize that pathways was not intended to

1 include an economic cost or a cost assessment, excuse me,  
2 which unfortunately though is critical in determining  
3 feasibility and cost effectiveness of the strategies.

4           For business and industry, we have consistently  
5 responded to the call for carbon emission reductions by  
6 making the significant investments of both human and  
7 financial capital to help the State achieve its climate  
8 policies.

9           What may be required for us in the future is  
10 critical to our industry and business financial planning  
11 efforts. Now, across all of the alternatives, there are  
12 significant challenges associated with future energy --  
13 energy reliability, cost containment, matters of equity,  
14 workforce consideration, and varying degrees of reliance  
15 on technologies that while promising are not deployable to  
16 certain sectors of my industry.

17           As it relates to the energy and electricity  
18 section specifically, an increase in electric loads by 30  
19 to 80 percent by 2035 and 60 to 90 percent by 2045 will  
20 require significant capital and infrastructure expansion  
21 efforts.

22           It's also important to note that manufacturing  
23 undergirds these key components that are crucial, the  
24 cement, steel, plastics, and glass will still be required.  
25 These industries play a critical role in the development

1 of not only the electrical infrastructure, but in the role  
2 of creating zero-emission vehicles, the new appliances,  
3 the energy efficiency upgrades related to building  
4 decarbonization, and providing the technological  
5 innovation to meet the emission goals.

6 We're pleased to see a role for carbon removal  
7 and other technologies for hard to decarbonize sectors.  
8 And we continue to look forward to the future developments  
9 and discussions surrounding the Scoping Plan.

10 Appreciate the opportunity to comment this  
11 afternoon. Thank you.

12 BOARD CLERK GARCIA: Our next speaker is listed  
13 as Steven Karen Smith. I have activated your microphone.  
14 Please unmute and begin.

15 STEVEN SMITH: Thank you, Madam Chair and members  
16 of the Board. My name is Steve Smith and I am with  
17 Phillips 66. So we appreciate and thank you for the  
18 opportunity to comment today.

19 And I'd also like to just thank CARB staff. I --  
20 we at Phillips recognize that this Scoping Plan update is  
21 a major endeavor with significant impacts, and  
22 ramifications, and benefits for the State, and we look  
23 forward to providing comments along the way.

24 So as Phillips, we do operate three petroleum  
25 refineries in California. That do supply fuels, mostly



1 under the '76 brand, including gasoline diesel, jet fuel,  
2 marine fuels, and more recently renewable diesel fuel.

3 We do recognize that the health and the economic  
4 modeling results are still to come from UC Irvine and  
5 Rhodium, but we do see certain pathways really starting to  
6 take form in the modeling output, especially in  
7 Alternatives 3 and 4. And I'll just touch on a few of  
8 those.

9 First, you know, I think we are seeing an ongoing  
10 need for a certain amount of liquid fuels. As I've -- as  
11 you've heard from a few speakers, we at Phillips are  
12 pursuing the production of renewable lower carbon fuels.  
13 And today, we do produce and deliver renewable diesel for  
14 California consumers. We are planning to discontinue  
15 processing crude oil at our San Francisco site within the  
16 next two years, and really provide lower carbon renewable  
17 diesel for long-term, long-haul trucking, railroad  
18 applications, marine applications that are appropriate for  
19 liquid fuel.

20 And we're also optimistic that we'll be making  
21 some sustainable aviation fuel off of that project in the  
22 future. So I think in the Scoping Plan we're just looking  
23 forward to seeing that role for biofuels, for certain  
24 applications spelled out with clarity in the Scoping Plan.

25 I guess other stories we're starting to see

1 develop. We do acknowledge the role for geologic carbon  
2 storage. We've heard a lot about that today, but we, I  
3 think, do anchor in with CARB's view and Lawrence  
4 Livermore's view that there is a role for geologic carbon  
5 storage.

6 And finally, hydrogen. I think that there is a  
7 future for hydrogen in the state. We haven't heard too  
8 much about that today, but we see a strong role for  
9 hydrogen and hope to be part of that picture.

10 So lastly, a few principles for us to all think  
11 about as we move forward that we would encourage. One is  
12 to allow innovation, set emission standards but ideally  
13 without technology man -- mandates, dig deep on cost  
14 effectiveness, and consider aggressive but realistic  
15 timelines.

16 Thank you.

17 BOARD CLERK GARCIA: Thank you.

18 Alison, I have activated your microphone. Please  
19 you unmute and you can begin.

20 ALISON TORRES: Good afternoon, Madam Chair and  
21 Board members. My name is Alison Torres with the Eastern  
22 Municipal Water District. EMWD is a water, wastewater,  
23 and recycled water agency located in Southwest Riverside  
24 County. We provide essential services to a 555 square  
25 mile service area and serve more than 827,000 people.

1           EMWD operates four wastewater plants that  
2 currently treat a combined total of about 46 million  
3 gallons per day. I do appreciate the opportunity to  
4 comment today and the work that staff have put into the  
5 Climate Change Scoping Plan scenarios presented.

6           As a provider of essential public services, our  
7 facilities collect and treat wastewater from our  
8 surrounding communities. And a natural by-product of this  
9 treatment process is wastewater biogas. This is a  
10 non-fossil, renewable, low carbon fuel and it needs to go  
11 somewhere.

12           Beneficial use as a low carbon non-fossil fuel is  
13 a technology available today. And it is critical that a  
14 clear, viable market and pathway for the use of this  
15 biogas is maintained. We are concerned that there is a  
16 disconnect between the Scoping Plan scenarios to achieve  
17 carbon neutrality by 2035 and 2045, and the Clean Air Act  
18 timeline requirements for NOx reductions and ozone  
19 reductions in nonattainment zones. This is especially  
20 concerning given the limited availability of heavy-duty  
21 ZEV technology for specialty vehicles used in our industry  
22 and the fact that near-zero-emission vehicles are  
23 available today.

24           The use of renewable biogas as a transportation  
25 fuel should be incentivized over the use of diesel while

1 the electric vehicle technology and infrastructure market  
2 is developing.

3 I urge CARB staff to ensure coordination between  
4 concurrent programs and strategies, such as the  
5 short-lived climate pollutant reduction programs, Advanced  
6 Clean Fleet Regulation, and State SIP in a way that  
7 maintains a viable pathway for wastewater biogas.  
8 Wastewater biogas provides opportunities for carbon  
9 negative emissions. I also urge CARB staff to ensure that  
10 the Scoping Plan scenario inputs account for the continued  
11 generation and use of this POTW derived biogas. The  
12 Scoping Plan update scenarios also need to acknowledge the  
13 important role of the public wastewater sector in  
14 achieving the organic waste diversion mandates in Senate  
15 Bill 1383 and the use of this wastewater biogas in  
16 near-zero-emission vehicles as a renewable transportation  
17 fuel.

18 As a member of both CASA and SCAP, I'd like to  
19 also echo EMWD's support of the comments made by those  
20 associations. And I do commend CARB staff for the work  
21 put into Scoping Plan update thus far, and I look forward  
22 to the continued opportunity to participate in the  
23 process.

24 Thank you very much.

25 BOARD CLERK GARCIA: Thank you.

1           Julia, I have activated your microphone. Please  
2 unmute yourself and begin.

3           Julia, are you there?

4           JULIA MAY: Can you hear me now?

5           BOARD CLERK GARCIA: Yes, we can.

6           JULIA MAY: Thank you. Julia May, Senior  
7 Scientist, Communities for a Better Environment, CBE --  
8 she or they -- with our community members in Wilmington,  
9 Southeast LA, Richmond, and East Oakland.

10           On a previous comment, we don't dispute that  
11 there's so much carbon in the air that the world needs to  
12 find effective ways to take it out of the air to avoid  
13 catastrophic climate change. But that's very different  
14 from what's presented in the modeling using carbon capture  
15 as an excuse to allow big polluters like oil refineries to  
16 continue to pollute.

17           CARB must make this distinction and start a plan  
18 to phase out oil refineries by 2045. Starting a plan is  
19 not a lot to ask for and is consistent with your long-term  
20 zero-emission transportation goals. It makes no sense to  
21 say there's too much carbon in the atmosphere, so  
22 therefore we should allow refineries to continue  
23 polluting, while we try to capture a fraction of their  
24 continued emissions.

