VIDEOCONFERENCE MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

ZOOM PLATFORM

THURSDAY, DECEMBER 10, 2020

9:08 A.M.

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

APPEARANCES

BOARD MEMBERS:

Ms. Mary Nichols, Chair

Ms. Sandra Berg, Vice Chair

Dr. John Balmes

Mr. Hector De La Torre

Mr. John Eisenhut

Supervisor Nathan Fletcher

Senator Dean Florez

Assembly Member Eduardo Garcia

Supervisor John Gioia

Ms. Judy Mitchell

Mrs. Barbara Riordan

Supervisor Phil Serna

Dr. Alexander Sherriffs

Professor Dan Sperling

Ms. Diane Takvorian

STAFF:

Mr. Richard Corey, Executive Officer

Ms. Edie Chang, Deputy Executive Officer

Mr. Steve Cliff, Deputy Executive Officer

Mr. Kurt Karperos, Deputy Executive Officer

Ms. Ellen Peter, Chief Counsel

APPEARANCES CONTINUED

STAFF:

Ms. Annette Hebert, Assistant Executive Officer

Mr. Gurjeet Bains, Air Resources Engineer, Vapor Recovery Regulatory Development Section, Monitoring and Laboratory Division(MLD)

Mr. Michael Benjamin, Division Chief, Air Quality Planning and Science Division(AQPSD)

Mr. Peter Christensen, Manager, Innovative Heavy-Duty Strategies Section, Mobile Source Control Division(MSCD)

Mr. Joshua Cunningham, Branch Chief, Advanced Clean Cars Branch, Sustainable Transportation and Communities Division(STCD)

Mr. Louis Dinkler, Manager, Vapor Recovery Regulatory Development Section, MLD

Ms. Nicole Dolney, Branch Chief, Transportation Systems Planning Branch, STCD

Ms. Catherine Dunwoody, Division Chief, MLD

Mr. David Edwards, Assistant Division Chief, AQPSD

Ms. Ariel Fideldy, Air Pollution Specialist, South Coast Air Quality Planning Section, AQPSD

Mr. Mike FitzGibbon, Branch Chief, Atmospheric Science and Climate Strategies Branch, Research Division(RD)

Mr. Glenn Gallagher, Staff Air Pollution Specialist, F-Gas Reduction Strategy Section, RD

Ms. Graciela Garcia, Air Pollution Specialist, Innovative Light-Duty Strategies Section, MSCD

Ms. Jennifer Gress, Division Chief, STCD

Ms. Pamela Gupta, Manager, F-Gas Reduction Strategy Section, RD

APPEARANCES CONTINUED

STAFF:

Mr. Aaron Hilliard, Manager, Alternative Strategies Section, MSCD

Ms. Donielle Jackson, Air Pollution Specialist, Vapor Recovery Regulatory Development Section MLD

Ms. Alexandria Kamel, Senior Attorney, Legal Office

Ms. Richie Kaur, Air Pollution Specialist, F-Gas Reduction Strategy Section, RD

Ms. Debbie Kerns, Senior Attorney, Legal Office

Ms. Aanchal Kohli, Air Resources Engineer, F-Gas Reduction Strategy Section, RD

Ms. Kathryn Kynett, Air Pollution Specialist, F-Gas Reduction Strategy Section, RD

Mr. George Lew, Branch Chief, Vapor Recovery and Fuels Transfer Branch, MLD

Ms. Lisa Macumber, Manager, Innovative Light-Duty Strategies Incentive Section, MSCD

Mr. John Marconi, Staff Air Pollution Specialist, Vapor Recovery Development Section, MLD

Ms. Shannon Martin Dilley, Senior Attorney, Legal Office

Ms. Abigail May, Attorney, Legal Office

Mr. Michael Miguel, Assistant Division Chief, MLD

Ms. Andrea Morgan, Air Resources Engineer, Advanced Transportation Incentives Strategies Section, MSCD

Ms. Claudia Nagy, Senior Attorney, Legal Office

Ms. Lucina Negrete, Branch Chief, Innovative Strategies Branch, MSCD

Ms. Cory Parmer, Manager, Off-Road Diesel Analysis Section, AQPSD

APPEARANCES CONTINUED

STAFF:

Mr. Sam Pournazeri, Branch Chief, Mobile Source Analysis Branch, AQPSD

Mr. Ryan Sakazaki, Board Clerk

Ms. Elizabeth Scheehle, Division Chief, MLD

Ms. Sylvia Vanderspek, Branch Chief, Air Quality Planning Branch, AQPSD

Ms. Sydney Vergis, Division Chief, MSCD

Ms. Michelle Wood, Air Pollution Specialist, Vapor Recovery Regulatory Development Section, MLD

Ms. Fang Yan, Manager, On-Road Model Development Section, AQPSD

ALSO PRESENT:

Ms. Gypsy Achong, 2050 Partners

Ms. Fariya Ali, Pacific Gas and Electric

Mr. Mike Armstrong, A-Gas in the Americas

Ms. Katrina Au, Agility Fuel Solutions

Ms. Shayda Azamian, Leadership Counsel for Justice and Accountability

Mr. Daniel Barad, Sierra Club California

Ms. Noelle Baker, Hyundai-Kia America Technical Center

Mr. Will Barrett, American Lung Association

Mr. Phillip Beste, Hansen Technology

Mr. Brian Bogdan, LG Electronics

Mr. Damian Breen, Bay Area Air Quality Management District

APPEARANCES CONTINUED

ALSO PRESENT:

Mr. David Calabrese, Daikin

Mr. Todd Campbell, Clean Energy

Mr. Daniel Chandler, 350 Humboldt

Mr. Glenn Choe, Toyota

Mr. Jon Costantino, Tradesman Advisors

Ms. Anjali Deodhar, Viatec

Ms. Beverly DesChaux, Electric Auto Association Central Coast California

Mr. Raj Dhillon, Breathe Southern California

Ms. Janet Dietzkamei

Mr. Steven Douglas, Alliance for Automotive Innovation

Mr. Sean Edgar, Clean Fleets

Mr. Thomas Enslow, California State Pipe Trades Council, Western States Council of Sheet Metal Workers

Mr. Kevin Fay, Alliance of Responsible Atmospheric Policy

Mr. Jack Fleck, 350 Bay Area

Mr. Chris Forth, Johnson Controls

Mr. David Gauvin, Trane

Mr. Michael Geller, Manufacturers of Emission Controls Association

Mr. Ranji George

Mr. Sriram Gopal, Association of Home Appliance Manufacturers

Mr. Wynand Groenewald

APPEARANCES CONTINUED

ALSO PRESENT:

Mr. Frank Harris, California Municipal Utilities Association

Mr. Alex Hillbrand, Natural Resources Defense Counsel

Mr. Jamie Hodd, Alfa Laval, Inc.

Mr. Daniel Hubbell, Ocean Conservancy

Mr. Steve Jimenez, American Lung Association

Mr. Brian Johnston, Lightning Systems

Mr. Ryan Kenny, Clean Energy

Mr. Tom Knox, Valley Clean Air Now

Mr. Colin Laisure-Pool, American Society of Heating and Air-Conditioning Engineers

Mr. Thomas Lawson, California Natural Gas Vehicle Coalition

Mr. Jaime Lemus, Sacramento Metropolitan Air Quality Management District

Mr. Kurt Liebendorfer, Evapco, Inc.

Ms. Nanette Lockwood, Trane Technologies

Mr. Bill Magavern, Coalition for Clean Air

Mr. Kevin Maggay, SoCalGas

Mr. Dave Malinauskas, CIMCO Refrigeration

Mr. Adriano Martinez, Los Angeles County Electric Truck and Bus Coalition

Mr. Ronald Matwee, Nortam Consulting

Ms. Lisa McGhee, Green Power Motor Company

APPEARANCES CONTINUED

ALSO PRESENT:

Ms. Katie McGinty, Johnson Controls

Mx. Jason Meggs

Dr. Matt Miyasato, South Coast Air Quality Management District

Ms. Urvi Nagrani, Climate Solution Consulting

Mr. Chris Nevers, Rivian

Ms. Jose Paul, Phoenix Motorcars

Mr. Michael Pimentel, California Transit Association

Mr. Christopher Perry, American Council for an Energy Efficient Economy

Mr. Max Pfeiffer, Maxwell Vehicles

Ms. Cynthia Pinto-Cabrera, Central Valley Air Quality Coalition

Mr. Zorik Pirveysian, South Coast Air Quality Management District

Mr. David Renschler, City of Fairfield

Ms. Tiffany Roberts, Western States Petroleum Association

Ms. Erin Rodriguez, Union of Concerned Scientists

Ms. Madeline Rose, Pacific Environment

Ms. Esther Rosenberg, Chemours

Ms. Laura Rosenberger, Fresnans Against Fracking

Ms. Sasan Saadat, Earthjustice

Mr. Tim Sasseen, Ballard Power Systems

Mr. Dave Schaefer, Bassett Mechanical

APPEARANCES CONTINUED

ALSO PRESENT:

Mr. Gary Schrift, International Institute of Ammonia and All Natural Refrigeration

Mr. Andy Schwartz, Tesla

Mr. Doug Scott, VaCom Technologies

Mr. Chuck Shinneman, Capital Engineering

Ms. Allison Skidd, Rheem Manufacturing

Ms. Morgan Smith, Northern American Sustainable Refrigeration Council

Ms. Christina Starr, Environmental Investigation Agency

Mr. Jarrett Stoltzfus, Proterra

Mr. Ted Tiberi

Ms. Eileen Tutt, California Electric Transportation Coalition

Ms. Amy Wong, Active San Gabriel Valley

Mr. David Yow, Port of San Diego

Mr. Stephen Yurek, Air-Conditioning, Heating and Refrigeration Institute

Mr. Bill Zobel, California Hydrogen Business Council

INDEX

	PAGE
Call to Order	1
Roll Call	1
Opening Remarks	2
Item 20-13-3	
Chair Nichols	18
Executive Officer Corey	20
Staff Presentation	22
Mr. Magavern	35
Mr. Tiberi	36
Mr. Barrett	40
Ms. DesChaux	42
Board Discussion and Q&A	43
Motion	46
Vote	47
Item 20-13-4	
Chair Nichols	47
Executive Officer Corey	49
Staff Presentation	51
Mr. Beste	77
Mr. Yurek	78
Mr. Gauvin	81
Mr. Armstrong	83
Mr. Gopal	86
Mr. Chandler	88
Ms. McGinty	90
Mr. Matwee	92
Ms. Starr	94
Ms. Achong	96
Mr. Hillbrand	98
Mr. Hodd	100
Mr. Schaefer	103
Mr. Laisure-Pool	104
Ms. Lockwood	104
Ms. Skidd	105
Mr. Malinauskas	107
Mr. Calabrese	108
Ms. Ali	113
Mr. Fay	114
Mr. Liebendorfer	117
Mr. Forth	118
Mr. Perry	119

INDEX CONTINUED

	PAGE
Item 20-13-4(continued)	
Ms. Smith	121
Mr. Bogdan	122
Mr. Enslow	123
Mr. Scott	128
Ms. Rosenberg	130
Mr. Breen	132
Mr. Groenewald	133
Mx. Meggs	134
Board Discussion and Q&A	136
Motion	152
Vote	152
Afternoon Session	156
Item 20-13-6	
Chair Nichols	156
Executive Officer Corey	165
Staff Presentation	166
Mr. Saadat	187
Ms. Pinto-Cabrera	189
Mr. Fleck	191
Mr. Barrett	193
Ms. Wong	195
Mr. Barad	197
Mr. Schwartz	198
Ms. Nagrani	200
Ms. Rose	202
Mr. Pfeiffer	204
Mr. Maggay	206
Ms. Deodhar	208
Mr. Magavern	210
Mr. Geller	211
Mr. Douglas	213
Mr. Kenny	215
Mr. Pirveysian	217
Mr. Costantino	219
Mr. Breen	220
Mr. George	223
Ms. Azamian	224
Mr. Hubbell	227
Ms. Roberts	228
Ms. DesChaux	229
Ms. Dietzkamei	231
Mr. Sasseen	233
Mr. Renschler	234

INDEX CONTINUED

	PAGE
Item 20-13-6(continued)	
Mr. Edgar	236
Mx. Meggs	238
Mr. Campbell	240
Mr. Lawson	242
Mr. Zobel	244
Board Discussion and Q&A	246
Item 20-13-7	
Chair Nichols	285
Executive Officer Corey	288
Staff Presentation	289
Mr. Dhillon	305
Mr. Lemus	306
Mr. Jimenez	308
Mr. Schwartz	310
Ms. Nagrani	314
Mr. Kenny	315
Mr. Nevers	317
Mr. Choe	319
Mr. Stoltzfus	321
Ms. Baker	322
Mr. Pfeiffer	324
Ms. Au	326
Mr. George	327
Mr. Yow	329
Ms. Deodhar	331
Mr. Johnston	333
Mr. Barad	334
Mr. Lawson	336
Mr. Knox	338
Mr. Magavern	338
Ms. Tutt	340
Mr. Maggay	342
Mr. Paul	344
Ms. McGhee	346
Mr. Costantino	348
Mr. Zobel	350
Ms. Rodriguez	351
Mr. Douglas	353
Mr. Edgar	355
Ms. DesChaux	357
Mr. Campbell	358
Mr. Pimentel	360
Mr. Martinez	362
Dr. Miyasato	363

INDEX CONTINUED

	PAGE
Item 20-13-7(continued)	
Board Discussion and Q&A	365
Motion	395
Vote	395
Public Comment	
Mx. Meggs	397
Mr. Campbell	399
Ms. Nagrani	401
Mr. Edgar	402
Mr. Harris	404
Ms. Rosenberger	405
Mr. George	406
Mr. Pfeiffer	408
Ms. DesChaux	409
Adjournment	411
Reporter's Certificate	412

PROCEEDINGS

CHAIR NICHOLS: Good morning. The December 10th 2020 public meeting of the California Air Resources Board will come to order.

Clerk, would you please call the roll?

BOARD CLERK SAKAZAKI: Yes. Thanks, Madam Chair.

Dr. Balmes?

BOARD MEMBER BALMES: Here.

BOARD CLERK SAKAZAKI: Mr. De La Torre?

Mr. Eisenhut?

BOARD MEMBER EISENHUT: Here.

BOARD CLERK SAKAZAKI: Supervisor Fletcher?

BOARD MEMBER FLETCHER: Fletcher here.

BOARD CLERK SAKAZAKI: Senator Florez?

BOARD MEMBER FLOREZ: Here.

BOARD CLERK SAKAZAKI: Assembly Member Garcia?

ASSEMBLY MEMBER GARCIA: Present.

BOARD CLERK SAKAZAKI: Supervisor Gioia?

BOARD MEMBER GIOIA: Here.

BOARD CLERK SAKAZAKI: Ms. Mitchell?

BOARD MEMBER MITCHELL: Here.

BOARD CLERK SAKAZAKI: Mrs. Riordan?

BOARD MEMBER RIORDAN: Here.

BOARD CLERK SAKAZAKI: Supervisor Serna?

BOARD MEMBER SERNA: Here.

BOARD CLERK SAKAZAKI: Dr. Sherriffs?

BOARD MEMBER SHERRIFFS: Here.

BOARD CLERK SAKAZAKI: Professor Sperling?

BOARD MEMBER SPERLING: Here.

BOARD CLERK SAKAZAKI: Ms. Takvorian?

BOARD MEMBER TAKVORIAN: Here.

BOARD CLERK SAKAZAKI: Vice Chair Berg?

VICE CHAIR BERG: Here.

BOARD CLERK SAKAZAKI: Chair Nichols?

CHAIR NICHOLS: Here.

BOARD CLERK SAKAZAKI: Madam Chair, we have a quorum.

CHAIR NICHOLS: Thank you, Mr. Sakazaki.

We are conducting today's meeting with Zoom and have organized the proceedings to mirror our normal Board meeting as closely as possible. But understandably, there will be some differences. And we request everyone's patience and understanding if any technical problems arise.

Interpretation services are being provided today in Spanish. If you are joining us using zoom, there's a button labeled interpretation on the Zoom screen. You can click on that button and select Spanish, if you wish to hear the meeting in Spanish.

(Interpreter translated in Spanish.)

1 CHAIR NICHOLS: Gracias.
2 I want to say a few words before we start the
3 meeting today about this group that's assembled here on
4 our screens, because this is my last meeting as the Chair
5 of this Board. And we're also going to see some turnover
6 in the Board as well as in our senior staff. And so I
7 want to just say a couple of words and make it really
8 quick.
9 This is a remarkable group of people that has
10 come together over a period of years and I'm proud of the
11 team that we have assembled both on the Board and the
12 staff.
13 It's also been a remarkably stable Board. And I
14 think some have felt that perhaps there was a time for
15 everyone to face up to the possibility that we could be
16 replaced. And I faced that decision about a year ago,
17 when I decided that the time had come to turn over the
18 leadership of this Board and to -- to move on to the next
19 chapter in my life and career.
20 And I can't say that I am happy to say goodbye,
21 because that would not be true, but I am really looking
22 forward to whatever the next chapter may be. I do want to
23 particularly call out the Governor's appointment
24 announcement yesterday of my replacement, Liane Randolph,
25 who I have worked with over the last several years quite

closely on a variety of issues and who I will be very happy to turnover my symbolic gavel to. There is a real gavel around somewhere, but I think it's locked up in the office somewhere in Sacramento. But symbolically, there is -- there is a gavel. And it's a wonderful one, because of the fact that the Chair of the Air Resources Board gets to work every day with the staff of this agency and to represent us in -- both inside and outside California and even around the world.

And I am delighted that my successor is someone who will do that very capably. I will have more to say about her later, but suffice it to say, that I'm in a very good place right now in terms of how I think your next Board meeting will go. And I will be able to spend some time with her before that happens to make sure that there are no surprises. I've already offered to teach her the secret handshake and she's accepted. So we're all good.

We are also going to be seeing several other new faces coming in and we'll hear more about them later as well.

But I think it's time to say a particular farewell and just enormous gratitude to board members who are going to be leaving after this meeting. And I've already had the opportunity with one of them, Judy Mitchell, to actually attend her ceremony when she stepped

1 down from her seat as a -- or attended her last meeting as
2 an elected official in the City of Rolling Hills Estates
3 and experienced some of the affection and high regard that
4 her colleagues and constituents have for her. She has
5 ably represented the South Coast, which happens to be my
6 home area on this -- on this Board.
7 And I also want to say particular thanks to Dr.
8 Sherriffs who is with us this morning and who is carried
9 the dual responsibility of being a Governor's appointee
10 both on the San Joaquin and on this Board. He has an
11 amazing record of having driven to many of our meetings
12 and also hosted us for a very memorable meeting in the San
13 Joaquin, which was -- was just terrific. But his presence
14 as a physician and as a -- just a really all-around
15 sensitive, sensible human being, I guess he really is a
16 pediatrician. You can kind of tell that about him and
17 he's been a great Board member.
18 And John Gioia, who I did not hear signing in
19 this morning, but may be with us later, I hope, whose
20 represented the Bay Area.
21 BOARD MEMBER GIOIA: I'm here.
22 CHAIR NICHOLS: Oh, there you are. Hi, John.
23 Okay. Then I can say this to your face on the screen.
24 John is a tireless member of the Board who has advocated
25 in particular on behalf of communities people who are

1 directly impacted by toxic chemicals and living near and
2 around a thriving Bay Area oil and gas industry, but has
3 been somebody who's worked in the community. I know he --
4 he inherited his love of public service from his father,
5 but he has more than fulfilled any obligations to the
6 previous generation in terms of his creativity, and
7 thoughtfulness, and energy as a member of this Board.
8 I'll have a chance -- I hope we'll all have a chance to
9 say more to these people as we assemble after the meeting
10 today with the Board members, and have an opportunity to
11 toast each other in a little private session that will not
12 include any ARB business, but will hopefully be a lot of
13 fun.
14 So I also want to say that this is the last Board
15 meeting for one of our senior staff members, Kurt Karperos
16 who has guided the whole effort under the Clean Air Act to
17 prepare and revise continually the State Implementation
18 Plans, who's overseen the work on setting air quality
19 standards, who has been the face of the ARB in many other
20 agencies, especially a lot of our work with the
21 communities in the -- and the air quality districts around
22 the state. And I know that Richard is going to be
23 providing Kurt with an Executive Order after the meeting.
24 I hope it's an Executive Order that forbids him from
25 retiring, but I fear that we're not actually allowed to do

that.

So, Kurt, I want to say personally how much I have appreciated your very thoughtful and extremely detailed knowledge of the Clean Air Act and of the complicated processes that go into our relationships with U.S. EPA as well as the districts.

The work that Kurt has been doing recently though in terms of spearheading the effort to actually carry out what has been my vision for quite some time now of developing a more holistic approach to addressing the regional air pollution, and climate planning, and toxics issues all in a single, hopefully transparent, user-friendly system of data management, and collection, and display has been really extraordinary.

He has been an innovator and somebody who has helped to bring our research program into an even stronger place than it had been before. And he's played a key role in a number of our other programs, including, of course, AB 617.

But one of the things that Kurt is known for is -- and this is something that's critical. I just talked about Board succession a minute ago. But in terms of staff succession, ARB when I came here 13 years ago was facing a wave of retirements in every senior position across the Board and many people were dubious that we

would be able to carry on as effectively as we had in the beginning, much less expand and extend our efforts. And Kurt is one of those people who has really played a key role in mentoring staff and encouraging them, and developing their careers. And so he is going to be especially missed, I know, but he is also leaving a whole generation of very strong, capable women and men to carry on the work.

So I will now ask Richard if you have anything you want to add at this moment before we then move on to the -- to the meeting.