25           CCS cannot put a big dome over refineries. There

1 are hundreds of stacks, including massive boilers, and  
2 heaters, and other combustion sources, plus thousands of  
3 fugitive sources. If a silver bullet existed to fully  
4 cover refinery emissions, air districts would have cleaned  
5 up the toxics long ago. Please don't be fooled by  
6 pie-in-the-sky assumptions. This is a delay tactic.

7           We just remind everyone that the Board's --  
8 including the Board that previous attempts to avoid  
9 addressing refineries failed. Specifically, Cap-and-Trade  
10 did not work. Your inventory demonstrates this. The only  
11 sector that made substantial cuts was the electricity  
12 sector, due to the Renewable Portfolio Standard, not due  
13 to Cap-and-Trade.

14           So market mechanisms failed, because they're  
15 cheap by design. They'd have to be 10 to 100 times more  
16 expensive to have an effect, which will not happen.  
17 They're chosen because they are cheap.

18           The failure of the market mechanisms was known  
19 before California adopted Cap-and-Trade. Let's not repeat  
20 that kind of predictable failure by relying on CCF for --  
21 CCS for oil refineries.

22           On a finer modeling point, we don't understand  
23 why the modeling shows refinery emissions in the CCS  
24 scenarios going down immediately starting in 2022, even  
25 though CCS doesn't exist right now. CARB, I believe,

1 isn't planning to get this on all the refineries until  
2 2030. So we need the detailed modeling assumptions. E3  
3 did a great presenting the results, but we request even  
4 draft versions of the detailed assumptions not  
5 immediately, as soon as possible.

6 We have the technology for a reasoned and just  
7 transition out of fossil fuels by 2045. We must not delay  
8 starting a detailed plan to phase out oil refineries and  
9 their products.

10 Thanks.

11 BOARD CLERK GARCIA: Chair, that concludes the  
12 list of commenters for this item.

13 CHAIR RANDOLPH: All right. Thank you. As this  
14 is an informational item, there is no need to close the  
15 record. So I will bring it back to the Board for  
16 discussion.

17 Dr. Sperling.

18 BOARD MEMBER SPERLING: Thank you very much,  
19 Chair Randolph. This has been a long but very fruitful  
20 and useful exercise. And I do want to commend the staff.  
21 They've done a great job putting together a lot of data,  
22 models, getting a lot of input from communities, EJAC,  
23 experts. And what's really admirable is they've started  
24 with the science, with data, with research, and using  
25 input to -- to frame it.

1           So what they've done, as you Chair Randolph said,  
2 and as Richard Corey indicated, is articulated high-level  
3 strategies for moving forward. And, you know, along those  
4 lines, I do want to especially commend the leadership and  
5 brilliance of Rajinder Sahota for leading this, because  
6 she is the heart and soul of this initiative.

7           So I'm going to offer some insights. And I want  
8 to articulate more succinctly what staff has been hinting  
9 at and highlight some of the key next steps.

10           So I'd like to offer some -- some insights and  
11 context. And that is that what we've heard here so far is  
12 a modeling exercise, which shows if we really look at it  
13 carefully, and do the analysis, and follow up on what --  
14 what's being framed, it clearly demonstrates that it would  
15 be hugely disruptive, hugely expensive to get carbon  
16 neutrality by 2035. You know, any kind of reasonable  
17 assessment would say 2040, 2045 is really as soon as we  
18 can get there. And I'm going to say some more things  
19 about why that's important insight.

20           Now, modeling is really important to identifying  
21 the key strategies, but it's only a framework. And the  
22 details that we follow up with are hugely important. And  
23 they're hugely important for accomplishing our climate  
24 goals and our health goals in the most economic and the  
25 most effective way possible, and doing it in a way that



1 does -- doesn't harm overburdened communities, and ideally  
2 makes these communities, actually all of our communities,  
3 healthier, more affluent, and better served.

4           Okay. So what I mean by details to follow,  
5 that's -- that's all the regulations and incentives that  
6 this agency does, that this Board does, as well as others.  
7 And as we've heard in the testimony, as we see in the  
8 comments, and heard at the workshops, there are advocates  
9 for many, many technologies, many, many different  
10 practices, applied in many different ways.

11           Lesson learned. What we and the other agencies  
12 need to do is adopt robust cost-effective policies. It  
13 would be impossible to adopt regulations and policies for  
14 every technology and every application. And I know the  
15 staff fully understands and appreciates that, because  
16 they're already swamped by all the different actions and  
17 regulations that they're doing already.

18           But the good news is California and CARB, we're  
19 on the right path. We're clearly on a path to massively  
20 reduce greenhouse gases. We have -- we have put in place  
21 over the last 15 years the most sophisticated, the most  
22 robust, the most comprehensive set of policies in the  
23 world on climate.

24           Now, that doesn't mean they're the most ambitious  
25 or necessarily even the best, but we do have a very robust

1 and compre -- comprehensive suite of policies in place.

2           You know, we're ignoring some things like we're  
3 not dealing with aviation, except within our borders.  
4 We're not dealing with international shipping, you know,  
5 because it's not within our jurisdiction. And so, you  
6 know, we're not doing everything perfectly. We're not  
7 doing everything, but we are on the right path.

8           But having said that, another point I want to  
9 make is that the most important contribution of California  
10 is as a model and leader. That's actually far more  
11 important than the actual greenhouse gas reductions we  
12 get. And that's because climate is a global phenomena and  
13 we're just one percent of the problem.

14           So I have a little -- so Richard Corey used the  
15 word, "feasibility", and I heard some other people use it,  
16 and I want to kind of define it with an anecdote that  
17 helps us understand what feasible means. Feasible mostly  
18 is economics, but it's also consumer adoption. It's  
19 impact political and social impacts.

20           But here's a little anecdote, because I realize  
21 most of our Board members weren't here for this little  
22 experience. The little experience I'm talking about is  
23 the black car story. A lot of the staff remember this,  
24 but the Board probably doesn't. So about 15 years ago, 14  
25 years ago, we adopted a rule basically outlawing black

1 paint on cars. And it made perfect technical and economic  
2 sense, because black cars absorb radiation and make the  
3 cars really hot, so therefore you have to have a lot more  
4 air conditioning, uses more energy, more CHCs and HCFs --  
5 CFCs.

6 But as you can imagine, consumers weren't so  
7 happy with this. And actually as a matter of fact Rush  
8 Limbaugh took it on as one of his primary talking points  
9 and, you know, really did make CARB and California  
10 somewhat of a laughingstock, you know, ridiculing us.

11 Now, we didn't actually go all the way through  
12 with it. We pulled back at the last minute, but -- so,  
13 you know, there's a lot of ways of screwing things up, and  
14 even if they seem technically and economically right.

15 Okay. So let me, with that little anecdote, let  
16 me talk about what I think are some of the priority  
17 actions that we, CARB, and other agencies should be  
18 taking, kind of helping us frame, prioritize all -- you  
19 know, we've been hearing so many things here, technologies  
20 and policies.

21 And actually Secretary Blumenfeld talked about,  
22 you know, all of these many actions that are needed. And  
23 so there are many actions needed, but some are a lot more  
24 urgent and a lot more important than others.

25 Okay. So the number one thing -- strategy for

1 us, instead of policies, by far is ZEV cars and trucks.  
2 It is far and above the most important strategy we can  
3 pursue and we are doing it, but we've got a lot more work  
4 to do on that.

5           And that -- by the way, that is for climate  
6 reduction, but it also has huge health impacts. And  
7 something really important here, this is something for us  
8 to be thinking about is that it's actually good for the  
9 economy and good for consumers. And that's a message we  
10 should be articulating more getting out there. So there  
11 will be a bump for another four or five years. There will  
12 be a cost to the economy as we rollout these vehicles.  
13 We'll need incentives and money for infrastructure.

14           But after that, it starts paying back, because  
15 the total cost of owning these vehicles is less than per  
16 gasoline and diesel, and this is for trucks too, probably  
17 everything but the long-haul trucks that story is. So  
18 that's -- that's by far the most important thing we can be  
19 doing.

20           Another important thing is the Low Carbon Fuel  
21 Standard. We've heard a few comments on that, that one of  
22 the things we need to do is tight -- it's a really good  
23 policy, but we need to tighten it up. Industry is moving  
24 faster than we expected. And, you know, indeed, the  
25 coping plan shows that there's going to be a lot of legacy

1 fuels that are going to be persisting and so we need to be  
2 dealing with that.