EXECUTIVE OFFICER COREY: Yes, Chair. Thanks. And I'll be brief. That was really excellent. And Kurt indeed will be missed. His impact, in terms of air quality, in his 30-year career with us is tremendous. We certainly haven't reached the destination, but the progress is undeniable. And the skill set, how he has worked with U.S. EPA, districts, communities, industry and others to navigate really creative strategies in the most challenged air quality areas in the country is real -- truly is undeniable. And to your point, Chair, about 617, he headed up the launch of 617 against what many said were impossible deadlines called out in that legislation, meeting everyone of them.

And really he has been for the entire team, EO,

the executive team, and others, a leader, a collaborator, a mentor, and really a friend to all of us and is going to be missed. And, Kurt, you know, I'm going to miss those 9:00 p.m. calls where we get to talk about the vagaries of the Federal Clean Air Act and the SIPs. And I'm sure you're going to miss those as well.

But, you really go out with, as the Chair said, leaving just a tremendous legacy in the team that you continue to build and it's just much, much appreciated.

And with that, I'm going to turn it over to Vice Chair Berg.

VICE CHAIR BERG: Well, good morning, everyone. And, Mary, your Board could not let this day go by without honoring our fearless leader. One of the hallmarks of a great leader is ability to run a well-prepared efficient meetings with successful outcomes. So in the spirit of that, Mary, your Board will attempt to sum up your leadership and your friendship for you in three minutes. So you always gave three minutes for public testimony and we collectively are going to do our best to do a three-minute tribute. So, Chris, will you please put three minutes on the clock for us.

(Laughter.)

VICE CHAIR BERG: Board members unmute your mics and take a deep breath. And are we ready?

Mr. Fletcher, kick us off.

BOARD MEMBER FLETCHER: Mary, you have been a trailblazer. It has been inspirational for me to work with you on CARB. You put California on firm footing to now lead the country on climate because of your actions.

VICE CHAIR BERG: Judy Mitchell.

BOARD MEMBER MITCHELL: Strong leadership is transparent leadership. When a group of automakers came to the podium to testify after they went to the new Trump administration to ask for a rollback in the CAFE standards, Mary said what were you thinking?

(Laughter.)

BOARD MEMBER MITCHELL: They're asking themselves that right now.

VICE CHAIR BERG: John Balmes.

BOARD MEMBER BALMES: I couldn't believe that the Chair of the Board would share my interest in New Orleans music --

(Laughter.)

BOARD MEMBER BALMES: -- and especially the Dixie Cups, the singers of, Going to The Chapel and Iko Iko.

(Laughter.)

VICE CHAIR BERG: Hector De La Torre.

BOARD MEMBER DE LA TORRE: Mary is an enthusiastic royal waver to almost one million people one

fine Pasadena morning. And as her -- and as for chairing for this Board, any jackass can kick the barn down, but it takes a good carpenter to build one.

CHAIR NICHOLS: Yep.

VICE CHAIR BERG: John Eisenhut.

BOARD MEMBER EISENHUT: Mary, you are a unique combination of technical skills, political acumen, and determination. Under your leadership, the State, and particularly the San Joaquin Valley, have advanced their clean air position to a cleaner and healthier environment.

Thank you.

VICE CHAIR BERG: Barbara Riordan

BOARD MEMBER RIORDAN: Mary has been an incredible ring master, keeping the public, the stakeholders, the staff, and the Board all going in a similar direction at one time.

VICE CHAIR BERG: Phil Serna.

BOARD MEMBER SERNA: Good jazz is about being in the moment and the ability to improvise and strong leadership is about the same. We're forever grateful to you, Maestro Nichols.

VICE CHAIR BERG: Diane Takvorian.

BOARD MEMBER TAKVORIAN: Thank you for your tenacious, determined and dogged service to California. Your commitment to air quality is unmatched and very

appreciated.

VICE CHAIR BERG: John Gioia.

BOARD MEMBER GIOIA: Mary, your leadership, your vision, your courage, your backbone, and your action has helped California really lead the world. And your legacy is going to continue long past your time on this Board. And communities like the one I represent in Richmond will benefit and thanks you for your service.

VICE CHAIR BERG: Alex Sherriffs.

BOARD MEMBER SHERRIFFS: I offer a limerick. Toxic pollution falls under her glare. CO2 she cuts with her stare. Corporations to the tables. Environmental justice she enables. Hail Mary. Holiday gifts, cleaner air.

VICE CHAIR BERG: Dan Sperling.

BOARD MEMBER SPERLING: I am in awe of the queen of green. The queen who is real power on the chess board, who strategically weaves through the castles, the pawns and bishops, who hangs back until just the right moment and then strikes with passion and precision. But there is another Mary, outside of the world of royalty and politics, it is the Mary who is most meaningful and memorable to me. It is Mary the officiant.

VICE CHAIR BERG: So, Mary, we did --

(Laughter.)

CHAIR NICHOLS: You've exceeded your limit, Vice Chair Berg.

VICE CHAIR BERG: We did, but only by less than a minute. And so to get all of us to be able to -- and congratulations. You all nailed it. And I will particularly want to second Professor Sperling's most meaningful moment.

CHAIR NICHOLS: Thank you.

VICE CHAIR BERG: One thing I can add to all of this, Mary, is a heartwarming thanks from all of the people you have elevated over your career, and I am one. And so thank you so very much.

But before I turn it back to you, I know that a perfect closing for this segment is to hear from our own Governor Newsom.

(Video was played.)

GOVERNOR NEWSOM: Well, let me extend my voice of congratulations and thanks to Mary Nichols on an extraordinary tenure at the California Air Resources Board. This agency guided, Mary, by your tireless advocacy has delivered. Delivered on its mission to fight climate change and protect Californians from the effects of air pollution. Your leadership has been demonstrable, as well as your creativity. And it's been tested from the very beginning.

1 In 2006, when California lawmakers had given
2 the State economy just 14 years to reduce greenhouse gas
3 emissions to where they were in 1990, in the wake of that
4 challenge, Governor Schwarzenegger appointed you the Chair
5 of the Air Resources Board, 2007. With only infamously 13
6 pages of legislation as a blueprint, you and your team
7 helped California meet this goal by 2016, years ahead of
8 schedule.
9 Meanwhile, California had experienced
10 extraordinary job growth, not despite those strategies,
11 but because, in many ways, of those strategies. We're
12 also grateful, Mary, for your leadership when you
13 persuaded President Obama to adopt the standards for fuel
14 efficiency in passenger cars at the federal level. When
15 these gains came under attack by this current
16 administration, you and your team were extraordinary in
17 working with partners in the private sector, Bill Ford,
18 Honda, Volkswagen, BMW of North America to ensure that
19 fuel economy standards in California continued to trend in
20 the right correction. You didn't give up.
21 These fights have never been easy and you met the
22 moment so many times. And more importantly, you left
23 clues and others followed your example. You've always led
24 with grace. You've always led with tenacity.
25 Mary, we thank you again for everything you've

done for the environment, more importantly for our kids, and our grandkids, and for our great state. I know for you, and I know this, the best is yet to come.

(End of video.)

VICE CHAIR BERG: And so there is no question the best is yet to come. And we know whatever that is, you will be in our corner cheering us on.

And with that, we turn it back over to you, Chair Nichols.

CHAIR NICHOLS: Well, thank you, Sandy. I would like to comment by the way that officiating at weddings is something that I can do, long after I've left the Air Resources Board. Actually, I think anyone can become a wedding officiant, if you get a letter from the court in the county that you're in. So if anybody is looking for a wedding officiant, it is one of my favorite things to do. Thank you so much all of you. That was just amazing.

I could undoubtedly sit here all day and enjoy your praises, but I think what you've done is absolutely right. And one of the secrets of leadership is knowing what it's time to stop. So I am going to stop this proceeding and move on to our work of the day.

And in order to do that, I'm going to ask the Board Clerk to provide some more detail on how we will handle the items on the agenda.

1 BOARD CLERK SAKAZAKI: Thank you, Chair Nichols.
2 And let me extend my personal thank you.
3 Good morning, everyone. My name is Ryan
4 Sakazaki. And I'm one of the Board Clerks. I will
5 provide some information on how public participation will
6 be organized for today's meeting. If you wish to make a
7 verbal comment on one of the Board items, or if you want
8 to make a comment during the open comment period at the
9 end of today's meeting, you must be using the Zoom webinar
10 or calling in by telephone. If you are currently watching
11 the webcast on CAL-SPAN, but wish to comment, please
12 register for the Zoom webinar or call in. Information for
13 both can be found on the public agenda.
14 To make a verbal comment, we will be using the
15 raise hand feature on Zoom. If you wish to speak on a
16 Board item, please virtually raise your hand, as soon as
17 the item has begun to let us know you wish to speak. To
18 could this, if you're using a computer or tablet, there is
19 a raise hand button. If you are calling in on telephone,
20 please dial star nine to raise your hand. Even if you --
21 even if you have previously registered and indicated which
22 item you wish to speak on, please raise your hand at the
23 beginning of the item if you wish to speak. If you do not
24 raise your hand, you chance to speak will be skipped.
25 If you are giving your verbal comment in Spanish,

please indicate so at the beginning of your testimony and our translators will assist you. During your comment, please pause after each sentence to allow for the interpreter to translate your comment into English. When the comment period starts, the order of the commenters will be determined by who raises their hand first. I will call each commenter by name and then activate each commenter when it is their turn to speak. For those calling in, I will identify you by the last three digits of your phone number.

We will not be showing a list of commenters. However, I will be announcing the three or so -- the three -- the next three or so commenters in the queue so you are ready to testify and know is coming next. Please note that you will not -- you will not appear by video during your testimony.

I would like to remind everyone, commenters, Board members and CARB staff to please state your name for the record before you speak. This is important for this remote meeting setting and especially important if you're calling in by telephone.

We will have a time limit for each commenter. The normal time limit is three minutes, though this could change based on the Chair's discretion. During public testimony, you will see a timer on the screen. For those

calling in by phone, we will run the timer and let you know when you have 30 seconds left and when your time is up.

If you wish to submit written comments today, please visit CARB's send-us-your-comments page or look to the public agenda on our webpage for links to send these documents in electronically. Comments will be accepted on each item until the Chair closes the record for the Board item.

I would like to give a friendly reminder to everyone to please mute yourself when you're not speaking to avoid background noise. Also when you please -- when you speak, please speak from a quiet a location. If you experience any technical difficulties, please call (805)772-2715 so an IT person can assist. This number is also noted on the public agenda.

Thank you. I would like to turn the microphone back to Chair Nichols now.

CHAIR NICHOLS: Great. So, the next item on our agenda is Item number 20-13-3, proposed amendments to the enhanced vapor recovery regulations for gasoline dispensing facilities, otherwise known as nozzles. If you wish to comment on this item, please click the raised hand button or dial star nine and we will call on you when we get to the public comment portion of the item.

1 For our consideration today, these are
2 regulations that would amend existing certification and
3 test procedures for vapor recovery systems that were
4 designed for storing and dispensing gasoline at gas
5 stations throughout California. California's Vapor
6 Recovery Program is one of our oldest stationary source
7 emissions control measures first adopted by the Board over
8 four decades ago, and I was here for that.
9 This program is not only designed to attain and
10 maintain ozone air quality standards by capturing VOCs, or
11 hydrocarbons, but also to reduce public exposure to
12 benzene, a toxic air contaminant, which is also part of
13 the vapors that are emitted and that we under this program
14 have been capturing.
15 The Board has updated these regulations from time
16 to time to make them more effective, to improve the
17 durability of the equipment, clarify certification and
18 test procedures, and improve cost effectiveness of the
19 requirements. And today, we're going to hear about some
20 additional improvements to the program.
21 While we continue to work hard to reduce gasoline
22 consumption overall, we know we're going to have it around
23 for years to come. And thus, it's critical that we
24 continue to make this regulation as effective and cost
25 effective as possible, as we -- as we move forward. It is

one of those areas where the public most directly interacts with -- with sources of air pollution. And, of course, the places where they do that are oftentimes small businesses, some of them in rural areas, and so it's a complex -- a complex program to do well.

I want to especially call out the fact that although the Air Resources Board began this program for the country, we did not invent it. It was originally proposed and implemented in San Diego. And the people of San Diego and the supervisors there the air district took even more heat over it in the early days than we did. But I personally will never forget a radio talk show in San Francisco that when we first rolled out the program had a whole campaign designed to show that these new nozzles that we were forcing people to use were dripping gasoline on their shoes and ruining everybody's wardrobe as a result.

So we've come a long way to a program that now operates effectively, and efficiently, and, as I said before, has captured tons of air pollutants, both conventional and toxic.

So without further ado, I'm going to turn this over to the staff. Mr. Corey, will you please introduce this item?

EXECUTIVE OFFICER COREY: Yes. Thanks Chair.

1 Each year in California, approximately 15 billion
2 gallons of gasoline are dispensed into motor vehicles
3 across approximately 14,000 fueling facilities. And as
4 you noted, the Board has controlled emissions from these
5 facilities for over 40 years. Over that period, the Board
6 has updated the regulations to achieve additional emission
7 reductions and improve the reliability of control
8 equipment.
9 What you'll hear today is the resolution of an
10 overpressure alarm issue that has occurred at fueling
11 stations equipped with in-station diagnostic systems,
12 similar to the check engine light on vehicles. In 2018,
13 this Board addressed part of the issue by adopting
14 regulations to ensure compatibility between dispensing
15 nozzles and vehicle fuel pipes. Today, you'll hear
16 staff's proposal to amend overpressure alarm requirements,
17 along with other proposed amendments that would continue
18 to refine the vapor recovery regulations to improve cost
19 effectiveness and preserve emission reduction benefits.
20 With that, I'll ask John Marconi of the
21 Monitoring and Laboratory Division to give the staff
22 presentation.
23 John.
24 (Thereupon a slide presentation.)
25 EXECUTIVE OFFICER COREY: John, if you're

speaking, you're on mute.

Catherine, do we need you to step in for John? Is he having a technology --

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: I'm here. I found the button. Sorry.

(Laughter.)

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Too many screens.

Good morning, Chair Nichols and members of the board. Thank you for the opportunity to discuss the proposed amendments for our Enhanced Vapor Recovery Regulations.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI:

Staff is proposing amendments that would improve the cost effectiveness and the regulatory requirements designed to control emissions at gasoline dispensing facilities commonly referred to as service stations.

In addition, our proposal seeks to preserve emission reduction benefits of the program and to improve the flexibility, enforceability and clarity of our regulations.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Now, you can see me too. I'm getting this.

1 California's Vapor Recovery Program focuses on
2 reducing gasoline vapor emissions at each step along the
3 gasoline distribution network. These steps include
4 transfers into cargo tank trucks at bulk storage
5 facilities, transfers from cargo tank trucks into storage
6 tanks at about 14,000 vehicle fueling facilities, and the
7 final transfer of gasoline into tens of millions of
8 vehicle fuel tanks.
9 To protect air quality and public health, CARB
10 has adopted regulations that control emissions at each
11 step in this process. Phase one vapor recovery controls
12 emissions during the transfer of fuel between cargo tank
13 trucks and storage tanks. Phase two vapor recovery
14 controls emissions during vehicle fueling. Today, I will
15 present proposals that focus on phase one and phase two
16 vapor recovery systems that control emissions during the
17 last two steps of the gasoline distribution, which occur
18 at service stations.
19 --o0o--
20 MLD STAFF AIR POLLUTION SPECIALIST MARCONI: I
21 will discuss our proposal in three parts. The first
22 addresses in-station diagnostic overpressure alarms. The
23 second concerns spill standards and certified dispensing
24 nozzles. And the final part includes a variety of
25 amendments aimed at improving the flexibility,

1 enforceability and clarity of our certification
2 procedures.
3 --o0o--
4 MLD STAFF AIR POLLUTION SPECIALIST MARCONI:
5 Before I discuss the individual parts of our
6 proposal, I'd like to review the collaborative public
7 process that led us to this point.
8 CARB staff worked extensively with the air
9 districts and industry stakeholders to design and
10 implement a variety of studies. These studies enable us
11 to draw conclusions about the causes and frequency of
12 overpressure alarms, and the magnitude and seasonal
13 variation of pressure-driven emissions.
14 Staff prepared 15 technical reports and made them
15 available to the public to provide transparency about the
16 findings and conclusions driving our proposed amendments.
17 Our key findings and conclusions are also summarized in
18 our formal rulemaking documents, which were made available
19 during the 45-day public comment period.
20 In this slide, the first row shows the timeline
21 for the execution of our most significant studies. The
22 second row indicates that overpressure was a recurring
23 item on the quarterly meeting agendas of the CAPCOA
24 enforcement managers and vapor recovery subcommittees.
25 As shown in the last row, CARB staff have shared

our findings and gathered input from concerned stakeholders through 12 public workshops through the rulemaking -- and through the rulemaking process associated with the Board hearing that was held in October 2018.

At that time, the Board adopted standards for nozzle and vehicle fill pipe dimensions designed to reduce pressure-driven emissions and overpressure alarms.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Our first proposal today focuses on addressing remaining concerns about overpressure alarms occurring in California service -- at California service stations. I'll start by giving some background information on ISD systems and overpressure.

The in-station diagnostic system monitors various parameters of the vapor recovery system and sets alarms to notify the operator of potential equipment problems, so that they can be addressed in a timely manner.

The purpose of the ISD system alarms is similar to the check engine light on our automobiles. The most common overpressure alarm is triggered when the Vapor Recovery System pressure is above one and a half inches water column for a small fraction of time during the seven-day assessment period.

This is not a lot of pressure, usually less than a tenth of a PSI. It's like the puff of air that would blow out a candle. For comparison, you need about 30 PSI to inflate the tires on your bicycle or automobile.

Our studies show that the vast majority of overpressure alarms are caused by the high volatility of winter blend gasoline and the fill pipe designs for some newer vehicles. These fill pipe designs allow excess air to be drawn into the Vapor Recovery System. And this causes gasoline evaporation in the storage tanks. The rate of evaporation and the frequency of overpressure alarms is highest during winter months, when gasoline specifications require a more volatile fuel.

The nozzle and fill pipe standards adopted in 2018 helped us reduce the excess air returned to the storage tanks, but there are remaining concerns about overpressure alarms that are addressed with our proposal.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI:

Next, I'll describe what happens when an overpressure alarm occurs at a service station. Once the warning alarm is triggered, the operator has two choices. The first choice would be to ignore the alarm and hope the condition is transient and will not lead to the station being shut down.

The second choice is to call for a service technician who will conduct recommended troubleshooting to identify and repair equipment failures and then reset the alarm. The average cost of a service call is about $800.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Now, I'll present some information that will illustrate the scope of the overpressure problem. Our studies -- I should say overpressure alarm problem. Our studies have allowed us to determine that approximately 5,300 GDF experienced one or more overpressure alarms per year, and approximately 2,100 GDF experience 10 or more overpressure alarms in a year.

We have found that more than 95 percent of triggered overpressure alarms are unrelated to any repairable equipment problem. This conclusion is based on a review of over 1,000 alarm response records from roughly 270 different service stations. For the remaining five percent of overpressure alarms, CARB staff determined that other ISD alarms, or inspection procedures, are effective at identifying an underlying equipment problem, if it exists, so they can be addressed by the station operator.

Because the overpressure alarm does not result in system repairs that reduce emissions, staff have concluded that the elimination of the alarm would not impact

1 attainment of air quality standards or the emission
2 reduction benefits achieved by the Vapor Recovery
3 Certification Program.
4 Staff has worked with CAPCOA to issue advisory
5 405, which provided the operator temporary relief from
6 alarm response requirements during the winter months when
7 overpressure alarms are most frequent. However, because
8 advisories do not carry the force of regulation, a
9 permanent regulatory solution is still needed.
10 --o0o--
11 MLD STAFF AIR POLLUTION SPECIALIST MARCONI: To
12 solve the remaining overpressure problem, we propose
13 removing the requirements for overpressure alarms. We
14 want to remove the burden of monitoring overpressure from
15 the GDF operators, since there is seldom anything the
16 operator can do to address the cause of the alarm and the
17 cost of responding to the alarm does not produce an air
18 quality benefit.
19 Instead, we recommend replacing the alarm
20 requirements with informational tools that can be used by
21 service station contractors to conduct more effective
22 troubleshooting to identify equipment problems. CARB and
23 air district staff can also use the enhanced data to
24 assess pressure-driven emissions in the future. Our
25 proposal does not change any requirements regarding two

other ISD alarms that address vapor collection and system leaks. These alarms have proven effective at identifying repairable equipment problems. And we believe that eliminating the overpressure alarm will make those two remaining alarms stand out even more for the station operators, making them more effective at alerting them of real equipment problems.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Once new software is available, we recommend that existing gas stations be allowed to install the upgraded software on a voluntary basis, with their decision being based on an assessment of potential savings. Staff estimate that about half of existing GDFs will decide not to upgrade to the software, because they experience a very low frequency of overpressure alarms. Our proposal would allow the existing ISD software to be used for the remainder of its useful life at existing systems where the operators decide not to upgrade their software.

New gas stations and gas stations undergoing a major modification would be required to install the upgraded software. The cost of the new software is expected to be similar for the cost of the current version they would have to purchase for a new station today.

With a permanent regulatory solution in place,

advisory 405 will no longer be needed, and we -- it will be rescinded four years after the new software has been made available.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Part two of our presentation concerns the nozzle Performance standards for spillage, which Mary mentioned in her opening.