3 Another one is tightening up the Cap-and-Trade  
4 Program. You know, people question Cap-and-Trade, but  
5 really that's the one policy where we're imputing a price  
6 to carbon, you know, through the whole economy. We have  
7 a -- we have a market economy. You've got to bring a  
8 price to it. There's lots of other things we can be  
9 doing, and should be doing, and are doing, but that's  
10 important.

11 Another one priority is the cement industry.  
12 When we did our first Scoping Plan, we basically ignored  
13 cement. We said it's too hard. There's no other ways of  
14 doing it and we just really were, you know -- had a very  
15 light touch and that's changed. Now, we know there lots  
16 of good ways of dealing with it. And then there's -- so  
17 those are all what CARB can, and should be doing, and is  
18 doing.

19 And then there's all the actions by other  
20 agencies. And, you know, just real quickly -- actually,  
21 the number one strategy for California or the world on  
22 climate is decarbonizing electricity. So I said ZEV cars  
23 and trucks, that's the most important for CARB, but  
24 decarbonizing electricity is the most important overall.  
25 And if you don't, then the ZEV cars and trucks are not

1 really ZEVs.

2           Okay. So there's that. There's PUC and the  
3 Energy Commission working on efficient -- energy  
4 efficiency, fossil gas reduction in buildings. There's  
5 the Resources Agency dealing with carbon sequestration on  
6 natural and working lands. There's the Energy Commission  
7 on charging and hydrogen infrastructure. There's  
8 Department of Food and Ag with N2O, methane, other -- you  
9 know, other activities with working lands.

10           And the last item I wanted to address is actually  
11 one that the Scoping Plan emphasizes, but really doesn't  
12 make sense - sorry - and that's VMT, vehicle miles  
13 traveled. I'm a strong advocate for trying to figure out  
14 what to do about reducing VMT. But if you look at the  
15 data, VMT is going up, not down, despite all of our  
16 efforts. And so there are lots of things we can do. Most  
17 of the things we want to do is not for climate  
18 improvement, but for all the other co-benefits, you know,  
19 creating more sustainable cities, you know, healthier  
20 cities, and economics of cities as well.

21           But let's not get ourselves caught up too much on  
22 trying to do things that are difficult, if not impossible,  
23 to -- think back to Rush Limbaugh for instance.

24           Okay. So just to summarize what I've been  
25 saying. I know I gave a long speech, but I haven't said

1 anything in a long time and this is my first time in  
2 public.

3 (Laughter.)

4 BOARD MEMBER SPERLING: I actually -- I've  
5 been -- I've been sick and have been recovering from an  
6 operation, so this is like really exciting for me to be  
7 out here.

8 (Laughter.)

9 BOARD MEMBER SPERLING: So, you know, to leave it  
10 on a positive note, we really are on a positive -- on a --  
11 on the right path. And I think we really need to keep  
12 that in mind. What we need to -- there's lots of  
13 challenges. There's lots of bumps. There's lots to worry  
14 about, but basically we have most of the right policy  
15 instruments in place. We need to refine them. We need to  
16 extend them. We may need to make some adjustments to  
17 them, but we're on the right trajectory. We're in a  
18 really good place. And we are a model. And we're  
19 benefiting. You know, I said the most important thing is  
20 being a model and a leader, but being a model and a leader  
21 in our case is actually we get a lot of benefit like from  
22 what I talked about with vehicles going to ZEV cars and  
23 trucks. We're going to benefit economically from being a  
24 leader in that.

25 So thanks for your indulgence. Much appreciated.

1 And I'll leave it to my other Board members to tell me  
2 where I'm wrong.

3 (Laughter.)

4 CHAIR RANDOLPH: Okay. Thank you.

5 Dr. Balmes.

6 BOARD MEMBER BALMES: Thank you, Chair Randolph.

7 Well, I agree with a lot of what my fellow UC  
8 professor said, but he left out an important area --  
9 actually two where I think California needs to lead. And  
10 I'll start with praising staff for modeling carbon  
11 emissions and sequestration in natural and working lands.  
12 This is much more robust than in previous Scoping Plans.  
13 And so I really appreciate it, because, in fact, dealing  
14 with wildfires is a hugely important issue for California  
15 and the mountain west in general, and in effect around the  
16 world. So we need to lead with regard to reducing the  
17 risk of catastrophic wildfires as the climate increases  
18 the risk of those fires and development in the wildland  
19 urban interface threatens the people who live there and  
20 the society they has to deal with trying to save their  
21 structures.

22 So the amount of investment that we'll have to  
23 make to manage our forests. You know, the modeling  
24 mentioned that we have to manage the forest and it showed  
25 that the forests were the biggest contribution to carbon



1 emissions in the time frame that was modeled. The amount  
2 of investment is huge. California has started to get a  
3 little more serious. We're currently supposed to be doing  
4 forest management for one million acres a year. I don't  
5 think we've come close to that in any previous years.

6           And, in fact, because last year was such a bad  
7 wildfire year, the U.S. Forest Service stopped doing  
8 prescribed burns, because of the concern about risk of new  
9 fires. So the forest management issue is huge. And I  
10 thought that the -- I mean, I know we'll have more  
11 discussion about the Scoping Plan in the future, but  
12 it's -- I have to elevate this problem. And, you know,  
13 again, it's not something that CARB controls. We have to  
14 work with sister agencies, but we can highlight the  
15 magnitude of the problem in the Scoping Plan.

16           And just to give an example, I don't have numbers  
17 for California at my ready, but the bad wildfire season,  
18 brush -- bush fire in Australia, the 2019-2020 fire season  
19 for Australia, the amount of climate forcing emissions was  
20 equal to the entire -- entire year of other sources of  
21 greenhouse gas emissions in Australia. And I again don't  
22 know the number for California. But last year was such a  
23 bad wildfire year in terms of acres burned that I think it  
24 may not be as much as motor vehicles, Professor Sperling,  
25 but it's a huge cont -- contribution. It's only going to

1 get worse. So that's -- that's the number one area where  
2 I would add on to Professor Sperling's comments.

3           And the other one is agriculture. And I actually  
4 have to take some issue with Secretary Blumenfeld who  
5 said, you know, pesticides can't be included in the  
6 Scoping Plan. Well, I realize we don't have data about  
7 greenhouse gas emissions from pesticides. We do recognize  
8 it's a health burden, especially for low-income  
9 communities that -- of color that live near agricultural  
10 lands. But we need it -- as I said last Board meeting, we  
11 need to transform agriculture to be more sustainable, less  
12 synthetic in terms of pesticides and fertilizer. It's a  
13 huge transformation that is needed and it's -- you know,  
14 we've -- as Professor Sperling said, we've made a lot of  
15 progress towards zero-emissions vehicles. We've made a  
16 lot of progress towards renewable power, but we need to  
17 make a lot of progress with regard to natural and working  
18 lands, and that includes both forest management and  
19 agriculture. And if we made that transformation of how --  
20 of agricultural practices, then we wouldn't have to use  
21 pesticides that are such a health problem, and an  
22 inequitable health problem in particular.

23           And I guess finally I would have to say, and this  
24 is politically unwise of me to say, but trying to give  
25 everybody in the state a gas tax re -- or gas re -- gas

1 price rebate makes no sense to me, when we're trying to  
2 reduce greenhouse gas emissions from motor vehicles with  
3 combustion engines.

4 I can see a targeted -- targeted support for  
5 low-income people, but I have two cars, one of which is a  
6 battery electric. If I get \$400 for my battery electric  
7 car, plus \$400 for my wife's internal combustion engine  
8 that \$800, I'd rather see it go to -- towards forest  
9 management. And, you know, maybe we don't have the  
10 ability to do all the forest management that we need to do  
11 now. We can put it into a fund, because we're going to  
12 need that money down the road, so -- and also, we always  
13 talk every Board meeting about all the incentive dollars  
14 that are needed to move towards zero-emission vehicles  
15 today. We talked about all the incentives needed for --  
16 to move towards ZEV commercial harbor craft. Again, why  
17 are we going to put \$9 billion towards dealing with gas  
18 price rebates.

19 Thank you.

20 CHAIR RANDOLPH: Thank you.

21 Dr. Pacheco-Werner.

22 BOARD MEMBER PACHECO-WERNER: Thank you, Chair.

23 And, you know, thank you, everyone, for their  
24 contributions. Sorry. I'm a little bit under -- under  
25 the weather today, but I do want to ask several questions

1 here. And I know that my line of questioning may sound  
2 like I'm asking you to defend your dissertation, but I  
3 just want to make sure I clarify some of the assumptions  
4 that were made during the comment period and how those  
5 align with your work that you've arrived to today, and  
6 also some questions about the next steps.

7           This is such a critical process that I know you,  
8 along with so many in our public, has spent countless  
9 hours towards, so I just want to make sure we kind of  
10 attend to some of these -- some of these questions, some  
11 made by our EJAC and some made by -- by the public.

12           And so I -- if I can, maybe I'll ask all my  
13 questions first and then -- and then I really would love  
14 to hear back on -- on these.

15           The first question is on the modeling of the  
16 refining operations, one of the EJAC members made a  
17 comment about the modeling being based on hypotheticals  
18 versus actual operations. Can you please respond as to  
19 how your modeling compensates for that?

20           In this -- the next question is in terms of the  
21 comments from the waste management industry, their -- the  
22 use of their natural gas, can you please clarify for me  
23 how you have or have not included the use of that gas from  
24 that -- from just that particular industry into your  
25 scenarios.

1           The third question is there were comments made on  
2 the effectiveness of carbon capture and sequestration.  
3 Can you please let me know a little bit more about where  
4 CARB stands on the -- on this technology in terms of its  
5 effectiveness?

6           The next question -- and if you need me to repeat  
7 any of then, I'm happy to do so. The next question is  
8 that there were comments during the presentation as to  
9 adjusting the modeling at a later date. Does that mean  
10 the modeling we saw today will be based -- will be  
11 modified based on the health and economic analysis to come  
12 or modified for some other reason?

13           And then my last question is around the -- there  
14 were -- there were comments made on -- on sort of like the  
15 global impact of -- of solar and battery generation. And  
16 I just wanted to see if you could respond to that comment  
17 in terms of how that does or does not fit into your  
18 modeling or are we just -- you know, are we -- are we just  
19 focused on really what this means for -- for reductions in  
20 California or globally?

21           And I would like to say in terms of -- of  
22 comments, that I -- just one comment that I do look  
23 forward to the creation of a permanent EJAC Board that  
24 looks like and is the face of what California looks like,  
25 and, you know, from regions to demographics, to

1 disproportionate impact. So looking forward to that  
2 process when it comes.

3 Thank you.

4 CHAIR RANDOLPH: Staff, you want to respond to  
5 Dr. Pacheco-Werner's questions.

6 DEPUTY EXECUTIVE OFFICER SAHOTA: Good afternoon.  
7 This is Rajinder. I'm happy to respond to the questions  
8 and may ask Matt Botill the Division Chief for ISD to step  
9 in on one of them.

10 So there was a question about the modeling for  
11 the refinery. And that was about a hypothetical versus  
12 operations. There is a whole discussion in the Scoping  
13 Plan about uncertainty. There is going to be uncertainty  
14 about the types of technologies, the permitting, the  
15 timing, the capital costs to do these projects. And  
16 there's also going to be uncertainty about the  
17 configurations at any of the facilities where you may  
18 apply some of this technology.

19 And so we are going to be putting together  
20 information that speaks to historically how effective CCS  
21 has been applied to refinery installations, because as one  
22 of the speakers highlighted, there are multiple smoke  
23 stacks on any installation site. And so it is important  
24 for us to be able to say with some amount of confidence  
25 that we think we can capture a high amount of emissions

1 with CCS on that site.

2           But that's not the only uncertainty, which is  
3 between what we're modeling versus what's on the ground.  
4 There's a lot of uncertainty in here and we're going to  
5 try and capture that in the analysis as well. And again,  
6 this is a plan. It is a guiding post -- an actual  
7 guidepost or where to go with projects and regs. And so  
8 as we think about programs and policies to actually go  
9 after the refining sector, or the energy sector, we get to  
10 have more detailed analyses, where we may find out the  
11 capture rates are different or that different technology  
12 options are now available, or that there are better ways  
13 to do the greenhouse gas reductions and get better  
14 co-benefits than what we outlined in the snapshot, which  
15 is the Scoping Plan with the information we have today.  
16 So that's the first question.

17           We talked about CCS effectiveness and technology.  
18 I think that there's been a bit of a lag in the  
19 conversation on CCS, especially in the Scoping Plan. We  
20 did have two full day workshops, one in 2019, and one in  
21 August of 2020 -- or 2021. And we talked about the state  
22 of the technology, the effectiveness of the technology,  
23 the science behind the technology. And there's actually  
24 20 years of testing that shows that CCS is safe and  
25 reliable.

1           There is data that's over two decades old at the  
2 Department of Energy that talks about how they've been  
3 able to successfully sequester 14 million metric tons that  
4 have been injected. There's also been projects that have  
5 been in operation since the 70s and 80s globally. And  
6 again, more than half of the installation for large-scale  
7 CCS are in North America.

8           So there's a long history and a lot of detail on  
9 CCS that I think needs to be part of the conversation.  
10 And I think when Secretary Blumenfeld said that he'd like  
11 to be part of the conversation and Chair Randolph talked  
12 about feasibility and the tools on the table, we're  
13 hopeful that as part of moving forward, we can have a  
14 chance to talk about some of that data, some of that  
15 information and bring it into the conversation.

16           In hearing all the comments to date and just  
17 thinking about the information gap between what's been  
18 existing in the workshops and what the perception is on  
19 CCS, I think it's also important to highlight that for the  
20 longest time we've all focused on removing or reducing  
21 emissions from the sources that produce emissions. And  
22 it's only been recently in the IPCC report that removing  
23 carbon out of the atmosphere or capturing carbon at the  
24 smoke stack has taken on greater importance.

25           So while this technology has been around for



1 quite a bit of time and there's been programs at the  
2 federal level, including investment opportunities and tax  
3 credits, it hasn't been looked at seriously, because as  
4 policymakers we've focused on trying to reduce emissions,  
5 not capture carbon, or remove carbon from the atmosphere,  
6 but the science now says that has to be part of the  
7 solution. And so that's why you're hearing it picking up  
8 pace in the conversation, not just in California, but  
9 nationally and internationally.

10           The adjusting for the modeling later, we are  
11 actually going back and looking at some of the comments  
12 that we got at the workshop last week, doing some  
13 verification, so the inputs that we had in the modeling  
14 that we put out last week in making minor tweaks to some  
15 of the assumptions. For example, I think in slide 8 or 9  
16 there was assumption of a carbon intensity of 25 percent.  
17 That was a constraint that was not meant to be carried  
18 through. We will actually be looking at removing that  
19 constraint, not a wholesale change of those scenarios, but  
20 removing that constraint and then talking with staff about  
21 starting workshops this summer on LCFS related to  
22 accelerating the carbon intensity going into 2030 and then  
23 past 2030, because the modeling shows that we need more  
24 clean fuels to come on faster. And LCFS is an excellent  
25 tool for helping to subsidize and to get money into the

1 clean fuels sectors of the economy.

2           The last question was about -- well, the last  
3 question I'm going to take out of that list is about  
4 global implications of solar and battery. When we talk  
5 about solar installations and solar power, what we're  
6 really talking about is the power consumed in California.  
7 And as you're aware, California is an -- is a huge  
8 importer of power. So that power can be created in  
9 California, sited in California, or sited in -- anywhere  
10 in the Western U.S. and the west.

11           We've seen issues related to permitting and  
12 siting on large scale renewable installations, like solar  
13 farms, wind farms. And we know that there are efforts to  
14 build wind farms and solar farms in states around --  
15 surrounding us. To the extent that power comes to us,  
16 it's not going to generate emissions elsewhere. It is  
17 renewable power and it will help decarbonize our  
18 electricity grid and grow our electricity grid, because  
19 the load growth goes increase.

20           When we -- I think you also asked a question  
21 about batteries. Right now, what we're identifying is the  
22 amount of zero-emission vehicles that we think we need to  
23 meet the Governor's Executive Order. The quantification  
24 is really about tailpipe emissions, not the imbedded  
25 emissions that are going to be in the batteries or the

1 steel that builds those vehicles, because our accounting  
2 framework and our jurisdiction as the State of California  
3 are tailpipe emissions in the state and then also  
4 emissions of the smoke stack. So that is a constraint in  
5 which we live in and work in, because that is where our  
6 target for 2020, 2030 is set. And those are the sources  
7 over which we have direct control in the state of  
8 California.