Spillage occurs when liquid gasoline is released to the environment before, during and after refueling events. As the liquid gasoline evaporates, vapor emissions are created. CARB has adopted performance standards to limit the gasoline that spills during fueling events.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: The certification procedures include spillage standards of 0.24 pounds per 1,000 gallons dispensed and 0.12 pounds per 1,000 gallons dispensed for two different nozzle types. We are proposing a standard of 0.05 pounds per 1,000 gallons dispensed for all nozzles. All the currently certified nozzles that are out in use at the gas stations around color -- California, all tested lower than 0.05 pounds per 1,000 gallons dispensed. So the proposed standard gives some margin to spare and would allow design

flexibility and innovation for the nozzle manufacturer.

Because the current nozzles already meet our proposed standards, service station operators would not be required to change out or retrofit their existing nozzles.

Maintaining the current standards could allow the certification of less effective nozzles in the future which would lead to emission increases. By amending the spillage standard, we would prevent the certification of nozzles with inferior performance and preserve the superior performance of the currently certified nozzles. The administrative costs to nozzle manufacturers are minor.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: Part three of today's presentation covers several proposed amendments designed to improve the flexibility, enforceability and clarity of the EVR regulations. The proposed amendments would revise the ISD communication port requirement to improve design flexibility by allowing the Executive Officer to approve modern alternatives to the device currently specified in the procedures.

Next, the proposal -- we have a proposal that would require manufacturers to provide physical samples of newly certified vapor recovery system components, so that CARB can place them in an archive. The samples can be

1 used to identify and document any unapproved changes to
2 the equipment design or materials in the future.
3 There are a small number of installations
4 where -- that use a remote phase one fuel connection that
5 is offset by more than 50 feet from the underground
6 storage tank. And we're proposing changes to the test
7 procedure used to test those drop tubes to prevent a false
8 indication of leaks.
9 Finally, we're proposing a variety of minor
10 changes to the language developed in cooperation with
11 manufacturers, local air districts and other concerned
12 parties that will improve the clarity and enforceability
13 of our regulations.
14 --o0o--
15 MLD STAFF AIR POLLUTION SPECIALIST MARCONI: To
16 understand the economic impact of our proposals, CARB
17 staff have performed a detailed and thorough economic
18 analysis of our proposed regulatory changes. We estimate
19 that from the date of implementation through the year
20 2030, it will cost equipment manufacturers between
21 $290,000 and $3 million to implement the proposed changes.
22 The costs are quite small when compared to the
23 savings that can be realized by the service station
24 operators who are relieved of the expenses related to
25 responding to overpressure alarms. We estimate that from

1 the date of implementation through the year 2030, these
2 savings will be between thirty-two and ninety-eight
3 million dollars. Individual stations could save between
4 $780 and $17,000 annually, depending on their current
5 alarm frequencies.
6 This would translate into as much as one penny
7 per gallon savings for customers at a smaller station with
8 a high frequency of alarms.
9 --o0o--
10 MLD STAFF AIR POLLUTION SPECIALIST MARCONI:
11 Based on the findings of our collaborative
12 studies with CAPCOA and industry, we are recommending that
13 the Board approve the proposed amendments to the Vapor
14 Recovery Certification Procedures. These amendments would
15 eliminate overpressure alarms from the ISD software and
16 improve the cost effectiveness of the Vapor Recovery
17 Program.
18 The adoption of more stringent nozzle spillage
19 standards would preserve the performance of currently
20 certified nozzles in the future. The other amendments we
21 are including would improve the flexibility,
22 enforceability and clarity of the vapor recovery
23 regulations. During the 45-day comment period, we
24 received two comment letters. The first concerns the
25 proposed amendments to the drop tube procedure. At this

1 point, further investigation will be needed to determine
2 if a change to the proposed test procedures is necessary.
3 CARB staff will work with the concerned party on
4 this issue. And if we determine a change is needed, we
5 will make the proposed language available for a public
6 review and comment.
7 The second letter expressed concerns about the
8 proposed amendments to the ISD criteria for overpressure
9 alarms and the proposed requirement for the equipment
10 archive. Staff report -- the staff report for our
11 proposed amendments addresses these concerns. The comment
12 letter was submitted by the ARID vapor processor
13 manufacturer. His letter suggested that CARB should
14 require the installation Of their equipment to eliminate
15 overpressure alarms and reduce emissions.
16 Through our studies, we concluded that pressure
17 driven emissions do not impact regional and statewide
18 plans to attain the ambient air quality standards for
19 ozone. We considered this option as a potential
20 alternative and found that it would cost individual gas
21 station operators up to $100,000. And it could -- would
22 cost about $530 million more than what we are proposing.
23 Also, we estimate that there are about 2,000 gas
24 stations that do not experience overpressure alarms and
25 would derive no benefit from -- by replacing their

existing vapor processors with -- with a new unit.

--o0o--

MLD STAFF AIR POLLUTION SPECIALIST MARCONI: That concludes our presentation. Thank you very much for your time and consideration.

CHAIR NICHOLS: Thank you.

I think, at this point, we can hear from members of the public who raised their hands to speak on this item. So I will ask the Board Clerk to call the first commenters.

BOARD CLERK SAKAZAKI: Thank you, Madam Chair. We have three commenters signed up to -- with their hands raised at this time, Bill Magavern, Ted Tiberi and Will Barrett. If you wish to speak on this item, please raise your hand now.

First -- so first we have Bill Magavern. Bill, I have activated your microphone. You can unmute yourself and begin.

MR. MAGAVERN: Thank you. Good morning.

And first I want to say to Chair Nichols, to Board Members Gioia, Mitchell and Sheriffs and to Kurt Karperos, I have truly enjoyed working with all of you. And on behalf of the Coalition for Clean Air really appreciate everything you've done to improve the air quality in California.

1 So for the Enhanced Vapor Recovery Regulation,
2 this is Bill Magavern with Coalition for Clean Air. And
3 we support these proposed amendments. The tightening of
4 the nozzles spillage standard will prevent backsliding,
5 and removing the ineffective overpressure alarm, I think
6 will be good for safety, because when you have an alarm
7 that goes off unnecessarily, you get a syndrome where
8 people start to ignore alarms, like the old story of the
9 boy who cried wolf, and then when you need people to pay
10 attention to an alarm, they're less likely to do so.
11 And overall, I just wanted to note that, as Chair
12 Nichols said at the outset, this Enhanced Vapor Recovery
13 Regulation continues to be important to reducing emissions
14 in the state. So with these improvements, I think it's in
15 good shape to continue to serve us. And as long as we
16 have gas stations, we need to continue to have these rules
17 in place. Thank you very much.
18 BOARD CLERK SAKAZAKI: Thank you.
19 Our next speaker is Ted Tiberi. Ted, I have
20 activated your microphone. We're going to put up your
21 PowerPoint in a second.
22 One moment, please.
23 MR. TIBERI: Thank you. Thank you for that.
24 BOARD CLERK SAKAZAKI: Sorry, we're experiencing
25 technical difficulties. Please stand by.

1 There we go.
2 (Thereupon a slide presentation.)
3 BOARD CLERK SAKAZAKI: All right. You can go
4 ahead and begin.
5 MR. TIBERI: Thank you very much, Ryan, for doing
6 that, especially we didn't -- we didn't really know. We
7 learned just this morning about the need to submit the
8 prior day on the PowerPoint. And there's many clicks.
9 How do I -- how do I -- do I tell you to click or how do I
10 progress?
11 BOARD CLERK SAKAZAKI: Yes, please. Just audibly
12 say "next slide".
13 MR. TIBERI: Okay. Thank you.
14 So I was hoping to -- I wanted to review the
15 storage tank evaporative loss dynamics and those slides go
16 very quickly. And I wanted to talk about -- oh, I'm
17 sorry, if you could go back, please. I wanted to talk
18 about section 4.1 of CP201 in terms of the emission factor
19 and fugitive value being less than 50 percent for
20 approving these systems.
21 I'd also like to say I'm a bit intimidated to
22 present to the Board after 27 years. I'm not a lobbyist
23 or an attorney. I'm a chemical engineer from a small town
24 in Wheaton, Illinois here outside of Chicago.
25 Then I want to also tie in once we have these

emission factors established, I want to use TP201.2F, which is the CARB's Section 9 to calculate these emission factors, and then further to use the emission factor with the throughput of the site to show the actual emissions.

Next slide, please.

--o0o--

MR. TIBERI: And based on the capital and operating expense of the control options, we think that there can be a tiered approach. I know John said that we submitted a letter to require installation. Of course, we don't expect a monopoly of our system to all GDF in California. In fact, quite the opposite. We think there's a tiered approach that's possible balancing risk and inviting other competitors of which there are several that have systems in the pipeline right now.

Then also, we want to take into account benzene concentration levels, and with guidance from the scoping plan, allow -- allow the Board to consider designated levels for the air quality standards and the risks. And in fact, in the previous comments that we have supplied, we have presented tiered approaches in terms of GDF1 through 5, which is a typical notation that ARB has used for different throughputs.

And next slide, please.

--o0o--

MR. TIBERI: Next slide.

--o0o--

MR. TIBERI: This shows an uncontrolled system where you have a storage tank, fuel in the bottom and vapors above. The motorist pulls noz -- pulls the trigger of the nozzle, vapors are pumped from the tank to the vehicle.

Next slide.

--o0o--

MR. TIBERI: The liquid level goes down, liquid in the storage tank, and the vehicle tank level goes up.

Next slide.

--o0o--

MR. TIBERI: Vapors are then displaced from the vehicle tank. And this is pre-stage two. So this is a vehicle refueling emission. And as you see on the right side, as fuel is being pumped out of the tank air is being ingested.

BOARD CLERK SAKAZAKI: Excuse me --

MR. TIBERI: So atmospheric air is being --

BOARD CLERK SAKAZAKI: Excuse me, Ted.

MR. TIBERI: -- drawn into the tank.

BOARD CLERK SAKAZAKI: Apologies. We do have a time limit on these Board meetings and your time has concluded, but your PowerPoint has been submitted to our

online page, so it's available for consideration by the Board and staff.

MR. TIBERI: Oh, so you're saying I could -- that's the extent of my comments at this point?

BOARD CLERK SAKAZAKI: Yes. Every commenter gets three minutes -- a normal time limit of three minutes. Although, that could be changed.

MR. TIBERI: Is there discretion by the Chair to allow additional time to display these important graphics?

BOARD CLERK SAKAZAKI: There is, but I have not received word that we're extending your time, so...

MR. TIBERI: Can I ask the Chair directly if she would be willing to extend my time?

BOARD CLERK SAKAZAKI: Madam Chair?

CHAIR NICHOLS: I think it's not fair to others who wish to present to extend your time. I understand the work that you've put into this and I promise you that we will look at your presentation, but -- and the information about how to present to the Board is posted everywhere, and so I'm sorry if you weren't aware of it, but I think that will conclude your oral presentation.

BOARD CLERK SAKAZAKI: Thank you.

So our next speaker is Will Barrett. Will, I have activated your microphone. You can unmute yourself and begin.

1 MR. BARRETT: Thank you, Ryan. I appreciate it.
2 Will Barrett with the American Lung Association.
3 And I wanted to offer my support for the proposal. This
4 program supports reductions in ozone and toxic emissions.
5 And the amendments really represent what we've come to
6 expect from CARB regulations in terms of your long-term
7 commitment, making course corrections, following the best
8 available data, and then making smart programmatic
9 adjustments as you go.
10 The -- to that end, the staff laid out a common
11 sense approach to the nozzle spillage requirements to
12 protect against backsliding, improving cost effectiveness,
13 and really securing the basic structure of this program to
14 reduce harm to neighboring residents.
15 Keeping the station-based controls in addition to
16 the onboard systems ensures an important layer of
17 protection and we're encouraged to see that remaining in
18 place.
19 And ultimately, we do urge the Board to adopt the
20 proposal and appreciate the focus on bringing the
21 standards up to the technology, again to prevent
22 backsliding and maintaining the focus on preserving the
23 program benefits.
24 So, in closing, I also wanted to take a moment to
25 just say thank you to Chair Nichols, Ms. Mitchell,

Supervisor Gioia, Dr. Sherriffs and Kurt Karperos. It's been a pleasure working with all of you through my role at the Lung Association. Your leadership and work will certainly continue to protect lung health long after you sign out of today's meeting. It's greatly appreciate -- appreciated by the American Lung Association.

And personally, as parent, I greatly appreciate the work that you've done on behalf of all the breathers in California. Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our last speaker is Beverly DesChaux. Beverly, I have activated your microphone. You can unmute yourself and begin.

MS. DESCHAUX: Hi. Thank you. Beverly DesChaux, President of the Electric Auto Association, Central Coast, California.

So really the solution is to go electric, because these little incremental steps are at the expense of human life, of human health, and quality of life. To be continuing to coddle that industry which has no regard whatsoever for human life is to continue to have human suffering. And we have solutions that are much more rapid than these little incremental, let's reduce a little bit that's going in, let's reduce a little bit that's going into the air. No, we need to accelerate the transition to

electrification.

And I know that you're working on it, but I think we need to speed it up.

Thank you.

BOARD CLERK SAKAZAKI: Thank you. Madam Chair, that concludes the list of commenters for this item.

Madam Chair, I think you're muted.

CHAIR NICHOLS: I, too, forgot where the button was for the mute.

Thank you very much. I think I can now ask the staff if you want to respond to any of the comments, is there anything that you feel like you need to address that was raised by the commenters?

EXECUTIVE OFFICER COREY: Catherine Dunwoody, can you cover that, if you would?

MONITORING AND LABORATORY DIVISION CHIEF DUNWOODY: Yeah. Thank you, Mary, and members of the Board. So we have worked quite extensively with the industry folks on developing this regulation -- these proposals, as well as with the air districts, of course. They're our partners in the entire Vapor Recovery Program.

So with regard to Mr. Tiberi's comments, we have worked extensively with him over many, many years, both in looking at the extent of pressure-driven emissions at gas stations and certifying his particular solution. So we

1 believe that the proposal on a statewide basis is the
2 right approach to relieve station operators of the costs
3 associated with responding to these alarms and providing
4 the information that individual stations and air districts
5 need through the revised software and the in-station
6 diagnostic systems, so that they can apply controls, such
7 as Mr. Tiberi's, if they're warranted and cost effective.
8 So I'd be happy to answer any other questions you
9 have about the proposal. Thank you.
10 CHAIR NICHOLS: Thank you.
11 So I can close the record on this agenda item.
12 But I guess I need to ask at this point if you believe
13 that I need to read the whole spiel about 15-day changes
14 based on what you have -- what we have heard today or what
15 the staff is planning. Are we ready for a final vote on
16 this item or is there going to be another round of
17 proposed changes?
18 MLD AIR POLLUTION SPECIALIST WOOD: This is
19 Michelle --
20 MONITORING AND LABORATORY DIVISION CHIEF
21 DUNWOODY: Madam Chair, we do -- we do anticipate the
22 possibility of 15-day changes based on one of the comment
23 letters regarding the length of a drop tube in a site in
24 Southern California. So we do need to do some field
25 evaluation. We were unable to do that due to the COVID

restrictions in advance of the meeting, so we do anticipate there may be a possibility of a 15-day change on that particular topic.

CHAIR NICHOLS: Okay. Thank you.

Michelle, did you need to add anything there?

MLD AIR POLLUTION SPECIALIST WOOD: I just wanted to chime in. Yes, we may need a 15-day notice. This is Michelle Wood with the Vapor Recovery Program.

CHAIR NICHOLS: Hi. Okay.

(Laughter.)

MLD AIR POLLUTION SPECIALIST WOOD: I heard a pause. Just wanted to make sure you got an answer.

(Laughter.)

CHAIR NICHOLS: Thank you. Appreciate that.

Okay. In that case, I will go ahead and read this information into the record.

So the record for today's proceeding is complete. However, if the staff concludes that additional conforming modifications are appropriate, the record will be reopened and a 15-day Notice of Public Availability will be issued. If the record is reopened for a 15-day comment period, the public will be able to submit written comments on the proposed changes, which will be considered and responded to in the Final Statement of Reasons for the regulation.

Written or oral comments received after today,

1 but before the 15-day notice is issued, will not be
2 accepted as part of the official record on this agenda
3 item.
4 The Executive Officer may present the regulation
5 to the Board for further consideration, if he deems that
6 it's warranted. But if not, the Executive Officer will
7 take final action to adopt the regulation after addressing
8 all appropriate conforming modifications.
9 So, at this point, do any Board members wish to
10 raise their hand and comment?
11 Yes, I see Ms. Riordan's hand is up. Barbara.
12 BOARD MEMBER RIORDAN: Well, thank you, Madam
13 Chair. What I was going to say was that I appreciate the
14 staff working with CAPCOA, because I think we are very
15 much at the local level responsible for ensuring the
16 safety at our gas stations.
17 And I don't know if there are other comments, but
18 I would be happy to move approval of this Resolution
19 20-26.
20 CHAIR NICHOLS: Thank you for that motion.
21 And do we have a second?
22 BOARD MEMBER EISENHUT: John Eisenhut. Second
23 the motion.
24 CHAIR NICHOLS: All right. Any additional
25 comments?

1 If not, the Board Clerk can call the roll.
2 BOARD CLERK SAKAZAKI: Thank you, Madam Chair.
3 Dr. Balmes?
4 BOARD MEMBER BALMES: Aye.
5 BOARD CLERK SAKAZAKI: Mr. De La Torre?
6 BOARD MEMBER DE LA TORRE: Aye.
7 BOARD CLERK SAKAZAKI: Mr. Eisenhut?
8 BOARD MEMBER EISENHUT: Aye.
9 BOARD CLERK SAKAZAKI: Supervisor Fletcher?
10 BOARD MEMBER FLETCHER: Fletcher, aye.
11 BOARD CLERK SAKAZAKI: Senator Florez?
12 Supervisor -- or Senator Florez, excuse me?
13 Supervisor Gioia.
14 Supervisor Gioia?
15 BOARD MEMBER GIOIA: Aye.
16 BOARD CLERK SAKAZAKI: Ms. Mitchell?
17 BOARD MEMBER MITCHELL: Aye.
18 BOARD CLERK SAKAZAKI: Mrs. Riordan.
19 BOARD MEMBER RIORDAN: Aye.
20 BOARD CLERK SAKAZAKI: Supervisor Serna?
21 BOARD MEMBER SERNA: Aye.
22 BOARD CLERK SAKAZAKI: Dr. Sherriffs?
23 BOARD MEMBER SHERRIFFS: Aye.
24 BOARD CLERK SAKAZAKI: Professor Sperling?
25 BOARD MEMBER SPERLING: Aye.

1 BOARD CLERK SAKAZAKI: Ms. Takvorian?
2 BOARD MEMBER TAKVORIAN: Aye.
3 BOARD CLERK SAKAZAKI: Vice Chair Berg?
4 VICE CHAIR BERG: Aye.
5 BOARD CLERK SAKAZAKI: Chair Nichols.
6 CHAIR NICHOLS: Aye.
7 BOARD CLERK SAKAZAKI: Madam Chair, the motion
8 passes.
9 CHAIR NICHOLS: Thank you. Thanks to all.
10 The next item on our agenda is Item 20-13-4, a
11 proposed amendment to our regulation on
12 hydrofluorocarbons. And again, if you wish to comment on
13 this item, please click the raise hand button or dial star
14 nine now and we will call on you when we get to the public
15 comment portion of this agenda item.
16 Hydrofluorocarbons, or HFCs, are synthetic
17 chemicals that are very powerful short-lived climate
18 pollutants and present an immediate threat to our
19 atmosphere. HFCs can have thousands of times the
20 greenhouse gas impact of carbon dioxide, which is the
21 pollutant that we focus on as the general goal of our
22 climate activities, but refrigerants, in particular, are
23 an overwhelming problem at this point. As we begin to
24 deal with other pollutants at the same time, the growth in
25 the use of these chemicals is really extraordinary around

the world. As developing countries raise their standards of living, the demand for refrigerants continues to grow, and, of course, the need for refrigeration, as we have all been reading and dealing with vaccines, life-saving medicines, is extremely important.

Fortunately, there is a transition underway around the world to more climate-friendly refrigerants. But it's important that we in California do our part taking action, so that we can reduce the reliance on the highly potent greenhouse gases, as we also move ahead with other chemicals as well.

So I'm going to ask Mr. Corey to introduce this Board item. And just to sort of preface this a little bit, I guess what I would say is that I think this regulation represents a real milestone in the Board's regulatory activities in our history. And I'm looking forwarding to hearing more about exactly how that's going to play out.

So, Richard, would you go ahead and introduce this item?

EXECUTIVE OFFICER COREY: Yes. Great, Chair. Thank you.

CARB, as you noted, has been regulating HFCs for a number of years through light-duty vehicle standards, the Refrigerant Management Program, and the small can

1 regulation for automotive refrigerants. And most recently
2 in 2018, the Board adopted key federal prohibitions on
3 some of the most potent HFCs into State law. This was an
4 important action to protect California from harmful
5 rollbacks occurring at the federal level.
6 The Legislature further -- rather, furthered this
7 action by passing Senate Bill 1013, the California Cooling
8 Act. And CARB incorporated the statutory provisions in SB
9 1013 into the HFC regulation. Despite these current
10 rules, California needs further action to meet our SB 1383
11 mandate to reduce HFC emissions by 40 percent below 2013
12 levels by 2030.
13 In order to achieve those mandated reductions and
14 build a carbon-neutral economy, we need to transition to
15 more climate-friendly refrigerants as you noted.
16 The proposed amendments accelerate the transition
17 for stationary refrigeration and air conditioning. It's
18 important that new equipment does not continue to use
19 highly impactful refrigerants. Refrigeration and air
20 conditioning equipment can last 20 years more, meaning
21 equipment installed today will have an impact for at least
22 the next 20 years.
23 With that, I'll ask Richie Kaur and Kathryn
24 Kynett from our Research Division -- (inaudible)
25 (Thereupon a slide presentation.)

RD AIR POLLUTION SPECIALIST KAUR: Good morning. Thank you, Mr. Corey. Quick sound check. Am I coming through clear?