9           There will be a discussion that some of our  
10 programs and some of our actions actually have a reach  
11 farther than California, but we're not going to be able to  
12 quantify it and we can't regulate those anyway outside of  
13 our border.

14           There was a question about the waste sector,  
15 natural gas, and how the -- a renewable gas from the waste  
16 sector was being directed in the modeling. And for that  
17 one, I'm going to ask Matt Botill to jump in.

18           Thank you.

19           INDUSTRIAL STRATEGIES DIVISION CHIEF BOTILL:

20           Yeah. Thank you. Matt Botill, Division Chief  
21 for the Industrial Strategies Division. So we heard a  
22 number of comments from folks that work in the waste  
23 sector about RNG and gas. And I'll just take a step back  
24 and flag that, you know, under 1383, we've been directed  
25 to reduce our short-lived climate pollutants, including

1 methane, by 40 percent by -- 2013 levels by 2030. And so  
2 that's really driving some of scenario assumptions to make  
3 sure that we hit our methane reduction targets.

4           And some of the ways that we do that are through  
5 capture of fugitive methane emissions from waste  
6 activities. And so we -- I mean, the modeling included  
7 the strategies to hit our 1383 requirements by 2030. And  
8 that in and of itself by looking at anaerobic digestion  
9 technologies, at wastewater treatment plants, at dairies,  
10 at landfills in terms of gas capture produces some RNG  
11 that is available as an energy source for the broader  
12 economy, whether it's in transportation, or the industrial  
13 sector, or as replacement for fossil gas in the  
14 residential and commercial sectors.

15           So we were able to put in some RNG quantities  
16 into the modeling. It's small in terms of the total  
17 energy value, but it does show up in terms of being able  
18 to be deployed as either a natural gas replacement or for  
19 hydrogen production in the modeling.

20           CHAIR RANDOLPH: Okay. Thank you.

21           Dr. Pacheco-Werner, did that answer your  
22 questions?

23           BOARD MEMBER PACHECO-WERNER: Just one clarifying  
24 question. Since you are grouping, in terms of the RNG,  
25 the waste management and the ag capture, is there any

1 prioritization of either one or the other in the modeling?

2 INDUSTRIAL STRATEGIES DIVISION CHIEF BOTILL:

3 Yeah, good question. So the strategies are a  
4 little bit different. For the wastewater sector, we're  
5 assuming that we'll be able to hit our 1383 targets  
6 predominantly based off of reductions in methane  
7 emissions, capturing those methane emissions from  
8 anaerobic digestion and using that RNG. On the ag side,  
9 there's different strategies. So there's the opportunity  
10 reduce those methane emissions through both digesters,  
11 through alternative manure management practices, through  
12 reducing the enteric emissions that come from cattle  
13 digestion, as well as opportunities to reduce methane  
14 emissions from reducing herd sizes in the dairies. And so  
15 there is different strategies across the alternatives to  
16 get to those methane reduction numbers.

17 Some rely more on digestion, and capture, and use  
18 of RNG and others rely more on these alternative  
19 strategies that aren't so heavily dependent on digesters.  
20 So there's just differences across the scenarios on the  
21 utilization on the ag side for RNG.

22 BOARD MEMBER PACHECO-WERNER: Thank you. That's  
23 all

24 CHAIR RANDOLPH: Okay. Thank you.  
25 Supervisor Serna.

1           BOARD MEMBER SERNA: Great. Thank you, Chair.  
2 And let me also start by thanking staff. This is a -- I  
3 think a very good body of work. And this is the third one  
4 that I've had the chance to be a party to as a member of  
5 this Board. And I understand that this is an iterative  
6 process, that, if I understand correctly, staff is simply  
7 looking for some general feedback today from the Board.  
8 It's not an action item. But the feedback you do receive  
9 will be used to hone the Draft Scoping Plan even further.  
10 And the schedule in front of us for the balance of the  
11 year, we have a number of other opportunities to certainly  
12 continue to do that and hear from the public and  
13 stakeholders.

14           So in the spirit of giving you some general  
15 feedback, I will say this is extremely -- an extremely  
16 timely conversation and an item to be considered today for  
17 me, because last night, I left our Board of Supervisors  
18 Chambers at about 11:30 p.m., after a 5-hour hearing on  
19 our draft Climate Action Plan. And I may have other  
20 colleagues here on the Board that also in their respective  
21 local jurisdictions are perhaps engaged in similar  
22 activities.

23           But I want to underscore that not only is the  
24 Scoping Plan obviously something that has to, you know, be  
25 done no later than every five years. Relative to siting

1 in place, implementing basically an action plan to get us  
2 to our carbon reduction goals. But it's being used more  
3 and more by local government as a -- as a bit of a general  
4 template for how their own climate action plans will  
5 develop and as a basis for some of the -- or many of the  
6 strategies that we would employ locally to achieve our own  
7 carbon reduction or even carbon neutrality goals at the  
8 local level, the municipal and the county levels.

9           One of the things that I'd like to make mention  
10 of, and hopefully it resonates with staff to the point  
11 that perhaps the next time this Board and the public  
12 receive an update, or as I mentioned, we continue to  
13 fine-tune it, is that while the State of California  
14 certainly doesn't directly govern land uses, that's  
15 largely left to municipalities and counties to govern  
16 that -- to govern that activity, much of the discussion  
17 that we had last night centered around infill development  
18 versus greenfield development, and VMT reduction. And as  
19 Dr. Sperling pointed out, perhaps that's something that is  
20 not just frustrating him, but others in terms of it going  
21 in the wrong direction.

22           But I think we can all understand that there is a  
23 direct relationship between how we plan our new  
24 communities and what we can expect in terms of VMT in the  
25 future.

1           One of the things that I'd like to suggest is  
2 that perhaps we have a stronger connection that is  
3 directly referenced in the Scoping plan and perhaps it's  
4 best couched in terms of how we might work more  
5 collaboratively with OPR to provide guidance for local  
6 governments as more and more are doing their -- or  
7 pursuing a Climate Action Plan, or something similar, so  
8 that we at the State in the development of the Scoping  
9 Plans, and with each one that we update in the future,  
10 there's some acknowledgement of the menu of options that  
11 could be articulated at OPR for local governments to, you  
12 know, begin to employ with the direct intent to achieve  
13 the same basic objectives of the Scoping Plan, but at the  
14 local level.

15           I didn't hear a lot of that in the presentation  
16 quite frankly. And I just kind of, you know, pondered on  
17 the fact that this is a very different conversation today,  
18 than it was last night for me, because of that difference  
19 in authority over land use regulation. But I would argue  
20 that it is probably one of the most important when it  
21 comes to again achieving the goals of the Scoping Plan.

22           So I would just offer that up and strongly  
23 suggest that staff and other people much smarter than I  
24 can think about how we weave that into our further --  
25 future activities as we get closer to a final Scoping



1 Plan.

2 Thank you, Chair.

3 DEPUTY EXECUTIVE OFFICER SAHOTA: Board Member  
4 Serna, this is Rajinder. And you're right, it wasn't part  
5 of the modeling fights that we had today, but just like in  
6 the last Scoping Plan, we are going to speak to how all  
7 levels of government need to be rowing in the same  
8 direction to achieve the outcomes that we're calling for  
9 for GHG and air quality reduct -- or air pollution  
10 reductions.

11 And so there will be a section that is very  
12 specific about local action, whether it's CEQA, whether  
13 it's permitting, and where we're trying to get to overall  
14 in the state, and acknowledging that many of the decisions  
15 around the things that need to happen on the ground, the  
16 projects that we need to bring new energy on, the projects  
17 that we need to have infrastructure, or sustainable  
18 housing, and reduction strategies from VMT, those are very  
19 clearly with local government. They're not with the State  
20 and so we need to be partners there.