(Yes.)

RD AIR POLLUTION SPECIALIST KAUR: Great. Thank you.

Good morning, Chair Nichols and members of the Board. My name is Richie Kaur. As I and my colleague Kathryn Kynett will be jointly presenting the proposed amendments to CARB's regulation on hydrofluorocarbons, or HFCs for short.

I will begin with the background on HFCs and then cover the proposed requirements for stationary refrigeration systems. Kathryn will present our proposal for stationary air conditioning as well as our concluding remarks.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: HFCs are chemicals made up of hydrogen, fluorine and carbon. They're commonly used as refrigerants in air conditioning and refrigeration systems, in foams, as aerosol propellants and for a variety of other end uses.

HFCs were designed specifically to replace other types of gases that harm the earth's protective ozone layer. However, HFCs are powerful short-lived climate

pollutants meaning they have an outsized impact on the climate in the near term and compared to much longer lived greenhouse gases such as CO2.

Global warming potential, or GWP, is the metric we use to analyze emissions impacts of greenhouse gases like HFCs relative to CO2. The higher the GWP value, the more potent the greenhouse gas. The HFCs commonly used today have very high GWP values, as you can see on your screen. For example, just one pound of the refrigerant R-507 leaked into the atmosphere can cause the same amount of warming as 3,985 pounds of carbon dioxide.

California's Legislature recognized the importance of reducing HFC emissions and gave CARB a mandate through SB 1383 requiring CARB to reduce HFC emissions to 40 percent below 2013 levels by 2030.

Setting GWP limits for refrigerants in air conditioners and refrigeration systems is a key part of CARB's strategy in meeting that target.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: HFCs are the fastest growing source of greenhouse emissions in California and also globally. This graph shows HFC emissions in California from 2005 to 2040, and the relative contributions of emissions from each main HFC end-use.

In particular, HFC emissions are increasing rapidly from stationary refrigeration and air conditioning, and are expected to grow over the next 20 years. This is because old AC and refrigeration systems that use ozone depleting gases are being replaced with new equipment that use higher GWP HFCs.

Also, as the population grows and the climate warms, the demand for cooling is also growing. If the refrigerants themselves cause more warming, then we will be stuck in this feedback loop. And if nothing is done now, HFCs will start to dominate our greenhouse gas emissions within the next 20 years.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: This is a plot from the latest report from Energy and Environmental Economics, Inc., which shows that by 2045, if all other sources of greenhouse gas emissions are mitigated, we will still be left with high GWP gases, that's the part of the green portion on the bars. Thus, reducing HFCs is critical not just to meet our 2030 mandate, but also for meeting our carbon neutrality goals.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: Now, to address HFC emissions from stationary refrigeration and ACs, let us first take a look at where these emissions

1 come from. Equipment manufacturers sell AC and
2 refrigeration systems through distributors and via service
3 technicians, these systems are installed for end users.
4 End users range from commercial entities like supermarkets
5 or residential end users like you and me for AC.
6 Once these systems are installed, over time they
7 leak the refrigerants out. You may have faced a situation
8 where your home AC stops working and the technician
9 informs you that your refrigerant gas has leaked out.
10 The majority of these leaks tend to be
11 accidental. Moreover, these systems last for decades and
12 keep getting refilled with more high GWP refrigerants.
13 This is why we believe that lowering the GWP of
14 refrigerants is among the best strategies for reducing the
15 climate impact of these refrigerants.
16 Finally, once the equipment reaches end of life,
17 service technicians are required to recover the left-over
18 refrigerant, recycle or reclaim it, and put it back into
19 use.
20 However, very commonly, especially in the case of
21 residential ACs, this critical end-of-life recovery may
22 not happen and the refrigerants can get vented into the
23 atmosphere. To prevent emissions from venting at end of
24 life, refrigerant recovery, recycle and reuse must become
25 a priority for the industry.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: This slide shows a timeline for the HFC reduction measures we are proposing today. We begin in 2016, the landmark year of the passage of SB 1383, which legislatively mandates CARB to reduce HFC emissions by 2030. 2016 is also the year when the Kigali Amendment to the Montreal Protocol was singed. This is an international agreement to phase down HFCs. The United States has signed but not yet ratified the amendment, but many companies that make products for the U.S. are international and are transitioning to lower GWP alternatives under the amendment already.

In 2017, the Air Resources Board approved the SLCP Strategy, which describes CARB's plan of action for meeting the SB 1383 goal. This included GWP limits for new refrigeration and AC equipment. In October of 2017, CARB held a workshop where we announced a plan to move forward with these GWP limits.

However, in the same year, rollbacks of key federal prohibitions were announced. CARB was relying on those prohibitions to meet the target, so we announced a plan to adopt those federal rules first.

In March of 2018, the Board adopted our HFC regulation, which works in conjunction with SB 1013 to protect and preserve the federal level rules that we were

relying on. Later, we consolidated the two into the same regulation.

Also, in 2018, an industry coalition and the Natural Resources Defense Council, or NRDC, came together requesting CARB establish the 750 GWP limit for stationary air-conditioners with an effective date of 2023 and committed to working together on this transition. We responded by moving forward with that 2023 date.

Over the next couple of years, for both AC and refrigeration systems, CARB worked closely with stakeholders across the spectrum to develop the proposed rules.

The next big landmark on this timeline is the Board hearing we are attending today. Over this entire time, CARB has held numerous public workshops to provide stakeholders with updates and opportunities to engage on this regulation.

I will now discuss the details of the amendments being proposed today.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: We will begin with a reminder that the existing HFC regulation currently prohibits the use of some high GWP HFCs in a number of end uses, like refrigeration, foams, aerosols, chillers and others. These are the federal rules that we adopted in

2018. And the following are key elements of the amendments we are proposing to that regulation today.

For refrigeration systems, the proposed rules will affect new systems containing more than 50 pounds of refrigerant. And the rules are two-pronged: A 150 GWP limit for systems in newly constructed and fully remodeled facilities and different GWP requirements for existing facilities, which vary eye by end use. I will discuss the reason we have this split for new and existing facilities over the next few slides.

For air conditioning systems, all new ACs will be required to use refrigerants with a GWP less than 750. We propose a January 2023 start date. Several stakeholders have requested that CARB delay the effective date from 2023 to 2025 due to the need to update building codes as well as more time to transition.

As stated in the staff report, CARB considered these comments and we will discuss proposed 15-day changes to address the comments later in this presentation.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: I will now go over the proposed requirements for refrigeration systems. As I mentioned earlier, the requirements apply to new systems containing more than 50 pounds of refrigerant. These are essentially non-residential systems. And

1 facilities that use systems above this size threshold
2 include retail food facilities, like supermarkets and
3 grocery stores, cold storage warehouses for industrial
4 process facilities and in ice rinks. Commonly, these
5 systems are large and custom built to suit the needs of
6 the facilities.
7 --o0o--
8 RD AIR POLLUTION SPECIALIST KAUR: Starting with
9 the proposed requirement for new facilities.
10 Technological advancements have made it possible
11 for new facilities to use refrigerants with very low-GWP
12 values today. Low-GWP alternatives to HFCs consist of
13 natural refrigerants like carbon dioxide, ammonia and
14 hydrocarbons. Additionally, the next generation of
15 synthetic refrigerants hydrofluoroolefins, or HFOs, are
16 under rapid development. The map on the right shows that
17 in 2019, there were over 80 supermarkets in California
18 already using low-GWP refrigerants. In 2020, we know this
19 number has grown to over 100.
20 CARB is proposing that starting January 1st,
21 2022, all facilities will be required to use refrigerants
22 with A GWP less than 150. New ice rinks will have an
23 effective date of 2024.
24 This requirement will drastically reduce the HFC
25 emissions from a facility. For example, a new supermarket

today would use refrigerants with a GWP more than 2,000. If that GWP is lowered to below 150, that is a direct reduction in emissions by more than 90 percent. This requirement would apply to newly constructed facilities and facilities that undergo remodels where most of the refrigeration equipment is being replaced. Also, this requirement will apply to all of the end-use sectors that I mentioned on the previous slide.

It is worth mentioning that our F-gas Reduction Incentive Program, or FRIP, has been designed to help the industry with this transition. For the first round, CARB will be funding supermarkets and grocery stores that will be implementing climate friendly tech -- refrigeration technologies. Other State agencies, such as the CEC, and utilities such as SMUD, LADWP and Southern California Edison also offer incentives for low-GWP refrigerant technologies in various end uses.

Next, I will cover the proposed rules for existing facilities. Originally, this 150 GWP limit was CARB's proposal for systems being installed in all facilities whether new or existing. However, through stakeholder engagement, we came to understand that the transition to low-GWP refrigerants is currently challenging for existing facilities.

The main reason is that the current refrigerants

that are low GWP, like CO2 and ammonia, are not compatible with the existing infrastructure, which was designed for HFC refrigerants. For example, an existing supermarket that uses HFCs today cannot simply remove the HFCs and drop in these low-GWP refrigerants. To do so would require a complete replacement of the system, including all of the piping.

To overcome this challenge, but still achieve meaningful emissions reductions, we are proposing different requirements for existing facilities.

Next slide, please.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: We will start with the retail food sector. The retail food facilities, mainly supermarkets and grocery stores use the largest number of refrigeration systems over that 50-pound threshold in California today. A very large amount of HFCs are banked in those systems, which leak into the atmosphere at high rates. We know this because all of these facilities are registered with CARB under the Refrigerant Management Program, or RMP.

Before I get into the details, I want to highlight the fact that the development of these rules was built on a partnership between CARB and the refrigeration stakeholders. Over the last year, some major supermarket

1 companies and organizations like the Northern American
2 Sustainable Refrigeration Council, or NASRC, have
3 demonstrated a commitment to achieving our common climate
4 goals.
5 They have also demonstrated great thought
6 leadership in suggesting creative ways to solve the
7 complex problem of reducing emissions from the retail food
8 sector, and a spirit of collaboration whereby they worked
9 closely with CARB and with each other to make the
10 compliance options implementable and enforceable. The
11 proposed rules here are different from the original
12 proposal, but are expected to achieve very similar
13 emissions reductions in the year 2030.
14 We are proposing company-wide reduction targets
15 for supermarkets and grocery stores in California to cut
16 their emissions down by 2030. Large companies will also
17 have an interim compliance target or progress step in
18 2026.
19 There are two metrics. The first metric is
20 really about reducing GWP of the refrigerants used by each
21 company. And the second metric gives credit for reducing
22 the amount of refrigerant, for example, replacing an older
23 system with one that uses less refrigerant. These are
24 per-company targets, which means companies have the
25 flexibility not to retrofit every single system or store.

They can leave some stores untouched.

Companies also have the flexibility to plan their compliance over the next eight to ten years. In recognition of the challenge faced by small businesses, we've set a more relaxed base for compliance by companies that own fewer than 20 stores and are not part of a national chain.

Importantly, it prepares this sector for a future HFC phase-down or a virgin refrigerant sales ban, since they would have already transitioned to lower-GWP alternatives. As I mentioned, the U.S. has not yet ratified it, but if it happens, then this sector is prepared.

--o0o--

RD AIR POLLUTION SPECIALIST KAUR: For other end-use sectors like industrial process refrigeration and ice rinks, we are proposing GWP limits on new systems that will be placed in existing facilities. Now, some sectors like cold storage are already covered by the existing HFC rules. For other sectors like ice rinks and industrial process refrigeration, CARB once again recognizes that existing facilities may have less flexibility to modify their systems, as compared to I brand new facility or one that's undergoing a build remodel. CARB's intent ultimately is to eliminate the use of very high GWP

1 refrigerants in every end-use sector that uses these large
2 refrigeration systems.
3 --o0o--
4 RD AIR POLLUTION SPECIALIST KAUR: Now that we've
5 gone through the proposed limits for refrigeration
6 systems, we will discuss requirements that support robust
7 enforcement. We will use standard tools like labeling and
8 record keeping for manufacturers. The record keeping
9 requirements are consistent with those under the existing
10 California HFC regulation. There's also a labeling
11 requirement which require -- which can be met by labels
12 that manufacturers already use, if they display the type
13 and amount of refrigerant and the date of manufacture in a
14 standard format.
15 Additionally, we have reporting requirements for
16 the retail food facility at the owner/operators to enforce
17 compliance with the company-wide reduction targets. These
18 facility owners/operators already report to CARB under the
19 Refrigerant Management Program. Each year, they're
20 required to submit an annual report to CARB using the
21 online database R3. To make things simpler, the reporting
22 requirements for these new rules will be harmonized with
23 the existing RMP regulation. And this way, facility
24 owners/operators will be able to report their information
25 as part of that same annual report that they already

submit to CARB with minimal additional work.

This brings me to the end of requirements for the refrigeration systems. I will now turn things over the Kathryn for the remainder of the presentation to discuss the requirements for air conditioning systems and our concluding slides.

Thank you.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: Thank you and good morning. Kathryn Kynett and I am speaking on behalf of the HFC team regarding the new requirements we are proposing for stationary air conditioning equipment.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: CARB's regulatory proposal for stationary air conditioners is a GWP limit of 750 for new equipment. This means that equipment manufactured after the effective date must use a refrigerant with a GWP less than 750. In the initial regulatory concepts, we propose 2021 as the effective date. The proposed regulation posted as a part of the 45-day notice has an effective date of January 2023.

The 2023 compliance date originates from a joint commitment letter we received from an industry coalition and the Natural Resources Defense Council urging CARB to adopt a 750 limit effective 2023 contingent upon the

completion of codes and standard updates for next generation refrigerants.

Based on the current status of California building code updates, we are proposing a 15-day change to provide an extension to 2025 for residential and commercial equipment where building code updates would enable the use of alternative refrigerants. These products are the two categories on the left, the main types of air conditioning equipment used in residences as well as commercial and other types of buildings.

We would like to keep the 2023 compliance date for room air conditioners and dehumidifiers as building codes do not need to be updated for these categories.

These products are shown here in the third category on the right and tend to be smaller and cool a single room at a time. You can go out and buy a compliant Room AC in California today that uses a refrigerant with a GWP less than 750. We believe the 2023 date is important for these types of products to ensure the market fully transitions in a timely manner.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: As I noted in the last slide, some refrigerant alternatives require building code updates in order to be used in air conditioning equipment in California. The reason for this

is that many of the next generation refrigerants have an A2L classification, meaning lower flammability in the standards that govern safe refrigerant use.

Lower -- lower flammability -- refrigerant flammability is evaluated based on a range of different properties. Lower flammability means that these refrigerants do not ignite easily, but it is possible for them to ignite in certain conditions. When they do ignite, they give off less heat and do not sustain a flame very well.

Lower flammability refrigerants are actually in use today in California and around the world. If you bought a car recently or a room AC, there is a good chance it uses a lower flammability refrigerant. Lower flammability refrigerants are also allowed in chillers, which cool large buildings like large offices.

However, to use this type of refrigerant in all kinds of stationary air conditioning equipment would require further updates to the California Building Code.

CARB has received a number of questions from stakeholders about the codes and standards updates. CARB relies on safety experts and entities with jurisdiction over the safe use of refrigerants. This includes the California State Fire Marshal, as well as nationally accredited, standard-setting organizations such as UL and

ASHRAE, and others such as the U.S. Environmental Protection Agency, the U.S. EPA.

Each entity has their own timeline and cycle for incorporating updates and CARB has been following the relevant proceedings closely. This is a simplified flowchart showing the process for updating the California Building Code.

Updates are made to the California Building Code every few years and generally follow updates to safety standards. California and the United States use safety standards set by ASHRAE and UL. The ASHRAE and UL safety standards are based on international standards and are customized to be stringent in the United States.

Since the voluntary commitment letter, a few significant advances have been made. In 2018 and 2019, ASHRAE and UL approved updated safety standards with provisions for the safe use of lower flammability refrigerants. These safety standards reflect the results of years of extensive critical research testing and were developed in consultation with industry and safety experts. This year, the State Fire Marshal convened a working group to consider incorporating the latest UL and ASHRAE standards in to the California Building Code for 2023.

The State Fire Marshal decision is not finalized

at this time and the final decision could delay potential Building Code updates from 2023 to the next code cycle. I will be going over our 15-day changes, which includes extending the compliance date from 2023 to 2025 for equipment covered by these building code updates.

I also mentioned the U.S. EPA as one of the agencies with jurisdiction over safe refrigerant use. In addition to being allowed under the California Building Code, a refrigerant must have U.S. EPA approval. The U.S. EPA examines risk to human health, as well as environmental considerations as a part of the program on refrigerants.

In 2020, the U.S. EPA proposed a rule to consider approving lower flammability refrigerants for residential and commercial air conditioning equipment.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: And this brings me to our 15-day changes. As I said earlier, we would like to extend the implementation date from 2023 to 2025 for equipment needing Building Code updates to use A2L refrigerants. We are keeping the 2023 effective date for room ACs and dehumidifiers. We are proposing a -- proposing an extension to 2026 for variable refrigerant flow/variable refrigerant volume, VRF/VRV, systems, which are highly energy efficient, but require additional code

1 changes. It is important for this equipment to transition
2 to lower-GWP refrigerants as soon as possible, and for
3 this category, 2026 is the earliest day.
4 Finally, through this process, we've had many
5 meetings with stakeholders asking what more we could do
6 together to reduce HFC emissions and worked with them on
7 policy options to increase the use of recycled
8 refrigerant. The SLCP strategy contains a proposal that
9 would require recycled refrigerant to be used for
10 servicing existing equipment and we will be turning our
11 attention to this proposal next. However, we have
12 identified additional opportunities while working on this
13 regulation that we would like to include through a 15-day
14 change.
15 And that is for manufacturers to commit to using
16 10 percent recycled refrigerant and an early action credit
17 for low-GWP refrigerant use. We believe this will help
18 kick start better refrigerant recovery, recycling and
19 reuse, or R4 for short, for the refrigerants used in air
20 conditioning equipment. The R4 program is necessary to
21 achieve the remaining emissions reductions we need by 2030
22 and 2045.
23 We will continue to work with this public-private
24 partnership and incorporate additional stakeholders to
25 broaden this program through a future regulatory proposal

as, which we'll begin developing immediately following this regulation.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: And now, on to labeling and recordkeeping requirements. CARB has a standard suite of tools, which are used to enforce regulations. However, it's also helpful to add requirements, which are tailored to the regulation. For the 750 GWP limit, the two main tools we are adding are labeling and recordkeeping for air conditioning equipment manufacturers.

The labeling requirement can be met by labels that manufacturers already use, if they display the type and amount of refrigerant and the date of manufacture in a standard format. You can see on this slide an example of an existing label that would comply with these requirements.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: Here are the expected emissions benefits of the proposed amendments. In 2030, the annual emissions reductions are estimated to be 1.5 million metric tons in CO2-equivalent reductions from the new requirements for refrigeration systems and another 1.7 million metric tons in CO2-equivalent reductions from the new air conditioning requirements.

1 Together, the new requirements for refrigeration
2 and air conditioning achieve approximately 3.2 million
3 metric tons in CO2 equivalent reductions by 2030, which
4 translates to 32 percent of the progress we need to reach
5 our legislative mandate under SB 1383.
6 You can see the 15-day changes to extend the
7 compliance dates for certain types of AC changes the 2030
8 annual reductions from 3.8 to 3.2 million metric tons in
9 CO2 equivalents. This changes the percent progress
10 towards SB 1383 from 38 percent progress to 32 percent
11 progress.
12 Out to 2040, the emissions benefits are even
13 greater with cumulative reductions estimated to be 62
14 million metric tons in CO2 equivalents. This is
15 equivalent to taking about three-quarter of a million cars
16 off the road each year.
17 --o0o--
18 RD AIR POLLUTION SPECIALIST KYNETT: We are also
19 proposing two additional changes to the existing HFC
20 regulation, the addition of a variance process as well as
21 additional definitions. CARB has created a variance
22 procedure to address specific situations in which end
23 users cannot comply with the regulatory requirements.
24 There are two types of variances that someone can apply
25 for, an impossibility variance or a force majeure

variance.

By definition, an impossibility means that the applicant exercised extraordinary care, but was still unable to comply with the regulatory requirements for reasons beyond their control, despite exercising foresight to prevent the noncompliance.

The second type of variance, force majeure, means that there is an unforeseeable event such as a natural disaster that makes compliance with the regulation not possible. In both instances, the applicant must demonstrate that they used best efforts to anticipate and address any potential noncompliance. The main application materials include a compliance plan, a quantification of current greenhouse gas emissions and a mitigation plan. The variance is only for the applicant and is not a blanket variance for the entire industry and cannot be applied retroactively.

Finally, definitions were also added as a part of the proposed amendments, including, but not limited to, aerosol propellants, specific end uses of foams, chillers, household refrigerators and freezers and cold storage. Some existing definitions were also modified to conform to existing U.S. EPA definitions.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: This slide

highlights some of the main stakeholder concerns that we heard and how we address them. As discussed earlier, using refrigerants with a GWP less than 150 in new equipment going into existing facilities is currently challenging. We addressed this by limiting the 150 GWP requirement to new construction and fully remodeled facilities and by developing company-wide reduction requirements for supermarkets and grocery stores that addresses emissions from existing facilities. This solution was the result of a successful collaboration between supermarket companies, the North American Sustainable Refrigeration Council and CARB.

Another concern for refrigeration was the impact on small businesses to comply with the company-wide reduction targets. Small businesses in this sector are the independent owner/operators of grocery stores. While all companies have to meet the full targets by 2030, the small businesses with fewer than 20 stores in California, or not part of a national chain, will not have an interim progress step.

For air conditioning equipment, the main stakeholder concern is the year the GWP limit takes effect. We have addressed those concerns by extending compliance dates for air conditioning equipment. The industry has also committed to continue working on the

1 codes and further investments in training and research on
2 low-GWP alternatives.
3 --o0o--
4 RD AIR POLLUTION SPECIALIST KYNETT: To meet our
5 specific mandates, additional action is needed, especially
6 action that achieves reductions before 2030. This slide
7 shows our plan for moving forward. CARB is considering a
8 sales prohibition on new refrigerant above a threshold
9 GWP.
10 This would require using recycled refrigerant for
11 servicing existing equipment. Using recycled refrigerant
12 should decrease the amount of new refrigerant necessary
13 and incentivize greater refrigerant recovery from existing
14 equipment. This is something that we have in the SLCP
15 strategy and also something that industry has proposed to
16 us during our current rulemaking.
17 We think this is better suited to be its own
18 separate rulemaking following this one. And you can keep
19 an eye for work to begin on that as early as next year.
20 CARB will also be considering expanding the R4
21 program we are piloting through the proposed amendments by
22 working with stakeholders to kick-start the R4 program and
23 build it into a longer term program.
24 We believe there will be national interest in
25 this program and this could be a model that catalyzes

national action to increase the use of reclaimed refrigerant.

CARB is also considering low-GWP requirements for additional end uses. This could also include heat pumps, used as water heaters as emissions could increase rapidly from these sources as California moves to replace fossil fuel heating with electric city powered heat pumps for heating, as part of carbon neutrality efforts.

--o0o--

RD AIR POLLUTION SPECIALIST KYNETT: This brings me to the staff recommendation. We recommend the Board adopt the proposed amendments, Resolution number 20-37, and direct the Executive Officer to:

Incorporate proposed changes and make them available for at least 15 days; take final action to adopt the regulation; partner with stakeholders to finalize the refrigerant recycle, recovery and reuse, R4 program; and begin additional rulemakings, including expansion of the R4 program to build upon public-private partnerships and include additional stakeholders.

This concludes the presentation. Thank you for listening and we look forward to your comments and questions.

CHAIR NICHOLS: Thank you very much. Thank you for the team that did the presentation this morning. This

1 took time, but it needed to take the time to go through
2 some important details here. This is a complex issue as
3 you've correctly pointed out, but it's one that's of great
4 importance. And I think the approach that you're taking
5 is really a creative one and one that has relied on a lot
6 of good positive input from the community of chemical
7 industry manufacturers, equipment manufacturers, as well
8 as the -- as well as advocacy organizations to come up
9 with something that seems to be a really strong approach.
10 I would like to now turn to the public comment
11 and I will ask Mr. Sakazaki to call the first commenters,
12 please.
13 Also, before we do that, though, how many people
14 do we have signed up to comment on this item?
15 BOARD CLERK SAKAZAKI: Chair Nichols, we
16 currently have 32. I want to ask very quickly everyone
17 who wish to comment on this item, please raise your hand,
18 so we can kind of work out timing.
19 CHAIR NICHOLS: Yes. We do have the discretion
20 to go to a two-minute time limit, which we do impose on
21 items where we get, you know, more than something like 30
22 or 40 people wishing to all comment.
23 At the moment, I think we can go forward with a
24 three minute limit and just ask people to please, if you
25 hear that someone has said what you were planning to say

before you, just to say that you agree with them. We'll try to move this along expeditiously, while still giving everybody a chance to put in their comments. So with that, would you go ahead and call the first three.

BOARD CLERK SAKAZAKI: Thank you, Madam Chair.

So now we have about 35. If you wish to -- again, if you wish to speak on this item, please raise your hand or dial star nine, if you're on the phone.

Our first three are Phillip Beste, Stephen Yurek and David Gauvin.

Actually, I'll pause and say I apologize in advance, if I mispronounce your name.

So Phillip, I have activated your microphone. You can unmute yourself and begin.

MR. BESTE: Good morning, Chair Nichols and Board members. My name is Phillip Beste. I'm a mechanical engineer and have worked in the industrial refrigeration industry for 35 years. I am an active member in RETA, Refrigerating Engineers and Technicians Association. And IIAR, International Institute of Ammonia Refrigeration.

I currently work for Hansen Technologies, a manufacturer of shut-off valves and control valves used in refrigeration marketplace. I have to emphasize that our valves are designed and rated to work with most refrigeration applications, so no matter what refrigerant

is used, the cost of our valves does not change.

All refrigerants pose risks, but our -- but based on sound engineering design, quality construction, and proper maintenance, refrigeration systems are safe. As a manufacturer of valves, we emphasize safety first in our current and new innovative products. Our goal is to improve the safe and efficient operation of refrigeration systems.

Thank you for your time in this matter and I appreciate the time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Stephen Yurek. Stephen, I have activated your microphone. You can unmute yourself and begin.

MR. YUREK: Thank you.

Madam Chair, members of the Board, I'm Stephen Yurek, the President and CEO the Air-Conditioning, Heating and Refrigeration Institute.

I thank you for the opportunity to provide comments concerning CARB's proposed amendments related to stationary air conditioning equipment on behalf of the AHRI's member companies, which represent our manufacturers of over 90 percent of the HVACR products sold in North America.

I'm here today to urge the Board's full support

for the agreement between AHRI and CARB staff on the low-GWP compliance date related to issues for stationary air conditioning equipment.

For more than a Decade, AHRI has supported regulations to reduce the consumption and production of high global warming HFCs. And far from sitting on the sidelines, this industry were the original proposers and strongly supported the Kigali amendment.

In addition to supporting an amendment, we've been working tirelessly to get it adopted by the U.S. government and have gone so far as to have legislation that is currently before Congress, and has, as of this morning, is still one of the items that could be added to the last bill passed this year.

While CARB included a provision in the 45-day language for a 2023 transition date, which AHRI supported in 2018, because the circumstance is beyond our control, as explained by staff, California's Building Codes currently don't allow us to comply with that date.

In recognition of this, the groundbreaking agreement we reached with CARB staff as they present it today is even more important. We support this agreement and the proposal given by staff today and its three main provisions: First, the compliance dates, especially 2025 for residential and commercial air conditioning equipment;

1 second, to demonstrate concrete action before 2025, the
2 industry commits to take actions that will increase
3 reclamation refrigerants starting with a 10 percent
4 commitment outlined by CARB staff; in addition, we support
5 a CARB rulemaking related to a refrigerant reclaim program
6 in California that can be used as a kick start to a
7 national RECLAIM Program; finally, AHRI will continue to
8 proactively work with the State Fire Marshal and Building
9 Code developers to ensure the ability to use the new
10 generation of refrigerants in California to meet the
11 commitments in this agreement.
12 What has been proposed is a great compromise that
13 goes farther and faster than any regulation in the world
14 related to stationary air conditioning equipment, farther
15 than the F-gas regulations in Europe and farther than the
16 step-downs agreed to in the Kigali amendments.
17 The agreement we have reached will provide the
18 opportunity not only to meet, but even exceed the goals as
19 set forth in SB 1383. We look forward to working with you
20 to finalize the details, so that we can help implement
21 these important regulations.
22 We strongly urge the Board's support for the
23 agreement and the process outlined by staff.
24 Thank you.
25 BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is David Gauvin. After David, we have Mike Armstrong, Sriram Gopal, and David[SCI] Chandler.

So David Gauvin, I have activated your microphone. You can unmute yourself and begin.

MR. GAUVIN: Thank you, Ryan.

Chair Nichols, members of the Board, my name is David Gauvin and I'm pleased to provide comments on behalf of Trane Ice Rinks. First off, let me apologize for any shortcomings in English, as I am based out of Quebec, Canada, so French is my first language and hockey is my first sport.

I am an ice rink engineer and lead accredited professional. And I've been doing ice rink refrigeration for the last 15 years. I'm also a past president of the ASHRAE Quebec Chapter and now ASHRAE Refrigeration Chair in Quebec.

Trane Ice Rinks has been the leader in the ice rink market for the last 20 plus years with hundreds of installations across North America. We have done multiple NHL facilities, including one in California that was just installed in late 2020, making it the most recent and advanced system in the league using low GWP 513A refrigerant. We are striving to serve communities and professionals alike with safe and sustainable rinks.

1 That said, I'm calling in today to tell you about
2 a story of what happened with ice rinks in Quebec, as the
3 proposed changes on ice rink systems seam to contradict
4 what experience has shown us over the course of the last
5 10 years.
6 As you well know, the government of Quebec has
7 committed to prevent climate change and is a partner of
8 California in a Cap-and-Trade -- Cap-and-Trade system
9 since 2014 as part of the Western Climate Initiative. As
10 such, the government of Quebec has taken many steps to
11 lower its greenhouse gas emissions, including putting
12 forth technology-forcing programs in many diverse
13 applications, including ice rinks refrigeration.
14 In 2012, it was so decided that only ammonia and
15 CO2 were to be allowed in ice rink systems. Then, after a
16 thorough analysis of data from 2012 to 2016, that position
17 was overturned in 2017 in order to allow for new
18 generation low-GWP HFO-based refrigerants to be allowed up
19 to a GWP threshold of 750.
20 The reasons for that change of policy are clearly
21 mentioned in a government letter that was submitted to
22 this Board including, but not limited to: Toxicity of
23 ammonia; lack of any competition due to patents on CO2 in
24 ice rinks and the absence of viable options that lower
25 thresholds; due to technologies not available then, nor

today, nor tomorrow, especially given the COVID-19 context.

That 750 threshold still stands today in accordance with the latest regulations for Environment and Climate Change Canada. Furthermore, the old program has been rescinded as it was refrigerant-centric, contrary to the position document on refrigerants and their responsible views from ASHRAE.

As such, chillers used in ice rinks are now held to the exact same standard as any other chiller application and rightly so, as they are now held to the -- as they have the same low-GWP refrigerants, minimal charges, and low leak rates. Based on this recent reversal of a similar policy, Trane Ice Rinks opposes the less than 150 GWP in ice rink proposal. We urge the Board to reach out to Environment Quebec counterparts for further clarification about their policy reversal and return to the original proposal of a GWP limit of 750 for both new and existing ice rinks.

BOARD CLERK SAKAZAKI: Thank you. Your time has concluded.

Our next speaker is Mike Armstrong. Mike, I have activated your microphone. You can unmute yourself and begin.

MR. ARMSTRONG: Good morning. And thank you,

1 Madam Chair Nichols, for providing me with an opportunity
2 to speak with your team today. My name is Mike Armstrong.
3 I'm the President of A-Gas in the Americas. I'm here
4 today to speak on behalf of A-Gas national refrigerants
5 and Hudson Technologies. Together, we represent the three
6 members of the AHRI who are also reclaimers both in the
7 United States and internationally.
8 We have been safely and effectively reclaiming
9 refrigerants for decades, both in the United States and
10 around the world. We believe this program is the first
11 example -- the first example in the globe where a
12 government has developed a mandatory refrigeration
13 phase-down program that is aligned with and has buy-in
14 from industry manufacturers.
15 This is a first step. This facilitates further
16 program expansion and this is progress. It sets the stage
17 for a collaboration between government and industry to
18 save the environment. I would like to commend the various
19 stakeholders, including the CARB staff, for working
20 tirelessly and in the middle of COVID to get this to where
21 it is today.
22 We believe there's sufficient reclaim material in
23 the United States to support this offset program as the
24 State considers a multi-year fulfillment program. We also
25 believe that just California-based recovered refrigerant

in the near term may not be sufficient and that the State should consider the use of certified reclaimed refrigerants from the United States in whole. This can be explored further in the rulemaking process.

As this program develops, the reclaimers are able to work with CARB to develop processes that support, not only this program, but also broader refrigerant management initiatives for the State.

Getting this program right is a very important process, as other states, that federal government and perhaps other countries will pivot off of this as the standard. Ensuring that a program is built around transparency and clear guidance is imperative. It is important to prevent cheating in these types of refrigerant management programs and we believe that existing programs in the state with both rigor and integrity already exist within the California EPA, that includes the ODS protocols that are currently an example will be quite helpful here. They've been able to provide baselines that we can adapt as we move forward with the process.

Third-party verification is also critical for any reclaim program to work. We will need to finalize this program expeditiously and get stakeholder alignment and make that program successful. The third-party

verification step is also important in minimizing the administrative burden on program stakeholders. And there's an industry prepared to help in this space. Again, the State has well-established relationships and a certification program for those verifiers.

We also strongly encourage CARB to support the development of a broad RECLAIM Program at the beginning of next year. I believe this program similarly is well supported by CARB and industry, the same program we're discussing today will enable the success of the broader program.

Subject to any questions, I greatly appreciate your time.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is Sriram Gopal. Sriram, I have activated your microphone. You can unmute yourself and begin.

MR. GOPAL: Hello. My name is Sriram Gopal. And I'm speaking on behalf of the Association of Home Appliance Manufacturers.

First, there are a couple things that I'd like to clarify that may have been a little misleading in CARB staff's presentation. First of all, AHAM did support the HCF phase-out for refrigerators, but we did not sign the voluntary commitment letter agreeing to a 2023 phase-out date for dehumidifiers and large room air conditioners.

1 For those products, UL safety standards and EPA
2 allowance is what is determinative, not building codes.
3 This rule is problematic, because it would remove
4 dehumidifiers and larger room air conditioners from the
5 California market in 2023. Considering that CARB is
6 making a push on indoor air quality, we don't believe this
7 is justified.
8 The reason for this is because with respect to
9 dehumidifiers, EPA has not approved the alternative
10 refrigerant for humidifiers and not -- and, in fact, has
11 not even started on it. Even if they were to start on it
12 in January, that process usually takes one to two years to
13 complete as the Chair knows. Then it takes two to three
14 years for manufacturers to redesign, test for safety and
15 retool their facilities. The chances of all that
16 happening by January 1, 2023 are very low.
17 It is a risk that is unnecessary and we ask that
18 the deadline simply be moved to 2025, as it has been for
19 other products. It could be later and it would not impact
20 any GHG emissions modeling that CARB itself has announced
21 to the public.
22 For larger room air conditioners, the safety
23 standard in place by UL simply does not allow for large --
24 a large enough amount of flammable refrigerants to be
25 used. And that cannot be changed until 2024, even

assuming the safety standard bodies would consider increasing the amount, which they rejected during the last discussions.

These actions are beyond the control of AHAM. So CARB setting a 20 -- January 2023 date assumes that all of these entities will fall in line. CARB should be aware that these products are seriously -- seriously at risk if the Board does not move to a 2025 date. And there is no real need, given that GHG emissions modeling shows that a 2025 date would not alter your forecast significantly.

So we're disappointed that CARB has been unwilling to work with us in any real way for the entirety of this rulemaking. The statement made that they started with a '21 date is not meaningful, because that was never a realistic time frame. 2025 is an attainable goal and would not substantively change CARB's goals.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Daniel Chandler. After Daniel, we have Katie McGinty -- McGinty, excuse me, Ronald Matwee and Christina Starr.

So, Daniel, I have activated your microphone. You can unmute yourself and begin.

MR. CHANDLER: Thank you very much. My name is Daniel Chandler and I represent 350 Humboldt, which is a

1 grassroots climate activism group in Humboldt County.
2 California is a model for other governments
3 around the world, and therefore, it needs to set a very
4 high bar. Note, in these comments I am not addressing the
5 air conditioning amendments, just those for stationary
6 non-residential installations.
7 The proposed amendments are estimated to reduce
8 emissions by 40 percent below baseline by 2040. This is
9 clearly very far from the 2045 goal of net zero emissions.
10 Please see the graph on page 123 of the staff report for a
11 dramatic illustration of how inadequate these amendments
12 are. This is a perfect example of Bill McKibben's
13 conclusion that winning slowly is the same as losing.
14 The staff report has also presented a course of
15 action that would get us to where we need to be and which
16 will positively influence regulations around the world,
17 namely alternative one, which would set a GWP limit of 10.
18 See page 131 of the staff report for this discussion.
19 Essentially, that means making the decision to convert to
20 natural refrigerants by 2030.
21 The staff report questions the feasibility of
22 alternative one, because of remodeling times, but there
23 are already technological ways around that issue and there
24 will certainly be more if alternative one is adopted. And
25 we're also talking about 10 years to phase this in.

1 Staff also questioned the cost, but staff report
2 acknowledges greatly underestimating the future social
3 costs of failing to act decisively in the present.
4 I request that you adopt the proposed amendments
5 for refrigerants for new and totally remodeled
6 supermarkets and cold storage, but also ask that staff
7 come up with a phased way of moving to natural
8 refrigerants for existing programs in the next 10 years.
9 Incentives such as clean energy standards for
10 refrigerants, along with technical assistance, can make
11 this possible.
12 In short, choose alternative one with options to
13 make it easier and less expensive to implement especially
14 for supermarkets in disadvantaged neighborhoods.
15 And finally, I hope that you very soon tackle the
16 thousands of convenience stores and other facilities using
17 less than 50 pounds of refrigerants each.
18 Thank you very much.
19 BOARD CLERK SAKAZAKI: Thank you. Our next
20 speaker is Katie McGinty. Katie, I have activated your
21 microphone. You can unmute yourself and begin.
22 MS. MCGINTY: Hi. Yes. Thank you. Hi. I'm
23 Katie McGinty, Chief Sustainability Officer for Johnson
24 Controls, a leading global sustainable buildings
25 technology company. It's an honor and privilege to join

you today.

I'm here today to do just a few things. One, first and foremost, to commend Richard Corey and the CARB staff for running a thorough, thorough-going, engaging and transparent process that has indeed produced a path-breaking rule for the planet and tackling global warming.

Second, I want to say that Johnson Controls thoroughly supports this rule of CARB Resolution 20-37. As a top rated sustainability company - we're AAA rated top five percent of sustainable companies in the world - we wholeheartedly endorse this major step forward for tackling climate change.

Third, we also especially want to commend the CARB staff for their thoughtfulness in achieving this huge milestone, while also allowing for essential safety training on new materials.

Finally, and maybe most importantly, we at Johnson Controls want to thank and congratulate Chair Mary Nichols and this Board. This rule is another example of your path-breaking leadership, which is always important, and in recent years, has truly been vital. Thank you for this major step forward for the environment, for public safety, and for progress in the crisis of climate change and tackling it.

1 Thank you very much.
2 BOARD CLERK SAKAZAKI: Thank you.
3 Our next speaker is Ronald Matwee. Ronald, I
4 have activated your microphone. You can unmute yourself
5 and begin.
6 MR. MATWEE: Hello. My name is Ron Matwee from
7 Nortam Consulting. I have worked in the industrial
8 refrigeration industry for over 50 years, specializing in
9 design, installation, service and operation. And with a
10 company that has installed over 5,000 ice rink services
11 internationally, including ones for the NHL.
12 I am commenting to share my support for CARB's
13 proposed 150 GWP limit for ice rinks and to suggest
14 including existing ice rinks in this 150 GWP.
15 Eighty percent or more of ice rinks are already
16 using ammonia with zero climate impacts. And there's no
17 reason that I can imagine to allow more HFC in this issue.
18 It would be a shame to see a replacement of
19 climate-friendly ice rink systems with refrigerants with
20 hundreds of times the impact on global warming and
21 unnecessary, given the environmentally, sound, cost
22 effective and safe options available in ammonia and CO2.
23 In my experience, ammonia ice rink systems are
24 safe, energy efficient, and cost effective. This is why
25 most large industrial systems choose ammonia as the

1 preferred refrigerant. Typically a system using ammonia
2 or CO2 is far more robust than any system using HFCs.
3 End users follow relevant codes and standards,
4 which are already in place, which allow them to safely
5 manage these systems without incidence. Many ammonia
6 systems already installed are over 50 years old and are
7 still in operation.
8 There have been many technology advances,
9 including low-charge systems, computer control and
10 monitoring systems that are making this type of equipment
11 even more safe and more easy to use. Safety is always an
12 issue with any refrigerant, but the real-world experience
13 shows ammonia is beng safely used in a majority of
14 existing ice rinks at this time.
15 There have actually been more fatal incidents
16 involving freon-based refrigerants than with ammonia and
17 there is far more ammonia systems operating today. Cost
18 wise, depending on the system, ammonia or CO2 systems are
19 cost competitive with HFCs, as far -- even in specific
20 situations where their ammonia systems are more, they are
21 more -- the -- the energy outperformance of HFCs, price of
22 refrigerants and increasing reliability and longevity of
23 an ammonia or CO2 system.
24 Thank you for the opportunity to comment and I
25 strongly support amending the proposal to expand the 150

1 GWP limit to replacement of chillers in existing ice rink
2 facilities.
3 BOARD CLERK SAKAZAKI: Thank you.
4 Our next speaker is Christina Staff. A
5 Christina, we have Gypsy Achong, Alex Hillbrand, and Jamie
6 Hodd. Christina, I have activated your microphone. You
7 can unmute yourself and begin.
8 MS. STARR: Thank you. I'm Christina Starr with
9 the Environmental Investigation Agency, EIA. We are an
10 independent environmental organization and we've been
11 closely engaged in support of this proposed HFC rulemaking
12 from the beginning. I commend CARB on the rigorous
13 process and all the work leading up to this proposal and
14 strongly support finalizing and adopting it, but highlight
15 two key areas for your consideration today at this hearing
16 for inclusion in 15-day changes:
17 First, in support of the jump-starting our
18 refrigerant recovery, reclamation and reuse program, and
19 the urgent need for further regulations addressing venting
20 and end-of-life emissions; and second, on ice rink
21 refrigeration systems, as you heard from our previous
22 commenter, calling to strengthen the proposed 150 GWP
23 limit for existing ice rinks.
24 In addition to phasing out HFCs in new equipment,
25 as this proposal does, we in the United States must begin

1 to lead on tackling the massive refrigerant emissions
2 coming from existing equipment at end of life. CARB
3 staff's presentation today incorporated aspects of our
4 proposal to jump-start recovery and reclamation of used
5 refrigerant in the AC sector as a compromise for an extra
6 two years to allow a transition in new AC equipment.
7 Our written comments explain why this proposal is
8 eminently feasible, but just the first step to more
9 comprehensively address this issues. The next regulation
10 should ban all sales of high GWP virgin refrigerants
11 requiring reclaimed refrigerant to service equipment and
12 explore other potential levers towards this goal such as a
13 fee on the sale of virgin refrigerants greater than a 150
14 GWP to finance rebates for recovery and reuse of
15 refrigerants.
16 Our second feedback today is in regard to ice
17 rinks and keeping in mind EIA's independence, adherence to
18 facts, and our flexibility with other compromised in
19 today's proposal, we share our strong concern that it
20 allows an unnecessary and inconsistent increase in HFC
21 refrigerants in ice rinks and sets a potential global
22 precedent in this regard.
23 EIA and a coalition of over 120 stakeholders,
24 representing the refrigeration industry, including end
25 users, sent CARB a letter urging you to apply a 150 GWP to

ice rinks. CARB has applied this only to new facilities, which are a tiny minority of this sector's footprint. CARB regulations should be technology neutral, but not neutral when it comes to ensuring we can achieve the goal of carbon neutrality in the next 20 years in a safe and cost-effective way.