21 BOARD MEMBER SERNA: Thank you for that. I just  
22 think we can be more obvious about the fact that we do  
23 have this new tool that we're -- that we, local  
24 government, are beginning more and more to embrace, which  
25 is the Climate Action Plan. And so that may be something

1 that we want to clearly not just mention in the Scoping  
2 Plan, but, you know, acknowledge that these -- that the  
3 State's Scoping Plan efforts really do provide a  
4 springboard for local -- local governments to go through a  
5 similar exercise, but at a different scale.

6 So thank you for that.

7 DEPUTY EXECUTIVE OFFICER SEGALL: If I could  
8 speak to that just briefly. So it's really I think to us,  
9 and our teams are working closely together on this, that  
10 climate action plans are a particularly important tool.  
11 Now, some jurisdictions may not have a formal Climate  
12 Action Plan, but still can take affirmative action  
13 consistent with the Scoping Plan.

14 So one of the themes that you'll see throughout  
15 our collective work is making this usable for local  
16 officials, translating that into sort of CEQA working and  
17 to local government working tools to be clear that action  
18 is consistent with the Scoping Plan, whether that's  
19 promoting dense infill affordable housing, promoting say  
20 vehicle charging, promoting building decarbonization in an  
21 equitable way. All are consistent, all are appropriate in  
22 providing many of the tools to help downscale some of  
23 these State targets.

24 And one of the truths here is that the State has,  
25 you know, as Professor Sperling noted, a really important

1 portfolio of programs and policies, but they depend upon  
2 local action to be implemented, not just effectively, but  
3 equitably. So it's just critical to partner with local  
4 government officials. In fact, that is critical to the  
5 success of the Plan.

6 BOARD MEMBER SERNA: Thanks, Craig.

7 CHAIR RANDOLPH: Board Member De La Torre.

8 BOARD MEMBER DE LA TORRE: Thank you.

9 I'm going to associate myself with Dr. Balmes  
10 remarks on a couple of things. One, well, he mentioned  
11 wildfires, and so I'll start there. Eighteen of the 20  
12 largest wildfires in California history over the last  
13 hundred years or so have occurred since 2003, and four of  
14 those were last year. So for about 10 years now on this  
15 Board, I have been asking for wildfire to be included in  
16 our thinking because it's happening. To not include it in  
17 the modeling, to not include in our thinking is to deny  
18 reality.

19 And it has a couple of impacts. One, it raises  
20 the bar, without a doubt, in terms of how many GHGs, we  
21 have to compensate for, and two, it forces actions that we  
22 haven't done before. The working -- the natural lands  
23 impacts that were -- that were mentioned earlier. So,  
24 yes, it makes things harder, but it makes things more  
25 real. And to not do that -- and this is in private

1 meetings for the last 10 years I've been saying, we're  
2 cheating. So to the extent we have a realistic number,  
3 and I know it's a moving target, then we are not cheating.  
4 We are reflecting reality. And our controls that we do,  
5 whatever it is -- whatever policy direction we take to  
6 control that are realistic and going to have real impact.  
7 So thank you for doing that. I'm really, really pleased  
8 that we're finally going to have that embedded.

9           Second, again with Dr. Balmes' comments, I  
10 absolutely agree with him on the gas tax refund, not a  
11 good idea. Oil companies have shown time and again that  
12 if you give them something, there is no guarantee -- in  
13 fact, most of the time they -- they're -- they go the  
14 opposite way of just taking the money and raising prices  
15 and so the consumer doesn't see the difference.

16           The -- I -- I've seen these pricing analytics for  
17 the last 20 years. And there is not rhyme or reason to  
18 oil imports, oil production, refining. It just is  
19 completely random. The profits keep going up and there's  
20 no reflection in reality for consumers. So thank you, Dr.  
21 Balmes, for mentioning that. I was going to, but since  
22 you did, it's the right thing.

23           And then finally, my mantra every time we have  
24 this conversation. There were three sectors that did not  
25 contribute to us reaching our 2020 targets and I'm going

1 to repeat them again, and I'm going to repeat them every  
2 time we have this conversation, transportation, natural  
3 and working lands, and short-lived climate pollutants did  
4 not contribute to us reaching our 2020 targets.

5 A lot of folks were mentioning about, you know,  
6 how we get there for 2030. We do not get there if those  
7 three sectors do not contribute period. And so, for me,  
8 that's what I want to get to and what we really need to be  
9 focusing on, if we're going to hit that 2030 target that  
10 is going to be very difficult to reach.

11 So with that, thank you.

12 CHAIR RANDOLPH: Thank you.

13 Board Member Takvorian.

14 BOARD MEMBER TAKVORIAN: Thank you, Chair, and  
15 thanks to the staff, and the EJAC members, and the  
16 stakeholders who were here again today. I really  
17 appreciate this presentation today, because it's the first  
18 one I think to the Board -- and I want to emphasize that,  
19 to the Board, because I know that you've been making  
20 presentations, staff, in -- at a very technical level and  
21 really discussing the strategies. But I think this is the  
22 first time for this Scoping Plan, that the Board has  
23 actually had a chance to reflect on the actual strategies  
24 that are being modeled, and it allows the Board and the  
25 public to discuss the assumptions and the proposed

1 strategies.

2 I think it's missing some key elements and I'm  
3 going to agree with Member De La Torre on the last thing  
4 that he said in regards to what is missing, but I'll get  
5 to that in a second.

6 My questions I think are more about the process  
7 by the Board will evaluate the policy proposals. So  
8 that's -- that's what my questions are going on. And I  
9 hope if you can start to answer those questions today,  
10 that would be awesome, if not, that we begin to  
11 incorporate this into our next discussion.

12 So I want to recognize that that -- the  
13 difficulty of incorporating diverse assumptions into each  
14 of the scenarios. I think that you had to make some  
15 choices and you did that, but I think it's clear from the  
16 Board discussion and from the public discussion that a  
17 combination of strategies as -- is necessary. So the  
18 question is how will the Board be able to mix and match  
19 scenario inputs prior to receiving the Draft Scoping Plan,  
20 because clearly from just Board comments and the public  
21 comments, there's -- there's different ideas about how  
22 these alternative strategies can be achieved. So I want  
23 to -- wanted to ask about that and ask you to talk about  
24 that first.

25 And I think that we need to be talking about

1 these alternatives from a high level first and agree on  
2 the criteria, which seem to be is it feasible, is it  
3 affordable, does it reduce GHGs and air pollution  
4 significantly, does it improve health, does it reduce  
5 impacts in disadvantaged communities. So the question is  
6 how will the Board receive the information to allow us to  
7 evaluate against those questions and probably others? But  
8 to me, those are kind of the core questions that the Board  
9 should be able to answer as it makes a decision about what  
10 the Draft Scoping Plan should look like.

11 So transportation as an example. I want to say  
12 so slide 9 assumes complete ZEV transition by 2035, which  
13 would require massive funding to buy out non-ZEV vehicles,  
14 which I think will likely make it infeasible. So I'd want  
15 is to know just on this one strategy what is the cost of  
16 that buyout? How could those dollars be applied to the  
17 mass transit system which would reduce VMT over --  
18 overall?

19 And I think in the same way that Dr. Balmes  
20 lifted up the transformation of the agricultural industry  
21 to reduce the use of pest -- pesticides, we should be  
22 considering that same type of transformation for  
23 transportation. It doesn't begin with cars and end --  
24 begin and end with cars and trucks. We really need to  
25 think about this in a more global way. So that's one

1 example where I think we could dig into and want more  
2 information. So the question is what -- what's the cost  
3 of that buyout?

4 And I feel like I missed, if it's there, the  
5 detail of where the potential transition of heavy-duty  
6 vehicles is reflected and how is that reflected in terms  
7 of a contribution.

8 How are the market mechanisms in Cap-and-Trade  
9 reflected in the alternatives, because they're not called  
10 out in any of the definition of the alternatives, but I  
11 know that there's consideration of them. In the same way,  
12 how does the Board evaluate CCS as a strategy? Clearly,  
13 there's disagreement. There's disagreement about the  
14 science. So when do we have that conversation in order to  
15 dig into that?

16 And lastly, I just want to mark that the public  
17 health equity analyses that we've talked about in other  
18 meetings and that I think a lot of us and members of the  
19 public are really looking forward to has to also be a set  
20 of criteria that we are evaluating the strategies against.  
21 So how much health benefit are we receiving from each of  
22 those measures as well as the strategies overall?