Ice rink systems being replaced in 2024, when this limit applies, can be expected to operate until 2044. We strongly urge an amendment to the proposal in the 15-day changes, to apply a 150 limit to existing facilities.

The key fact here is more than 80 percent of ice rinks in California already use these low-GWP refrigerants. Why are we not holding them to the same standard as supermarkets, which by comparison only use these refrigerants in five percent.

BOARD CLERK SAKAZAKI: Thank you.

MS. STARR: Thank you.

BOARD CLERK SAKAZAKI: Our next speaker is Gypsy. I have activated your microphone. You can unmute yourself and begin.

MS. ACHONG: Thank you. Good morning, Chair Nichols, Board members and CARB staff. My name is Gypsy Achong and I represent an ad hoc coalition of HVAC manufacturers and distributors, California utilities,

building designers, energy consultants, and environmental organizations committed to supporting California's actions to reduce greenhouse gas emissions from buildings.

We support CARB's efforts to transition to lower-GWP refrigerants in new stationary air conditioning equipment. We also note that building electrification, where possible, with an increasingly clean power supply, is a key component of California's plans to reduce greenhouse gas emissions from buildings.

To that end, we've highlighted to CARB staff highly efficient technologies such as variable refrigerant flow, or VRF, heat pumps that provide an all-electric solution for heating and cooling in new installations and retrofits of existing buildings with attractive part-load efficiency.

These systems also support a high standard of occupant comfort, save money and afford great flexibility in space design as evidenced by the number of LEED certified and Energy Star rated buildings that use the VRF systems.

As we've heard, the safety standards developed by ASHRAE and UL that apply to VRF systems currently do not support use of these systems with refrigerants classified as A2L. As such, we firmly support CARB staff's proposal to develop 15-day language including an extension through

January 1, 2026, the highly efficient technology, such as VRF, to allow update of the safety standards and the intention to establish a refrigerant recovery, recycle, reuse program.

We are committed to partnering with CARB staff as they finalize that 15-day language and look forward to contributing to the development and implementation of the proposed R4 program.

Thank so much for the opportunity to engage in this rulemaking.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Alex Hillbrand. Alex, I have activated your microphone. You can unmute yourself and begin.

MR. HILLBRAND: Great. Thank you and good morning.

My name is Alex Hillbrand and I'm a policy advocate at the Natural Resources Defense Council. On behalf of NRDC, I'd like to urge the Board to adopt the proposed regulation before it pertaining to hydrofluorocarbons.

In adopting this regulation, CARB will extend California's already noteworthy leadership on HFC policy. CARB will also be setting a high bar for other states and in particular the incoming Biden Administration, as it

1 looks forward to cutting HFC emissions nationwide,
2 including by joining the Kigali amendment.
3 NRDC has along supported CARB's effort in this
4 area, and in 2018 was among those, including AHRI and a
5 number of HVAC manufacturers, who urged CARB to adopt the
6 AC's portion of this rule starting in 2023.
7 In light of current circumstances, however, we're
8 pleased to support adoption of this regulation with 2023
9 compliance date for a couple of appliance types, 2025 for
10 the majority of them and 2026 for a particular category of
11 HVAC equipment for which the underlying safety standards
12 need even more development work, such as variable
13 refrigerant flow systems
14 We're pleased to see that a requirement to
15 reclaim refrigerant installed in new HVAC systems in 2023
16 and 2024 will be included in this regulation. While we'd
17 have preferred that manufacturers be obligated to reclaim
18 more than just 10 percent, the proposal lands on an
19 acceptable level to kick-start CARB's future exciting work
20 in this area.
21 We also compliment CARB staff's hard work on the
22 proposal for the refrigeration systems. Like the air
23 conditioning and heat pump requirements, these regulations
24 are first of their kind and will cut deeply into this
25 major HFC emissions source. We also especially appreciate

the extra time provided smaller companies to make for a more equitable transition from HFCs in those systems, lessening the likelihood likely that there are unintended consequences for communities facing food availability challenges and more.

In sum, we urge the Board to adopt these regulations and thank staff very much for their hard work on this topic.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Jamie Hodd. After Jamie, we have Dave Schaefer, Colin Laisure-Pool, and Nanette Lockwood.

So, Jamie, I have activated your microphone. You can unmute yourself and begin.

MR. HODD: Thank you, Mr. Sakazaki and Madam Chairperson. I'm Jamie Hodd. I work as the general manager for the Energy division of Alfa Laval's Canadian business entity.

Some of you may know Alfa Laval is one of the well known global designers and manufacturers of high efficiency plate heat exchangers that are utilized in several key positions in industrial and commercial refrigeration systems, such as chillers, condensers and super heaters.

About me specifically, I'm based in Ontario

Canada and I work as the head of Alfa Laval in Canada. I'm a licensed professional engineer in the province of Ontario, Canada. And I work with heat exchangers in industry and commercial applications, including refrigeration for the better part of my 21 plus years with Alfa Laval.

I'm commenting to share my support for CARB's proposed 150-global warming potential limit for ice rinks. And to suggest including existing ice rinks in this 150 global warming potential limit too.

Eighty percent or more of the existing rinks, has been mentioned earlier, are using ammonia with zero climate impacts. And there's no reason to allow more HFCs in this use. It would be a shame to see replacement climate-friendly ice rink systems that are using a natural refrigerant with next to zero GWP with refrigerants that use hundreds times -- with hundreds of times the impact on global warming.

Our company supplies chillers and other heat exchangers that are utilized with both natural refrigerants, such as ammonia and CO2, and synthetic refrigerants, such as HFCs and HFOs. And I can objectively state from experience that an ammonia-chilled ice rink system is safe, energy efficient and cost effective.

1 I have understood that there has been some recent
2 general concerns or movements against the use of ammonia
3 for safety concerns. But it should be understood that
4 safety is a consideration with any refrigerant. All
5 refrigerants can potentially be dangerous and particularly
6 in confined spaces.
7 Nonetheless, real-world experience has shown that
8 natural refrigerants are being safely used in the
9 overwhelming majority of ice rinks. There have been more
10 fatal incidence in ice rinks that use freon based
11 refrigerants versus ammonia, even though there are more
12 than four times the amount of ammonia-based ice rinks
13 operating.
14 Technology advances in refrigeration systems have
15 worked towards lowering the overall charge of refrigerant
16 used. And I can attest that an ammonia based
17 refrigeration system utilizing the current available
18 technologies can operate at a refrigerant charge as low as
19 half a pound per ton of refrigeration, which is
20 essentially the same as that of synthetic refrigerant
21 systems.
22 Cost-wise, as a manufacturer that supplies
23 equipment that uses all refrigerants, I can confirm that
24 the up-front cost of a system design for ammonia is
25 similar as to one for a synthetic refrigerant on a pound

per ton refrigerant basis. And even in systems where the capital cost of a natural refrigerant-run system is higher, the total cost of ownership over the life of the equipment will be lower.

Thank you for the opportunity to comment and I support amending the proposal to expand the 150 GWP limit for replacement chillers in existing ice rink facilities.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Dave Schaefer. Dave, I have activated your microphone, you can unmute yourself and begin.

MR. SCHAEFER: Thanks very much. I appreciate this opportunity. I'm honored to be a part of this discussion.

I'm the Chair of IIAR. It's the International Institute of Ammonia Refrigeration. I'm also the Chair of the design and safety standard and also a licensed engineer in California.

In the interests of time, I won't reiterate what has been said, but I agree wholeheartedly that the systems involving natural refrigerants are cost effective, very efficient, very safe and reliable, and have been in place for many years. And therefore, I support amending the proposal to expand the GWP limit to replacement of chillers in existing ice rink facilities.

Thank you very much and good luck Chair Nichols with your retirement.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Colin Laisure-Pool. Colin, I have activated your microphone, you can unmute yourself and begin.

MR. LAISURE-POOL: Thank you so much. I'm Colin Laisure-Pool representing ASHRAE. I'm the Government Affairs Chair here for Region 10, which includes California.

Mine will be quick. You've already covered it. Kathryn already covered it. ASHRAE just wants to make sure that we get the latest refrigerant safety standards, which is ASHRAE Codes 15 and 34 updated so that we can incorporate the new A2L refrigerants.

So it's already been covered. I'm speaking in support. Thank you --

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Danette[SIC] Lockwood. After Nanette, we have Allison Skidd, Dave Malinauskas, and David Calabrese.

Nanette, I have activated your microphone. You can unmute yourself and begin.

MS. LOCKWOOD: Thank you. And I would like to appreciate the opportunity to speak, appreciate Chair

Nichols and members of the Board, and all of staff's work on this proposal. I will say that the determination and willingness to come to an agreement with industry was not easy. It took many, many, many meetings, and we really appreciate where staff has landed on this proposal and fully support it as written.

I will say that the -- the efforts to make the ice rink changes are certainly not what we've seen in the field. We do a lot ice rink work. And it would be really difficult to implement a 150 GWP in existing facilities, as many of them are quite old, and really not compliant with the current building codes, which would make them even more difficult to comply with the new buildings codes.

Again, thank you for your time.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker the Allison Skidd. Allison, I have activated your microphone. You can unmute yourself and begin.

MS. SKIDD: Okay. Thanks Ryan. Good morning and good afternoon. My name is Allison Skidd. I'm the Senior Manager of Global Regulatory Affairs for Rheem Manufacturing Company. Thank you for the opportunity to comment today.

As you may be aware, Rheem is a global brand with a comprehensive line of product offerings in residential

1 and commercial air conditioning as well as water heating.
2 Rheem proudly manufactures boilers in Oxnard, California.
3 Rheem also offers energy efficient commercial and
4 industrial refrigeration equipment via its Heat Transfer
5 Products Group, known as HTPG.
6 As a long-time supporter of California's goals
7 for HFC emissions reduction, Rheem is committed to
8 offering the technology that achieves the shift away from
9 refrigerants with high global warming potential, while
10 preserving efficiency and affordable costs to the
11 consumer. To that end, Rheem would like to applaud the
12 progress in Resolution 20-37 and strongly supports the
13 2025 compliance date for stationary air conditioning
14 equipment.
15 With respect to the use of recovered refrigerant,
16 we look forward to working with CARB directly on the
17 details of the manufacturer obligations in the new R4
18 program.
19 We'd like to express our appreciation to Richard
20 Corey, to Elizabeth, Mike, Kathryn and others on the CARB
21 staff for listening and acknowledging manufacturer input
22 throughout the rulemaking process. And finally, we'd like
23 to wish Chair Nichols and other exiting Board members the
24 very best in their next chapters.
25 Thank you very much.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is Dave Malinauskas. Dave, I have activated your microphone. You can unmute yourself and begin.

MR. MALINAUSKUS: Good morning. My name is Dave Malinauskus and I'm the President of CIMCO Refrigeration. We have 22 locations across North America and have employees who live and work in California. We are North America's leading ice rink contractor and have installed more than 5,000 ice rinks in our 100 year history.

I'm a professional engineer and have been with CIMCO for 25 years. First of all, I'd like to congratulate you for maintaining a leadership position on climate change in North America. We are in a climate emergency and action is required immediately. I am commenting to share my support for CARB's proposed 150 GWP limit for ice rinks and to urge you to include existing ice rinks in this 150 GWP limit.

As you may be aware, each ammonia ice rink systems saves roughly 71 metric tons of CO2 emissions annually, when compared to an HFO blend rink system such as R513. Over the equipment life expectancy, this represents 1,775 metric tons of CO2 emissions, which is equivalent to removing roughly 400 cars from our roads.

In addition to being environmentally friendly, these ammonia systems are much more energy efficient than

HFO blends like 513, which means a lower cost of ownership.

The IPLV method of determining energy efficiency would demonstrate that refrigerant 513 requires 41 percent more energy than ammonia. The theoretical efficiency of refrigerants, based on thermodynamic principles, shows that R513 requires 80 percent more energy than ammonia.

And finally, a real life study in Canada of two ice rinks in the same city at the same period of time demonstrated that R513, a high GWP refrigerant, required 72 percent more energy than ammonia systems.

We look forward to this ground-breaking regulation, setting an example of what good looks like for the remainder of North America. Eighty percent of ice rinks in California utilize refrigerants with a GWP of 10 or less. It is a proven technology and has been embraced by the State.

I strongly urge CARB to lower GWP limit for both new and retrofit ice rinks to 150 or less, to support our environment, to enhance innovation, and to create a sustainable future.

Thank you for the opportunity to comment.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is David Calabrese.

After David, we have Gary Schrift, Fariya Ali,

1 and Kevin Fay. So David, I have activated your
2 microphone. You can unmute yourself and begin.
3 MR. CALABRESE: Thank you and good morning, Chair
4 Nichols and members of the Board.
5 My name is Dave Calabrese and I'm senior Vice
6 President for Government relations at Daikin U.S.
7 Corporation. Daikin is one of the world's largest HVAC
8 manufacturers and we are committed to reducing the climate
9 and environmental impact of our business and our products
10 across their lifecycle. We have already safely introduced
11 tens of millions of systems utilizing lower GWP
12 refrigerants in Europe, Asia and across the globe. And
13 we're working hard to modify building codes and standards
14 in California and across the United States to allow for
15 their use.
16 Daikin has supported CARB's efforts in the space
17 since 2018 and we've worked closely with your staff on
18 this landmark regulation. I'd like to take a moment to
19 thank them for their time and collaboration.
20 We support the framework of the staff proposal
21 today. And we also commit to continuing to work with
22 CARB, the State Fire Marshal and the Governor's office to
23 ensure that the codes process continues to move forward as
24 soon as possible.
25 Daikin also strongly supports staff's proposal to

allow VRV/VRF heat pump systems until 2026 to comply with 750 GWP limit. As with the broader challenge of code barriers for lower GWP refrigerants, VRF heat pumps face additional code hurdles, which as you've heard, require additional time to resolve.

We are part of a multi-stakeholder coalition in support of these heat pump technologies, which will be critical to California's efforts for deep decarbonization of buildings.

VRF heat pumps not only energy efficiency gains, design flexibility and cost savings, but also allow buildings to fully electrify and switch from natural gas.

In closing, I'd like to highlight that the staff proposal has the additional benefit of providing a strong jump-start to a program on refrigerant recycling and reclamation that we believe will be a model for other states to follow.

We at Daikin commit to working with CARB and looking at the lifecycle of refrigerants, as you move forward into this important source of additional emissions reductions. Thank you for the opportunity to speak before you today and we look forward to working with CARB and California on implementing this ground-breaking regulation.

BOARD CLERK SAKAZAKI: Thank you.

1 Our next speaker is Gary Schrift.
2 Gary, I have activated your microphone. You can
3 unmute yourself and begin.
4 MR. SHRIFT: Good morning, Board. My name is
5 Gary Schrift and I am President of IIAR, the International
6 Institute of Ammonia and All Natural Refrigeration. We're
7 the trade association that develops anti-standards for the
8 safe, and efficient use, and application of ammonia and
9 other natural gases for refrigeration and cooling.
10 I have worked 32 plus years as an engineer, and
11 then as project management, and executive level management
12 in industrial refrigeration. Industrial refrigeration is
13 heavily dominated by ammonia, CO2, and propane as
14 refrigerants used by fuel and other gas processing
15 facilities, food processing facilities, medium and low
16 temperature food and product storage and ice rink
17 applications.
18 These 0, 1, and 4, respectively, GWP refrigerants
19 have been used, safely efficiently, and cost effectively
20 for decades in the processing of nation's and California's
21 gas supplies, food supplies, and storage and
22 transportation of both.
23 These low-cost commodity refrigerants,
24 refrigerants that are not patented, have many other
25 applications in addition to use as refrigerants,

1 agriculture and fuel to name a few.
2 These low-cost commodity refrigerants have well
3 developed safety codes and standards for all applications,
4 have very minimal, if any, long-term environmental effects
5 known through more than 100 years of application, and
6 therefore, have very minimal, if any, risk of needing
7 replacement in a few years or causing some new harm yet to
8 be determined.
9 For these reasons, and also for the cooling and
10 freezing energy efficient thermodynamic properties,
11 further reducing greenhouse gases from reduced electricity
12 use, we do strongly support CARB's proposed 150 GWP limit
13 for refrigerants used in ice rinks and we recommend that
14 CARB amend the proposal to expand the 150 GWP limit to
15 replacement of chillers in existing ice rink facilities
16 currently using ammonia or CO2.
17 Thank you for the time and for your understanding
18 that the large majority of existing ice rinks already use
19 ammonia or CO2 and there would be no clear reason to allow
20 these existing ice rinks to replace existing chillers with
21 new chillers that use greater than 150 GWP refrigerants.
22 Refrigerants greater than 150 GWP, that less than
23 750 GWP, such as R513, are relatively new refrigerants
24 with unknown long term environmental and health effects.
25 Thank you for the time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Fariya Ali. I have activated your microphone. You can unmute yourself and begin.

MS. ALI: Good morning, Chair Nichols and Board Members. Fariya Ali speaking on behalf of Pacific Gas and Electric. We appreciate and support CARB's proactive actions to reduce HFC emissions through these amendments. While recognizing the need to phase down high-GWP refrigerants in stationary air conditioning equipment, we also appreciate CARB staff's acknowledgement of the limitations imposed by current safety codes and standards and the need to line with their development in the next few years.

Thus PG&E supports CARB staff's proposal for 15-day changes to address these limitations by providing for an extension through 2026 for highly efficient technologies, such as VRF heat pumps and the intention to establish a broad based refrigerant recycling and reclaim program.

PG&E is proud to be the first dual fuel utility in California to support the State's efforts to advance efficient all electric new construction when it is feasible and cost effective. The extension for VRF technologies will ensure that California can continue to benefit from these highly efficient systems, which are

critical to the pursuit of all electric new construction and meeting the state's aggressive GHG goals.

Again, I reiterate our port of staff's proposal and I would like to wish everyone a safe holiday and hopefully undramatic end to 2020.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker Kevin Fay. After Kevin, we have Kurt Liebendorfer, Shelly Johnson and Chris Forth.

So, Kevin, I have activated your microphone. You can unmute yourself and begin.

MR. FAY: Thank you. Madam Chair, members of the Board, my name is Kevin Fay. I'm pleased to provide comments concerning the CARB proposed amendments on the use of HFCs in stationary refrigeration and air conditioning on behalf of the member companies of the Alliance for Responsible Atmospheric Policy, which I serve as its Executive Director.

First, on a personal note, Madam Chair, we've had the honor of working with you over the last three decades and add our congratulations to you as you move to the next phase of your superlative career.

The Alliance is the industry coalition of fluorocarbon producer and user entities in trade associations of companies that rely on these compounds and

1 we were organized in 1980.
2 I appear today to give strong support for the
3 revised proposal for the stationary air conditioning
4 transition dates and to achieve the transition for certain
5 equipment categories away from high-GWP HFC refrigerants
6 to low-GWP compounds and technologies.
7 This proposal moving the unit to area air
8 condition sector transition date to January 2025 and
9 industry providing a 10 percent reclaim commitment for the
10 23-24 period is the most comprehensive and far-reaching
11 policy with regard to the air conditioning sector around
12 the globe. It is both progressive and pragmatic that it
13 recognizes that complicated nature of the transition to
14 occur, the importance of having in place adequate building
15 codes and safety standards, as well as the tremendous
16 investment being made by the industry in achieving the
17 regulatory objective.
18 This proposal also creates a partnership with
19 this industry and will require additional work beyond to
20 further the development of policies with respect to
21 refrigerant management and reclaim programs, as well as
22 the consideration of the other policies encouraging the
23 use of reclaim material and equipment service as an
24 important component of how we achieve our objectives.
25 The staff referenced the Kigali amendment from

2016 for a global HFC phasedown. That amendment was successfully negotiated with the active support and input from our industry. The modified proposal before you today is consistent with the goals of the Kigali amendment and an important part of our goal to have a unified federal approach in the United States to achieve an HFC phasedown.

We believe that this CARB proposal will be an important precursor to that end in the coming year at the federal level. As part of our activity, we are also currently supporting federal legislation known as the AIM Act that would facilitate a federal program for this purpose.

The 2025 transition date you have proposed for the air conditioning sector is a very aggressive standard and one that will require a continued public-private partnership in order to achieve its proposed objectives. We support its approval, because the CARB staff has shown a willingness to understand the complex challenges confronting the industry, and a need to coordinate the implementation activities with a full suite of additional approaches.

In fact, similar flexible -- flexibility may be required for other parts of the refrigeration sector, such as ice rinks as you have heard today. We are prepared to work with you in developing the implementation rules and

1 programs to provide for a transition that is
2 environmentally and economically effective and works for
3 the many industry participants as well as the citizens of
4 California.
5 Thank you very much
6 BOARD CLERK SAKAZAKI: Thank you.
7 Our next speaker is Kurt Liebendorfer. And Kurt,
8 we have Chris Forth.
9 Kurt, I have activated your microphone. You can
10 unmute yourself and begin.
11 MR. LIEBENDORFER: Thank you. Hello. I'm Kurt
12 Liebendorfer, Vice President with Evapco. Evapco is a
13 manufacturer of low-charge ammonia refrigeration equipment
14 and chillers, which can be used for many refrigeration
15 applications, including ice rinks. We have several
16 manufacturing plants in the U.S., including one located in
17 Madera, California. I'm commenting to share our support
18 for CARB's proposed 150 GWP limit, including the proposed
19 inclusion of ice rinks at the 150 GWP limit as well.
20 Technology advances over the last five years in
21 low-charge ammonia systems have made this equipment even
22 more safe and easy to use as well as readily and
23 commercially available.
24 Ammonia systems are cost competitive with HFC
25 systems, where only slightly increased up-front costs.

Even in specific situations where the ammonia system may be slightly more than an HFC system, it is competitive when it comes to total cost of ownership due to 15 to 20 percent better energy efficiency with ammonia than HFCs.

Thank you for the opportunity to comment and I strongly support the 150-GWP limit and the proposal to expand the 150-GWP limit to the replacement of chillers in existing ice rink facilities.

Thank you.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is Chris Forth. After Chris, we have Christopher Perry, Morgan Smith and Brian Bogdan.

So Chris Forth, I have activated your microphone. You can unmute yourself and begin.

MR. FORTH: Thank you. Madam Chair and the Board members, my name is Chris Forth. I'm the Executive Director for regula -- Regulatory Codes and Environmental Affairs at JCI, Johnson Controls ducted systems.

I'll keep my comments brief. I just want to reiterate JCI's support for the CARB staff Resolution 20-37. We think it's fair and equitable. And I really want to express my thanks to the staff for all the meetings and calls that we've had over the -- over the last several years. It's been -- it's been a long road, but well worked.

We look forward to commenting on the 15-day notice, as well as continuing to work with staff on the details of the R4 Program.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Christopher Perry. Christopher, I have activated your microphone. You can unmute yourself and begin.

MR. PERRY: Great. Thank you. Yeah. Hi. I'm Chris Perry, Research Manager for the American Council for an Energy Efficient Economy, or ACEEE. We are a nonprofit research organization. We're based in Washington D.C. Although, we are a national organization, we think that the work done in California has really important implications in the entire energy industry, so I appreciate the opportunity to speak to the California Air Resources Board today.

I wanted to give just some very brief comments here in support of the HFC regulation extension for VRF technology, since we see it as an important technology to help California achieve its carbon prediction goals.

ACEEE recently released a study on electrification of space heating in commercial buildings. For the buildings included in our analysis we found that switching from fossil fuel heating to high efficiency heat

pump technologies would reduce commercial building energy consumption by 37 percent and greenhouse gas emissions by 44 percent.

And one of the key commercial building HVAC technologies included in the study was VRF and ductless heat pump systems. We found that the Pacific region, especially has a much greater cost effectiveness for VRF systems than a lot of other parts of the country. And that was especially in scenarios where they were replacing large fossil fuel equipment like boilers and also when the cost of carbon is considered. So in other words, VRF heat pump technologies performed particularly well in warm and mild climates and California is especially well-suited for them.

And so we believe VRF should continue to be included as one of the options for California buildings to help with building electrification and greenhouse gas emissions reduction efforts. As others have mentioned, without an extension of the HFC requirements, VRFs are in danger of not being allowed to be considered as an option, and which we believe would harm California's efforts to reduce its carbon emissions and also harm the HVAC manufacturing industry, which continues to work to develop and improve energy efficient and cost effective low carbon HVAC technologies like VRF.

1 So we support the extension for VRF system
2 refrigeration requirements and appreciate your time and
3 consideration here today.
4 Thank you.
5 BOARD CLERK SAKAZAKI: Thank you. Our next
6 speaker is Morgan Smith. Morgan, I have activated your
7 microphone. You can unmute yourself and begin.
8 MS. SMITH: Thank you. And good morning.
9 My name is Morgan Smith. I'm the Manager of
10 Programs and Operations with the Northern American
11 Sustainable Refrigeration Council. We're a 501(c)(3)
12 non-profit working in partnership with the supermarket
13 industry to advance the adoption of climate-friendly
14 natural refrigerants in supermarkets.
15 I'd like to take this time to acknowledge the
16 efforts of the CARB team to incorporate industry feedback
17 and address some of the challenges supermarkets face in
18 transitioning away from HFC refrigerants throughout this
19 rulemaking process.
20 The proposed Stationary Refrigeration Regulation
21 represents a collaboration between CARB and California
22 food retailers and resulted in a regulatory pathway that
23 gives retailers flexibility in their strategies to meet
24 California's HFC emission reduction targets.
25 I also want to acknowledge that the CARB team has

gone beyond just incorporating retailer feedback with the rollout of an incentive program to help support the transition to climate-friendly refrigerants. We've been pleased to see the combination of a regulation developed with stakeholders and a funding mechanism to aid the transition. And we appreciate CARB's partnership throughout the rulemaking process.

Thank you for your time.

BOARD CLERK SAKAZAKI: Thank you.

We have seven speakers left, oh, eight speakers left. I'm going to very quickly name them all off. Ryan Bogdan, Thomas Enslow, Chuck Shinneman, Doug Scott, Esther Rosenberg, Damian Breen, Wynand Groenewald and Jason Meggs. Oh, now we have -- so if you haven't heard your name and you wish to speak, please raise you hand or dial star nine now.

So our next speaker is Brian Bogdan. Brian, I have activated your microphone. You can unmute yourself and begin.

MR. BOGDAN: Thank you. I hope everybody can hear me. My name is Brian Bogdan. I am the Senior Director of Applications Engineering for LG Electronics U.S.A., Inc., Air Conditioning -- excuse me, Air Conditioning Technologies Division.

LG produces a very wide variety of products

1 including multiple categories of refrigerant-bearing
2 products. I am responsible for mini- and multi-split and
3 VRF systems in the United States, but I'm not responsible
4 for other categories that include window air conditioners,
5 portable air conditioners, portable dehumidifiers or other
6 such products.
7 As such, I'm not making any representation on
8 behalf of LG for or against CARB's proposal in those
9 product categories. With respect to stationary, mini- and
10 multi-split and VRF systems, I'd like to point out that LG
11 is a member of AHRI and are a strong supporter of ASHRAE
12 and other industry initiatives, such as the ongoing effort
13 to electrify and reduce greenhouse gas emissions, as well
14 as more energy efficient efforts.
15 We do appreciate the very hard work leading up to
16 the proposal that CARB has presented to us today. And LG
17 Electronics is supportive of CARB staff's proposal around
18 mini, and multi, and VRF systems. And we're looking
19 forward to working together on the 15-day language and the
20 subsequent implementation efforts.
21 Thank you very much for hearing our voice today.
22 BOARD CLERK SAKAZAKI: Thank you.
23 Our next speaker is Thomas Enslow. I have
24 activated your microphone. You can unmute yourself and
25 begin.

MR. ENSLOW: Good morning. Tom Enslow on behalf of the California State Pipe Trades Council and the Western States Council of Sheet Metal Workers, with members and other workers who install air conditioning and refrigeration systems.

The Pipe Trades and Sheet Metal Workers support the transition to lower greenhouse gas refrigerants, including slightly flammable HOLs. However, the original proposed 2023 implementation date would of -- have effectively allowed the use -- or required the use of A2L refrigerants in air conditioning systems before all safety studies and standards have been completed and the Building Code updates -- updated to allow for safe transition.

For that reason, we support staff's proposal to delay implementation of these regulations for most air conditioning systems until 2025, while promoting a recovery, recycling and reuse program in the interim.

The code-change process to expand the allowed use of flammable A2L refrigerants is not significant. Current code only allows A2L refrigerants in machinery rooms with strict ventilation and alarm requirements. The new standard would allow A2L and all HVAC systems in residential and commercial settings without requiring a machinery room and with more limited ventilation and alarm requirements.

1 Allowing A2L in these settings requires making
2 sure that the existing code requirements for air
3 conditioning systems that were adopted for refrigerants
4 that are not flammable are updated to be appropriate for
5 A2L use. For example, leakage, particularly in close
6 spaces, creates a fire life safety risk when using a2L.
7 And the current code zero leak standards for non-A2L
8 refrigerants actually, even though they're called zero
9 leakage allow a small amount of leakage especially in the
10 fittings used to connect piping.
11 Furthermore, we know that studies show that up to
12 85 percent of residential HVAC systems are installed
13 incorrectly due to the lack of worker training
14 requirements. This increases the risk of poorly installed
15 piping that leaks and creates fire life safety hazards
16 when you're talking about the installation of flammable
17 refrigerants.
18 At a minimum piping for A2L systems should
19 require zero leakage fittings and brazing by certified
20 brazers, such as already -- is already required for
21 medical gas piping.
22 No one is playing a game of delay here. We're
23 all going for the same end go -- goal. We just need to
24 make sure that installers have the appropriate guidelines
25 and training to make this ship sail safely.

Staff's proposed amendments allow us the time to make this happen and so we urge the commission to go forward with staff's recommendation.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Chuck Shinneman. Chuck, I have activated your microphone. You can unmute yourself and begin.

Chuck, are you there?

I have asked you to unmute yourself.

Okay.

MR. SHINNEMAN: Sorry, I didn't see the button.

BOARD CLERK SAKAZAKI: Go ahead.

MR. SHINNEMAN: Okay. Good. Thank you CARB staff, Board, and Madam Chairman. I'm Chuck Shinneman, Associate Principal with Capital Engineering, a California-based mechanical design firm.

Mechanical Engineering is part of an architectural team. It's tasked with the design of air conditioning systems. These systems are one of the largest energy consumers in modern buildings. As such, we are expected to bring often an outsized amount of energy savings. We use a variety of tools to meet these requirements. Primary to this is system efficiency.

But there is another directive, we are also

1 operating under, that is for our systems to not be seen or
2 heard. Variable refrigerant flow systems, VRF, is a
3 strategic component in the mechanical engineer's toolbox.
4 Case in point is the historical Governor's
5 Mansion in downtown Sacramento. A major intent in the
6 remodel of the building done in 2014 was to make it
7 livable. Being originally constructed in 1877, an
8 allowance of space in walls and ceilings, on the roof or
9 at grade for air conditioning systems was not included.
10 This created a challenging design problem coupled
11 with the DGS requirement for Leadership in Energy and
12 Environmental Design, LEED, energy performance only
13 increased the challenge.
14 VRF system market share is currently well over 20
15 percent and rising. There is a reason for this, the VRF
16 features of high energy performance, controllability and
17 small size. For the Governor's Mansion, these features,
18 coupled with the ability to eliminate natural gas for
19 heating, made it a natural for the project. To be honest,
20 without this system type available to us, the result would
21 have been more expensive to build, operate and far uglier.
22 CARB was given a responsibility to create
23 regulation that saves carbon. The extensions and
24 adjustments proposed here map a path forward that keeps
25 that promise, while working within the framework of the

building industry's ability to respond.

The built environment is an industry dating from our earliest ancestors. It is slow moving. Normally, for an institution-sized project, it can take over five years from design through construction. For example, my current -- my company is currently working on a project that's been in design for several years for equipment that will not be purchased for five to seven years out.

Which brings me to the primary reason for wanting to speak to you today, continuity. Continuity of availability of VRF system type is critical to the building industry. Buildings are all unique. Architectural systems are designed to meet specific requirements and are high coordinated and orchestrated.

Changing our systems from one to another is difficult. I applaud CARB's efforts to support the mandate while recognizing the capabilities and timelines of the building industry and our mutual thrust for decarbonization.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Doug Scott. Doug, I have activated your microphone. You can unmute yourself and begin.

MR. SCOTT: Thank you, Ryan. Thank you, Chair

Nichols. My name is Doug Scott. I'm the President of VaCom Technologies. We're a national company based in California. And we're focused on industrial refrigeration technology and controls.

I appreciate the opportunity to comment and I'm in support of the 150-GWP limit for replacement systems on ice rinks.

Where I thought I could bring value here is our company's experience with -- with new construction incentive programs, which we've delivered for utilities in California for 20 years. We've done retrofits, control systems, and real-time performance monitoring on some arenas. So, you know, I thought about what we have seen in that time and I thought -- our conclusion is that for ammonia and now CO2 systems, the operating costs and efficiencies looked at on a lifecycle basis are much better than HFC systems and concluded the reason is that it's not just about the refrigerant. It's not just about the -- the operating fluid. It's about how these systems are designed, and controlled, and operated, and maintained. And that is -- you know, that's somewhat true of these refrigerants in general, but certainly on -- on ice arenas.

So my conclusion is that these systems are going to have a much lower lifecycle cost, even if the first

1 cost is slightly higher, due to the engineering and better
2 integration with the facilities. In contrast to HFC
3 systems, and which was true of past HCFC systems are
4 commonly more of a derivative HVAC package that are not
5 particularly optimized for ice rink conditions and they're
6 not readily integrated with the rest of the building
7 facility systems, pumping, and heat recovery, and so on.
8 So, for that reason, I believe the 150-GWP limit
9 for replacement ice arena systems is -- is in the best
10 financial interest for the owners and for the state of
11 California, and recommend it accordingly.
12 So thank you for the opportunity to comment.
13 BOARD CLERK SAKAZAKI: Thank you.
14 Our next speaker is Esther Rosenberg. I have
15 activated your microphone. You can unmute yourself and
16 begin.
17 MS. ROSENBERG: Yes. Hi, Ryan. Thank you.
18 Chair Nichols, members of the Board, my name is
19 Esther Rosenberg. And I'm pleased to provide comments on
20 behalf of Chemours. Chemours is a world class refrigerant
21 supplier and technology leader in sustainable, high
22 performance, low global warming solutions.
23 As an official partner of the NHL, Chemours
24 supports and engages with the owners and operators of ice
25 rinks across the country and continent. Based on our

1 experience and feedback from critical stakeholders,
2 Chemours opposes the less than 150-GWP rink -- ice rink
3 proposal. We urge the Board to return to their original
4 proposal of GWP less than 750 for both newly installed and
5 existing ice rinks for numerous reasons, as outlined in
6 our public comment.
7 But I would like to particularly highlight the
8 following reasons here today. First, there are U.S.
9 patents limiting the options for less than 150 in ice
10 rinks. As of June 23rd, 2020, a U.S. patent was granted
11 on the use of CO2 in ice playing surfaces. There are five
12 other patent applications pending in this space.
13 It is striking that within a couple of months the
14 granting of such patents this summer, CARB dramatically
15 changed their proposal from less than 750 to the less than
16 150-GWP limit in new ice rinks.
17 There was previous and still broad alignment on
18 maintaining less than 750 for new ice rink installations
19 from the broad cross section of the industry.
20 Given that CARB is a standard setting
21 organization and given the patent landscape that has taken
22 shape in the U.S. specifically for ice rinks, the less
23 than 150-GWP limit for new ice rinks will not serve CARB's
24 purpose of advancing and driving technological innovation,
25 but rather will dramatically limit technology and limit

1 competition, ultimately leaving rink owners and operators
2 with limited options and higher costs.
3 The bottom line is that setting a less than 750
4 limit for new an existing ice rinks is, in itself,
5 technology advancing, will allow for multiple pathways for
6 large and small community ice rinks. Community ice rinks
7 have limited budgets and resources. They do not have the
8 option to go for variances. They don't have regulatory
9 resources. They're not like the OEMs or supermarket
10 chains. They don't have the necessary regulatory
11 personnel or financial to manage an extensive regulatory
12 process for requiring getting variances or navigating that
13 process.
14 BOARD CLERK SAKAZAKI: Thank you.
15 So our next speaker is Damian Breen. Damian, I
16 have activated your microphone. You can unmute yourself
17 and begin.
18 MR. BREEN: Good morning. Damian Breen here on
19 behalf of the Bay Area Air Quality Management District.
20 Good morning, Chair Nichols and members of the Board.
21 The Air District wishes today to speak in support
22 of the staff's recommendation. We'd like to commend the
23 Air Resources Board on their work with industry and
24 stakeholders. While we, in the Bay Area, always advocate
25 for more aggressive limits where possible, we find that

1 staff's proposal today is aggressive, well reasoned and
2 feasible. And that's why the Air District would like to
3 lend its support to ARB's efforts.
4 On behalf of the Air District as well, I would
5 like to commend Chair Nichols and the outgoing Board
6 members on your excellent service to the people of the
7 state of California. And we would especially like to
8 thank Supervisor John Gioia for his commitment and
9 leadership on clean air in the Bay Area.
10 Thank you.
11 BOARD CLERK SAKAZAKI: Thank you.
12 Our next speaker is Wynand Groenewald. I have
13 activated your microphone. You can unmute yourself and
14 begin.
15 MR. GROENEWALD: Thank you. I'm Wynand
16 Groenewald. I'm owner of an independent consulting
17 company specializing on CO2 and other natural
18 refrigerants. Currently working on natural solutions in
19 the American, African, and Australian market. So firstly,
20 I would like to share my support of the proposal and would
21 also suggest to include existing ice rinks.
22 Personally, I feel there is a natural solution
23 for every refrigeration application that has been tried,
24 and tested, and shown to be energy efficient. By
25 implementing this proposal, I feel it will increase

innovation substantially, which will lead to more suggestions and more options for the end user. By increasing this innovation, also there would be a decrease in pricing over some time due to supply and command.

Lastly, dialing in from South Africa, I would like to make it understood that what CARB is implementing and proposing to implement would not only make a difference in the American market, but will really lay the stage and set a foundation for the uptake of naturals on a global basis.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our final speaker for this item is Jason Meggs. I have activated your microphone. You can unmute yourself and begin.

MX. MEGGS: Thank you. Good afternoon. My name is Jason Meggs. I am speaking as a CARB veteran of the issues before you now, both in support of this proposal and to voice a relevant general measure to improve CARB operations going forward. I worked with this F-gas group on HFC mitigation and more for the better part of a decade. I served as a team leader on multiple, multi-year initiatives such as creating the FRIP incentive program, implementing broad aspects of the refrigerant management program, helping develop the Short-Lived Climate Pollutant

1 Strategy and leading the legislative proposals pursuant to
2 that strategy, auditing our F-gas inventory, managing
3 stakeholder meetings far and wide, conducting our
4 disadvantaged communities analysis and outreach, leading
5 our analysis of energy efficiency and indirect emissions
6 of emerging technologies with extensive engagement with
7 the energy sector and industry, scoping, designing and
8 managing, engineering and other research contracts for
9 CARB and quite a bit more.
10 My first point, my background allows me to state
11 unequivocally, based on all evidence and my expertise,
12 that CARB had the opportunity over the 14 years since the
13 passing of AB 32 to be a world leader in F-gas emission
14 reduction generally and HFC mitigation in particular.
15 While we have truly missed the boat in too many cases and
16 this proposal does not go far enough and has many
17 weaknesses, it is important to move forward with this
18 proposal now.
19 My second point, the reason for these failings is
20 in large part the lack of opportunity for staff within the
21 agency to voice concerns and address weaknesses in CARB
22 strategies. I will detail a broad initiative to help
23 prevent these agency weaknesses, which limited our
24 progress on this and many other critical climate needs
25 during open comment later today, a new initiative

1 tentatively named the CARB Staff Protection Act, and if
2 you'd like, the Meggs initiative.
3 The initiative proposes:
4 One, provide a guaranteed mediation opportunity
5 for staff seeking conflict resolution;
6 Two, provide a trusted third-party reporting and
7 mediation opportunity to resolve internal agency
8 accountability issues;
9 And thirdly, adopt a requirement that new hires
10 and existing staff demonstrate ongoing understanding of
11 and a track record of support for our Agency's mission.
12 I honestly and truly believe accepting this
13 initiative would greatly optimize and enhance the goals of
14 our agency and the people of California.
15 Thank you for your time and consideration. I
16 look forward to working with you on this realizing this
17 important initiative in the future.
18 BOARD CLERK SAKAZAKI: Thank you.
19 So, Madam Chair, that concludes our list of
20 speakers for this item.
21 CHAIR NICHOLS: All right. Excuse me. Thanks
22 for all who have appeared before us and have taken the
23 time to prepare their testimony. There are a number of
24 issues that were raised. This is a regulation that
25 contains a number of parts.

1 Before I close the record and proceed to Board
2 discussion, I would like to ask the staff if there are any
3 specific points that were raised that you would like to
4 respond to on the record?
5 EXECUTIVE OFFICER COREY: Let's go to Elizabeth
6 Scheehle. Elizabeth, can you cover that?
7 RESEARCH DIVISION CHIEF SCHEEHLE: Yeah. Thanks,
8 Mr. Corey, and Chair Nichols, and members of the Board.
9 You know, as we've discussed, this regulation has been in
10 development for years and we are reaching a really key
11 milestone here, having worked with many stakeholders, as
12 you've heard throughout the testimony, to be able to
13 present a regulation that will not only put air
14 conditioning refrigeration on a lower greenhouse gas
15 intensive track.
16 In addition, we have discovered the opportunity
17 to include the Pilot R4 Program and are very excited to
18 move this forward and start on a new regulation
19 immediately after this one.
20 We did want to address the ice rink issue, since
21 you have heard a lot from both sides on this issue. There
22 are those who would like a 150-GWP limit for both existing
23 and new facilities. And those who would like the 750 for
24 existing and new facilities. We believe the 150 is
25 feasible. There are multiple alternatives that are

available today and we are aware that there are some on the horizon as well. We have limited it to new facilities. And the effective date for this is 2024, so there's also several years to develop some of those alternatives that are on the horizon.