23 So those are my questions. I know those are a  
24 lot and I can go pack and repeat them, if necessary. And  
25 I know that some of them are more overarching and perhaps



1 there's another time to have those discussions, but I  
2 wanted to get them on the table.

3 So thank you.

4 CHAIR RANDOLPH: Thank you.

5 I think we will probably be able to tackle some  
6 of -- of the questions that you asked and some of them  
7 might require a little more follow-up. I mean, I will say  
8 from a process standpoint, my understanding, and staff can  
9 correct me if I'm wrong, is that there's not going to be  
10 another round of modeling before the draft, but there will  
11 be an opportunity as we discuss the draft to ask for some  
12 additional modeling. Well, I don't know to the extent to  
13 which we would be able to ask for -- for additional  
14 modeling specifically, so I'm going to turn it over to  
15 staff, so that they can give you sort of the proper steps  
16 that are going to happen as we evaluate the draft.

17 DEPUTY EXECUTIVE OFFICER SAHOTA: Sure. Happy to  
18 answer that question. I think it's worth talking about  
19 how intensive the modeling can be, so that you have an  
20 understanding of why it's so hard for us to turn something  
21 around quickly when somebody has a new idea or new  
22 legislation comes out.

23 Just to do the PATHWAYS modeling, it took us,  
24 once we got the inputs in December, through early  
25 mid-March to get the results back, fact check them, gut

1 check them, make sure they made sense, and then pass on  
2 those results to UCI to do the health analysis, the air  
3 quality analysis. And then that all goes to Rhodium to do  
4 the economic analysis. So there's a sequencing here that  
5 builds off of the very first model, which is PATHWAYS for  
6 emissions. And the modeling you saw today was PATHWAYS.

7           What we will have available at a public workshop  
8 in the coming weeks is information on the economics of the  
9 different scenarios. We will have tables, as we're  
10 required to do under AB 197, on the costs for the  
11 different measures. So I think Board Member Takvorian  
12 when you asked what was the dollar amount for that measure  
13 where we have to buy back vehicles, we will have that data  
14 and those numbers available as part of the Draft Scoping  
15 Plan.

16           And that affords everyone an opportunity to look  
17 at the merits of not just the individual measures, the  
18 deployment rates and the technology that we're choosing,  
19 but also how much that's going to cost, and also the air  
20 quality benefits. And there's an opportunity to say,  
21 well, we don't want to spend it on Measure Y. What if we  
22 did Measure Z? And as part of the discussion for the  
23 first draft of the Scoping Plan that happens in June, the  
24 Board can then have a discussion do we want to do away  
25 with some of the measures as part of the Final Scoping

1 Plan and settle on -- one or two -- oops, sorry about  
2 that. This will be bad.

3 I just broke a toy from -- sorry. I just broke a  
4 bracelet that my six-year old nephew made me for my  
5 birthday a couple weeks ago. Hopefully, they're not  
6 watching.

7 (Laughter.)

8 DEPUTY EXECUTIVE OFFICER SAHOTA: But, yes, so  
9 there's an opportunity to, after the first draft of the  
10 Scoping Plan, have all that data available, conversation  
11 with the Environmental Justice Advisory Committee, amongst  
12 yourselves, and even consider new legislation, because  
13 there's always the potential that, at any point, we could  
14 get new legislation that accelerates something, introduces  
15 a new program, or a new feature that we also have to  
16 include in the modeling before we settle on the final  
17 Scoping Plan.

18 CHAIR RANDOLPH: Okay.

19 BOARD MEMBER TAKVORIAN: If your six-year old  
20 nephew is watching, that we should offer him a job now  
21 or -- sorry.

22 (Laughter.)

23 BOARD MEMBER TAKVORIAN: But I -- but I don't  
24 under -- I don't understand then how does the health  
25 analysis get incorporated, given the flow that you just

1 described.

2 DEPUTY EXECUTIVE OFFICER SAHOTA: So once we have  
3 the data from the health analysis, we get a chance to look  
4 at the scenarios, and the different features, and decide  
5 do we want to accelerate some things because the health  
6 analysis indicates we could get more reductions for GHGs  
7 or more health benefits from those actions, and it makes  
8 sense to move those into the Final Scoping Plan.

9 So as part of -- we've constructed these  
10 scenarios, but we'll also have individual measures by  
11 their health impacts, their air quality impacts, and their  
12 cost impacts. And so that almost plug and play that you  
13 kind of mentioned at the beginning in your question, that  
14 opportunity exists as part of the discussion of the first  
15 draft and before we settle on what's going to be the final  
16 draft, so it does happen as part of that process.

17 CHAIR RANDOLPH: Can I just ask a clarifying  
18 question following up from that just to make sure we  
19 understand the sequencing? That the -- the economic and  
20 the health analysis that you just spoke about will be  
21 reflected in the draft. And so when the Board looks at  
22 the draft in June and has the conversation about that,  
23 that will be the opportunity to ask for more analysis of  
24 particular issues.

25 DEPUTY EXECUTIVE OFFICER SAHOTA: So we will have

1 the health and the economic impacts, the scenarios as  
2 they're constructed now, but also the individual actions  
3 in those scenarios. For example, in Alternative 1, we  
4 remove all of the legacy ICE vehicles out of the road.  
5 That's going to provide some air quality benefits versus  
6 letting -- or end-of-life determine when those vehicles  
7 are taken off the road in the other scenarios.

8           So just looking across those individual lines,  
9 you'll be able to discern what's the cost of each of those  
10 and what's the health benefit of each of those.

11           CHAIR RANDOLPH: Okay.

12           All right. Vice Chair Berg.

13           VICE CHAIR BERG: Yes. And I will be quick. I  
14 seem to have gotten myself this -- I'm going to move this  
15 way. Okay. Sorry.

16           I'd just like to wrap-up the conversation with  
17 how we're going to include the EJAC comments. And so last  
18 time we did put it in as appendix. And it seems to me,  
19 I'm really -- I can understand the amount of work, and  
20 we've all acknowledged the amount of work, that has been  
21 done. And we understand that there is also a lot of other  
22 stakeholders. There's a lot of other quite frankly  
23 politics that come into it, economics, everything else.

24           We -- I think one of the things I'd like to be  
25 very clear about, we are not the sole decision-makers

1 on -- on what goes in here. We are influenced by all  
2 sorts of people, and this is a true balancing act.

3 That said, the amount of work that the EJAC is  
4 doing -- and one of the things I keep hearing is how do  
5 their voices get heard? And I'm just wondering, after --  
6 I did go back and reread the 2017. And I'm just wondering  
7 under each chapter, if it would be possible to summarize  
8 the impacts of whatever scenario it is that we choose from  
9 their perspective. And so that there is a mechanism in  
10 which all of their discussion, all of their concerns --  
11 well, all might be -- I don't want to -- their major  
12 concerns, their major discussions, because as policy  
13 readers read this, how do they hear from an EJAC  
14 perspective what it means to their communities.

15 Because although this is a plan, we're going to  
16 take each item and really drill down to the details that  
17 fall under our purview, but what about the others and how  
18 do we hear that? I'm afraid if we just, once again, do an  
19 addendum that honestly it feels to me it does get lost.  
20 And so I don't need you to respond right now, because I  
21 haven't given you any heads-up on this, but I'd love it if  
22 you would take it back, maybe work with Chanell, talk  
23 about some -- yeah, I gave you a job, Chanell.

24 (Laughter.)

25 VICE CHAIR BERG: You were so close of getting

1 out of here, right? Just talk about how we could, in  
2 fact, do it differently, so it is heard and truly  
3 validated differently that we're listening.

4 Thank you.

5 CHAIR RANDOLPH: Can I just respond briefly to  
6 that? I agree with you and we have already started having  
7 conversations about what that would look like and how we  
8 would operationalize that in the draft, so we are --

9 VICE CHAIR BERG: I should know that, Chair  
10 Randolph, and so thank you very much.

11 (Laughter.)

12 CHAIR RANDOLPH: Okay. Appreciate it.

13 All right. Any other Board Member comments?

14 Okay. Seeing none, I just really appreciate  
15 staff's work. The explanation of this complex modeling  
16 was extremely helpful. We really appreciate you taking  
17 the time to walk -- walk us through all of this and give  
18 us a lot to think about between now and when the draft  
19 comes back. And the Board member comments I thought were  
20 really helpful. And -- and I appreciated your discussion,  
21 Rajinder, about the issue of uncertainties and how that  
22 gets discussed in the Plan.

23 You know, Connie Cho in particular asked some  
24 really specific questions about CCS, and a lot of  
25 commenters had -- had questions about it. And I think the

1 draft will really provide an opportunity to put more  
2 layers of nuance around that conversation in a way that  
3 the modeling really can't, because the modeling is so sort  
4 of limit in terms of discussing things like the  
5 technologies, the potential deployment, and the potential  
6 different uses that we may or may not be using CCS for or  
7 what the potential is for carbon removal strategies and  
8 what the technological issues are around both of those  
9 different strategies. And so I appreciate that we'll have  
10 the opportunity to explore that more in the draft.

11 I think that is it for the discussion on this  
12 item. And again, thank you for all of your work.

13 And now I think we are ready for open public  
14 comment.

15 BOARD CLERK GARCIA: Thank you, Madam Chair. We  
16 have two commenters who wish to speak at this time. The  
17 first commenter -- well, the first two commenters will be  
18 Dave Cook and a phone number ending in 990.

19 Dave, I have activated your microphone. Please  
20 state your name -- oh, I'm sorry. Go ahead and unmute.

21 DAVID COOK: Yes. You can hear me?

22 BOARD CLERK GARCIA: Yes.

23 DAVID COOK: Good afternoon, Madam Chair, and  
24 fellow Board members. My name is David Cook and I am  
25 working with a consortium of California small businesses.



1 We have been proposing and moving forward with  
2 low-emissions locomotive retrofits, including one  
3 zero-emissions locomotive that operates one day every two  
4 weeks at a small railyard in Anaheim, California.

5           Recently, a large mining company in Australia has  
6 announced that they are investing in an ambitious  
7 gravity-powered infinity train project. A train of loaded  
8 rail cars from the mine going downhill will use  
9 regenerative braking to charge the locomotive batteries,  
10 which then allows the train to bring the empty train back  
11 up hill to the mine on battery power.

12           This is done without the need to use grid  
13 electricity to charge the batteries and the locomotives,  
14 making this a carbon negative short-line railroad that is  
15 generating its own renewable electricity with the  
16 locomotives.

17           Our coalition is proposing a path for CARB to  
18 take a leadership role in allowing California to beat the  
19 Australians in the race to be the first in the world with  
20 a fully operational carbon negative short-line railroad.  
21 This would involve a few incremental, but shovel-ready,  
22 projects that involve California based small businesses,  
23 small railyards, and short-line railroads.

24           We propose three overlapping projects that will  
25 achieve full-time operation of a light-duty zero-emission

1 switching locomotive for sorting railcars at several small  
2 railyards through the use of a CORE voucher, operate two  
3 net zero medium horsepower locomotives in heavy-duty  
4 switching service at multiple railyards, and then convert  
5 a short-line railroad at a California mine. It's a carbon  
6 negative operation with four battery operated line-haul  
7 locomotives.

8           The budget for these seven battery locomotives  
9 supported for two-year long demonstrations at multiple  
10 locations should be less than what California's currently  
11 spending on the purchase of only five Tier 4 diesel  
12 passenger locomotives or approximately \$35 million for  
13 seven battery-electric locomotives.

14           We look forward to engaging with CARB leadership  
15 and staff along with the Legislature to allow California  
16 to take on this challenge. I will provide an outline of  
17 this proposal to CARB leadership. If any Board member  
18 would like a personal briefing on this, I'm more than  
19 happy to follow up with your staff and set that up or  
20 answer any questions someone may have now.

21           BOARD CLERK GARCIA: Thank you.

22           Phone number ending in 990, I have activated your  
23 microphone. Please state your name for the record and you  
24 can begin.

25           HARVEY EDER: Hello. Am I being heard?

1 BOARD CLERK GARCIA: Yes.

2 HARVEY EDER: Okay. Good afternoon. My name is  
3 Harvey Eder. I'm talking for myself and for the Public  
4 Solar Power Coalition, et cetera.

5 One process thing, today, paralleling this from  
6 one o'clock to recently, there was a plan meeting, AQMP,  
7 for '22 plan for South Coast. Please try to not schedule,  
8 you know, parallel stuff. You can't do both.

9 So I -- anyway, two things. Low Carbon Fuel  
10 Standard and the history of that. Okay. We started  
11 working on that in '07, '08. And Mr. Corey didn't a  
12 senior position there, but was instrumental in that. I  
13 was taken aback and tried to nip this thing in the bud,  
14 but -- this stuff with, you know, waste systems, with  
15 natural gas, methane, okay, from -- they're saying dairies  
16 and waste systems. Okay. It's methane. It's fossil  
17 fuels.

18 The Arctic is melting and we brought this all to  
19 you, to the District and you all. In September of '19,  
20 the cover article on National Geographic is the Arctic is  
21 warming. The tundra is melting. Now that's all on fossil  
22 fuel system, all right?

23 So before you go trying to do this garbage  
24 again -- and you're looking at drug-resistant antibiotics  
25 and that's been totally ignored and put that in the

1 record. We brought this up with Sam Wade. We put it in  
2 there. We said now we need you -- you just burn it, you  
3 flare it, you get 5, 10 percent. You don't get this --  
4 these big numbers and big money. Ten trillion dollars  
5 spent on these subsidies. Do you hear that?

6           Okay. This is outrageous. It's -- so you pay  
7 for what we did up in the Arctic before you get any of  
8 this credit. Straight up. Enough is enough. And the  
9 reports that are coming out -- the modeling reports --  
10 there was model of models, a hundred different reports  
11 done a few years ago and they said the numbers are way  
12 worse than -- and the numbers were -- for -- are much  
13 higher than those.

14           So that's -- and that was started by Pickens, you  
15 know T. Boon Pickens.

16           BOARD CLERK GARCIA: Thirty seconds.

17           HARVEY EDER: That's the clean energy in these  
18 folks. We need a political economic study and looking at  
19 equity. And right now, this has got to be happening at  
20 all the international, national, local levels, and the  
21 world is changing, all right?

22           So -- and you did not study the Solar New Deal.  
23 No one did. And we got run out of court. We're asking  
24 you to support us in getting the trans -- the tape from  
25 that and a record that we put in that they would purge --

1 BOARD CLERK GARCIA: Thank you.

2 HARVEY EDER: -- but would not send us a copy.

3 BOARD CLERK GARCIA: Thank. That concludes your  
4 time.

5 HARVEY EDER: It's on you folks.

6 BOARD CLERK GARCIA: We have one more commenter,  
7 a phone number ending in 528. I have activated your  
8 microphone. Please state your name for the record and you  
9 can begin.

10 LAURA ROSENBERGER HAIDER: Laura Rosenberger  
11 Haider. I think we need -- of course we need 30 percent  
12 organic agriculture by 2030, like a lot sooner. And we  
13 need for the harbor craft we need hydrogen cell  
14 technology, and incentives, and grant money for them to  
15 upgrade. And the last thing we need to like not to allow  
16 those zombie oil wells to rework their wells. And they'll  
17 just drill deeper and -- especially -- especially not the  
18 ones that are right next to neighborhoods, like  
19 environmental justice communities next to sensitive  
20 populations. We have to stop them and that will reduce a  
21 lot of emissions.

22 And one of the reasons again crude oil is that it  
23 also -- it contains toxic heavy metals that need to be  
24 refined out. And some of those are linked to dementia --  
25 or early dementia. And for the workers that work in both

1 those industries or just work in the industry where they  
2 have to burn a lot of fuel like oil industry fuel. It  
3 would be very dangerous to their health.

4 All right. Thanks.

5 BOARD CLERK GARCIA: Thank you.

6 CHAIR RANDOLPH: Does that conclude public  
7 comment?

8 BOARD CLERK GARCIA: Yes, that concludes the  
9 commenters.

10 CHAIR RANDOLPH: All right. Thank you. This  
11 meeting is adjourned. Our next meeting will be our April  
12 7th joint meeting with the California Transportation  
13 Commission and Housing and Community Development  
14 Department.

15 Have a good evening, everyone.

16 (Thereupon the Air Resources Board meeting  
17 adjourned at 5:12 p.m.)

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CERTIFICATE OF REPORTER

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 11th day of April, 2022.

JAMES F. PETERS, CSR  
Certified Shorthand Reporter  
License No. 10063