So we believe it is feasible to today. If there is any situation where it may not be for permitting or other issues, there is a variance process that people can go through as well. We considered existing facilities, while we were developing this part of the regulation. There are disruptions that could potentially happen with existing facilities and it's a little bit more challenging.

So at this point, we wanted to the signal that low GWP is the future and commit to working on this for new ice rinks.

Thank you.

CHAIR NICHOLS: Okay. Other than that, I think we heard from generally people who were supportive, but a number who think that we've gone too far. I guess that's fairly typical. I'm always worried when I hear testimony that says that we have left emissions on the table, so to speak, or in the air that we might have been able to have captured if we had gone forward, but I'm also very mindful of the fact that this Board's success, where we have been

1 successful over the years, has come from having crafted
2 regulations that were practical, technology forcing, but
3 not impossible to achieve. And when we do miss the mark,
4 if we need to make a correction, we have generally been
5 able to do that.
6 Clearly, today we're at the point where there's
7 going to be further amendments and I suspect that what we
8 do today won't last forever.
9 But I do have one perhaps a somewhat odd question
10 in that regard. The ice rink testimony caught my
11 attention, because although I hardly am a champion skater,
12 I am actually very fond of ice skating having grown up in
13 Upstate New York. And I'm reminded of the fact that
14 friends of mine have been complaining about ice rinks not
15 being available because of the COVID restrictions, which
16 just reminds me once again of the fact that we're living
17 in a time of great economic upheaval in many sectors of
18 which would imagine the recreation industry is one.
19 But I just would like to ask either Ms. Scheehle
20 or Mr. Corey if you're confident that if and when the
21 economy does come back, as we expect it will, and
22 hopefully sooner rather than later, this provision would
23 be able to be adjusted, if necessary, in terms of time
24 frame, in order to make sure that we do get compliance.
25 I'm always concerned that we bring along those who are

1 going to continue in existence and hopefully will be
2 investing in upgrading their facilities if funds are made
3 available as part of the recovery package.
4 EXECUTIVE OFFICER COREY: Elizabeth, can you just
5 go back to that question and the flexibility in the reg?
6 RESEARCH DIVISION CHIEF SCHEEHLE: Yeah. So we
7 are confident that by 2024, not only will there be
8 multiple alternatives available, but there will be a
9 process for which those rinks that may not, for whatever
10 local reason, use any of those refrigerants. There is a
11 process in place through the variance process.
12 The existing facilities right now use -- do use a
13 combination of CO2 and ammonia or use those in different
14 areas. They're both used. So that is being done
15 currently as well. And we do not think those will shift
16 over under that regulation -- under this regulation.
17 CHAIR NICHOLS: Okay. Thank you. There is one
18 more hand in the air, although we had closed off public
19 testimony. I think it's gone down.
20 Okay. In that case, I will close the record at
21 this point. And I'll just state as always that if it is
22 determined that initial conforming modifications are
23 appropriate, the record will be reopened and a 15-day
24 notice of public availability will be issued.
25 If the record is reopened for a 15-day comment

period, which I expect it will, the public may submit written comments on the proposed changes and they will be considered and responded to in the Final Statement of Reasons for that regulation.

Written or oral comments, however, that are received after this date and before the 15-day notice is issued will not be accepted as part of the official record on this agenda item. The Executive Officer may present the regulation to the Board for further consideration, if warranted. But if not, the Executive Officer shall take final action to adopt this regulation after addressing all the appropriate conforming modifications.

So with that comment, I'm going to ask Board members if any of them have any questions or comments that they would like to raise at this time. And I will start with Supervisor Fletcher.

BOARD MEMBER FLETCHER: Thank you. Thank you, Mary and thank you everyone here. I think the HFCs are a huge challenge and I am very glad to see us moving forward on addressing the high-GWP pollutants.

I've got a question for Elizabeth. It's on ice rinks and I appreciate the clarification. I want to make sure I understand it correctly and then I have one question. I mean, essentially an existing ice rink is not impacted by this. And if you built a new facility between

now and 2023, you also would not be impacted by this. It would only be new facilities built starting in 2024, is that -- is that correct?

RESEARCH DIVISION CHIEF SCHEEHLE: That is correct.

BOARD MEMBER FLETCHER: And then we think that the advances in technology along with the variance in the years is what would have us avoid a situation like Quebec faced where they ended up having to kind of rollback something they've done, is that the general sense?

RESEARCH DIVISION CHIEF SCHEEHLE: Yeah. We believe that the two alternatives can work in most situations, and that there are other alternatives as well on the horizon that could help avoid any situation like that.

BOARD MEMBER FLETCHER: Can you walk me through the concern around the kind of single patent, Single solution. Is that -- I've just heard that is an issue that there's essentially one entity that has a solution for ice rinks and given they're -- they're going to hold the patent for, you know, beyond 2024, that that could create some challenges with that as it relates to ice rinks?

RESEARCH DIVISION CHIEF SCHEEHLE: So there are two alternatives -- two main Alternatives at this point in

time, ammonia and CO2. So CO2 is not the only alternative out there. There is a patent that was granted on a particular CO2 system and it sounds like there are some in -- in the queue as well, but there are two alternatives. And if neither of those work for any situation, there is this variance process that can actually be used by -- it could be used by an ice rink or it could be used by an OEM through that process as well.

BOARD MEMBER FLETCHER: Okay. All right. Thank you.

CHAIR NICHOLS: Okay. Next up is Vice Chair Berg?

VICE CHAIR BERG: Thank you, Chair Nichols. I just would like to follow up on Supervisor Fletcher's comments. I just want to make sure that, you know, people -- it takes quite a bit of time to do the planning, getting permits, having projects on -- going through the process. So 2024 is actually right around the corner. And so will we have a process that if somebody who is in design, and has everything ready to go, but starts building in 2024, will we then have them go back and redesign? How are we going to take care of that timing?

RESEARCH DIVISION CHIEF SCHEEHLE: I am not sure if there is -- the lead time is that long.

VICE CHAIR BERG: Okay.

RESEARCH DIVISION CHIEF SCHEEHLE: If it is, like I said, there's a variance process that could be used, if you've proved that you've gone down a route to try other -- other options, then applying through that process would be viable.

VICE CHAIR BERG: Okay. So what I'm hearing, Elizabeth is we are going to be sensitive to the fact that this could be challenging. But I was also very encouraged with the number of people who testified that they were very much for the new standards and thought there were absolutely resolutions now and on the horizon. So it was both a little bit concerning, but lots of great reason to be optimistic.

My final question is about the dehumidifiers and the room air conditioners. Could you just help us think that through? And specifically around that UL is the safety organization that approves what can be used. And will it be, in fact, ready for 2023 versus 2025?

RESEARCH DIVISION CHIEF SCHEEHLE: And, Kathryn, would you like to take that one or would you like me to?

RD AIR POLLUTION SPECIALIST KYNETT: I can go ahead. All right. Thank you. Yeah, I'm happy to answer that question. So we are aware that the safety standards actually do already allow A2L refrigerants in dehumidifiers. And so does the California Building Code.

1 So there are alternative refrigerants that dehumidifiers
2 can use similar to the room ACs, but they do have to apply
3 for approval through the U.S. EPA. So in order to apply
4 for approval what they need to do is actually file an
5 application with the U.S. EPA, which our understanding is
6 they have yet to do that, but there's still time ahead of
7 that 2023 compliance date.
8 So I'm mentioned the room ACs, those equipment
9 categories are very similar to dehumidifiers and they have
10 had A2L refrigerants approved for use for a number of
11 years, because they filed an application with the U.S.
12 EPA. And many of the same standards that cover room ACs
13 also cover dehumidifiers. So, you know, in our
14 addition -- our understanding is the EPA has approved R32
15 for room ACs and they just proposed a whole suite of more
16 refrigerants for room ACs. So we think that there's
17 plenty of time. So that's kind of the bottom line here is
18 we think there is time for dehumidifiers. And there are
19 approved -- there are alternative refrigerants that would
20 be suitable for that product category.
21 VICE CHAIR BERG: Well, great. And as my closing
22 comment, I really want to thank staff. I heard from many,
23 many industry members and stakeholders that you guys
24 worked really, really hard with them. And I just really
25 want to commend you. There's a lot of weeds in this

regulation and -- and you did a great job and thank you very much.

RESEARCH DIVISION CHIEF SCHEEHLE: Thank you.

CHAIR NICHOLS: Okay. Let's move on then to our next question from -- or comment from Mr. De La Torre.

BOARD MEMBER DE LA TORRE: Thank you, Chair.

I want to start by emphasizing why we're doing this in the first place, because, you know, there was a lot of positive feedback here today and there was some negative feedback, but I think it's always important to remind people. There were three sectors of greenhouse gases that did not contribute to our achieving our targets by 2020. Those were transportation, natural and working lands, and short-lived climate pollutants.

So that's why we're doing this. We need to get reductions from short-lived climate pollutants and we need them now. We can't wait until 2026, '27, '28. So that's why we're here. That's why we're doing this. That's why I'm generally supportive.

On the HVAC piece, I'm very supportive of the staff's direction on F-gas -- the F-gas fund that we have. There are, I think -- there needs to be more of a focus, like we're doing in the transportation sector and others, where we're incentivizing the swapping out of these old -- not dirt -- dirty, but, you know, they have these

emissions, less efficient facilities, that are emitting these gases. And so I -- I think it's very important that we put more money into the F-gas fund when we're doing funding, and that we identify other opportunities to strengthen the RECLAIM Program in the short-term, like as soon as possible.

I think we also need to do some training with regard to that, where we heard some folks talking about, you know, how much more efficient the transition can happen, if the people are properly trained. If they're not, there's leakage, obviously it's bad. So I very much want to weigh in on behalf of getting -- setting some kind of training standards for this work.

As I told many of the stakeholders on this, if we felt we were going to get enough reductions in the short term, meaning in the next few years, and we did go ahead and account for the 2025 Building Code cycle, then I and we, CARB, absolutely should weigh in with the -- our sister agencies on the Building Code adoptions. We need to make sure (inaudible) cycle. And, you know, ifs, ands or buts. So whatever we need to do to weigh in with that we need to fulfill in order to make sure we done skip another cycle on the Building Codes. So that's on HVAC.

On the ice rinks, I -- thank you for the answer on the -- on the CO2 systems and the patents. That was

1 something that concerned me. There was a related concern,
2 which is that some jurisdictions have banned ammonia
3 systems in their jurisdiction. Can you address that,
4 because obviously if we're saying they have options, and
5 in some places, if they've banned ammonia systems, they
6 don't have an option. They have to go in this other
7 direction. So please respond to that issue.
8 Thank you.
9 RESEARCH DIVISION CHIEF SCHEEHLE: Yeah. So
10 there are a couple of options, if ammonia is banned in the
11 particular rage, then CO2 is an alternative and there are
12 some alternatives that are on the horizon as well. But it
13 is really important to note that there is the variance
14 process that either the rink itself, or an OEM, or others
15 could apply for. And in that situation, showing that it
16 just could not be used, the impossibility clause in there
17 would be the appropriate clause to use.
18 BOARD MEMBER DE LA TORRE: Thank you.
19 CHAIR NICHOLS: Elizabeth, do you want to explain
20 the rationale for the ammonia ban and whether the staff
21 has anything to say about whether there might be some
22 changes in that as well?
23 RESEARCH DIVISION CHIEF SCHEEHLE: And I will ask
24 if staff have additional detail. Ammonia sometimes local
25 areas may ban it as not banned overall as a state. There

are lots of safety regulations that are in place, but I'll also ask Richie to respond.

RD AIR POLLUTION SPECIALIST KAUR: Thank you, Elizabeth. Yes, so Chair Nichols, ammonia is widely used as an industrial refrigerant in California today. The permitting of ammonia is a local issue and sometimes a local jurisdiction may not allow the use of it.

We understand that these local permitting issues tend to be few and far between, but they have come up, which is why we placed that 750-GWP limit for existing facilities that already located in the densely populated areas, and they don't have to move to ammonia if they are doing a replacement. They can use some of those HFO -- HFO blends, like R513A.

CHAIR NICHOLS: I think I'm asking a simpler question, which is what is the rationale for banning ammonia, if it is banned, and if we don't think it's justifiable, do we ever indicate that?

RD AIR POLLUTION SPECIALIST KAUR: The rationale is that it is toxic and it is -- it does have a lower flammability classification as well. So that's really why the local fire marshals may not permit it in certain facilities, especially when they're located in the densely populated areas.

CHAIR NICHOLS: I see. So there could be an

1 issue in an urbanized area about using it around other
2 materials.
3 RD AIR POLLUTION SPECIALIST KAUR: Right.
4 CHAIR NICHOLS: Okay. Thank you.
5 RD AIR POLLUTION SPECIALIST KAUR: You're
6 welcome.
7 CHAIR NICHOLS: All right. I see Dr. Sherriffs
8 has his hand up.
9 BOARD MEMBER SHERRIFFS: Thank you. All the ice
10 rink discussion reminded me that as a young physician, I
11 provided medical care for the local semi-professional
12 hockey team and improved my suturing skills considerably
13 during that time. So I was relieved to see that -- I
14 don't know what the industry representatives look like
15 after this discussion, but the staff looks none the worse
16 for the wear, so that was a great relief.
17 (Laughter.)
18 BOARD MEMBER SHERRIFFS: Good work, everybody. I
19 do have one small question. On the recycling, does it
20 matter to us where the material comes from that gets
21 reused, that 10 percent? Is there an issue whether it
22 comes from a local source, or a national source, or even
23 an international source?
24 RESEARCH DIVISION CHIEF SCHEEHLE: We'll be
25 developing in collaboration with all the stakeholders, the

1 details of it through the 15-day change but are open to
2 the national use.
3 BOARD MEMBER SHERRIFFS: What do we think at this
4 point? I mean, for our ourselves in terms of our climate
5 goals, in terms of air quality issues, is there an impact
6 as to where that comes from?
7 RESEARCH DIVISION CHIEF SCHEEHLE: Well, we
8 definitely want to kick-start this program in the most
9 effective way possible, and we'll be looking at that in
10 particular of where is the most appropriate place to get
11 it. The national supply really is more -- there's more
12 supply available at a national level than in California.
13 Obviously, this is a global issue and that will be taken
14 into account.
15 EXECUTIVE OFFICER COREY: Just one addition on
16 this, because our eye for the follow-on regulation, the R4
17 reclaim recycle program we're talking about that we'll
18 initiate next year, the whole eye on that is a national
19 program. Getting the national structure in place, even
20 though the percent is not -- is small, it's the -- it's
21 the -- it's getting the construction in place. So the
22 fact that we will have partners at EPA and across the
23 country is going to be pretty important, but we are really
24 thinking we get the real benefit through a national focus
25 program. That's really what we're focusing on

accomplishing in this next round of a reg.

CHAIR NICHOLS: Okay. That concludes the list of Board members who had their hands raised on this item. I think that means that we're at the point now where we should entertain a resolution.

Do I have a motion to approve the proposal that's before us?

BOARD MEMBER MITCHELL: I move that we adopt the resolution.

CHAIR NICHOLS: Thank you. And a second?

BOARD MEMBER BALMES: I'll second.

CHAIR NICHOLS: Okay. Great. In that case, the clerk will call the roll.

VICE CHAIR BERG: Madam Chair, we do need people to identify themselves, so Judy Mitchell moved --

BOARD MEMBER BALMES: And John Balmes.

VICE CHAIR BERG: -- and John Balmes seconded. Sorry.

CHAIR NICHOLS: I knew who they were.

(Laughter.)

CHAIR NICHOLS: I understand. The record needs that okay. Thank you.

(Laughter.)

BOARD CLERK SAKAZAKI: Thank you, Madam Chair.

Dr. Balmes?

1 BOARD MEMBER BALMES: Yes.
2 BOARD CLERK SAKAZAKI: Mr. De La Torre?
3 BOARD MEMBER DE LA TORRE: Aye.
4 BOARD CLERK SAKAZAKI: Mr. Eisenhut?
5 BOARD MEMBER EISENHUT: Aye.
6 BOARD CLERK SAKAZAKI: Supervisor Fletcher?
7 BOARD MEMBER FLETCHER: Fletcher, aye.
8 BOARD CLERK SAKAZAKI: Senator Florez?
9 Senator Florez?
10 BOARD MEMBER FLOREZ: (Thumbs up.)
11 BOARD CLERK SAKAZAKI: Supervisor Gioia?
12 BOARD MEMBER GIOIA: Aye.
13 CHIEF COUNSEL PETER: Ryan, this is --
14 BOARD MEMBER GIOIA: And Senator Florez gave a
15 thumbs up.
16 CHIEF COUNSEL PETER: Yes, he has -- he tried to
17 vote yes on the last one and he kept trying his mic off
18 and on. And so there's some technical issue that maybe we
19 can solve during lunch, but he did indicate aye on the
20 first item and then tried to right then and I could see
21 his thing going off and on. Sorry, Senator Florez.
22 BOARD CLERK SAKAZAKI: Okay. Thank you, Ms.
23 Peter.
24 Ms. Mitchell?
25 BOARD MEMBER MITCHELL: Aye.

BOARD CLERK SAKAZAKI: Mrs. Riordan?
BOARD MEMBER RIORDAN: Aye.
BOARD CLERK SAKAZAKI: Supervisor Serna?
BOARD MEMBER SERNA: Aye.
BOARD CLERK SAKAZAKI: Dr. Sherriffs?
BOARD MEMBER SHERRIFFS: Sheriffs, yes.
BOARD CLERK SAKAZAKI: Professor Sperling?
BOARD MEMBER SPERLING: Aye.
BOARD CLERK SAKAZAKI: Ms. Takvorian?
BOARD MEMBER TAKVORIAN: Aye.
BOARD CLERK SAKAZAKI: Vice Chair Berg?
VICE CHAIR BERG: Aye.
BOARD CLERK SAKAZAKI: Chair Nichols?
CHAIR NICHOLS: Aye.
BOARD CLERK SAKAZAKI: Madam Chair, the motion passes.
CHAIR NICHOLS: Thank you very much, all. That's a really important step forward. Not the last we will hear about refrigerants I suspect, but certainly an important step in the right direction.
So I think at this point, we are actually ready for a lunch break. And so for the sake of all of us, staff, Board, members of the public and our court reporter, last but not least, we will break until 1:00 o'clock. It's easier I think if people keep their --

1 those of us who are the panelists at least, keep ourselves
2 tuned into Zoom. A screen will go up and we'll just come
3 back and resume the meeting at 1:00.
4 BOARD CLERK SAKAZAKI: Thank you, Madam Chair. I
5 just want to give a friendly reminder to everyone to
6 please mute themselves and turn off their videos. And to
7 all attendees, it's probably easier if you stay on as
8 well. So you can have the computer running in the
9 background as go off for your lunch. So thank you all
10 very much.
11 (Off record: 12:30 p.m.)
12 (Thereupon a lunch break was taken.)
13
14
15
16
17
18
19
20
21
22
23
24
25

AFTERNOON SESSION

(On record: 1:06 p.m.)

CHAIR NICHOLS: Okay. Welcome back, everybody. The next item on the agenda is Item 20-13-6. This is an informational update on the 2020 Mobile Source Strategy. And if you wish to comment on this item, we will be taking comments after we finish the Board presentation -- the staff presentation. So if you would please click on the raise hand button or star nine now, we'll call on you when we get to the public comment portion of the item.

There will be no action on this item, although there will certainly be Board discussion. But for that reason, I think in the interests of time, we could ask for -- ooh. We could -- sorry, my video is not on apologies. I guess you could hear me but not see me during that little opening.

Okay. Well, I'll just move on then, but with the video on. Thanks for -- thanks for the note.

So I'm going to ask the Board Clerk to limit the timing when we get to it two-minute comments on this -- on this item.

Since CARB's creation over 50 years ago, we've been leading the way in mobile source controls and other programs as well to reduce harmful emissions from vehicles, thereby providing healthier air for millions of

1 Californians, from catalytic converters on cars, to
2 removing lead from fuels, requiring particulate matter
3 filters, and cleaner burning engines in heavy-duty
4 vehicles, and in our evolving zero-emission vehicle
5 programs as well.
6 This year, I participated in a press event, the
7 last actual public event that I was able to do, where
8 Governor Newsom signed an Executive Order that created a
9 first-in-the-nation goal that by 2035 all new cars and
10 passenger trucks sold in California will be zero-emission
11 vehicles. And similar goals were also included for
12 greening California's heavy-duty vehicles and off-road
13 equipment.
14 The 2020 Mobile Source Strategy is one important
15 step towards those goals that are in the Executive Order.
16 Ordinarily, I would wait until after the staff's
17 presentation and the public comment period to add any of
18 my personal thoughts on this item, but -- sorry, I seem to
19 have lost the video again.
20 Is there a reason why the video is off now?
21 No, it's back. Okay. Well, I seem to be
22 experiencing some technical difficulties as well.
23 As I was saying, I wanted to share a few thoughts
24 actually before the staff presentation to help frame this
25 item and hopefully to encourage thinking on the part of

all who are listening to or otherwise planning to participate in this item.

As this -- as this item also relates to some of the changes that are going to be forthcoming, as we move into hopefully a renewed era of collaboration with the federal administration, I thought it would be useful to perhaps give you some thoughts about what California's strategy should be.

First of all, I think it's clear that our mid- as well as long-term goal is zero emissions. And that can't just keep on being moved forward into the future. The Board has been very clear that all State agencies, not just we are trying to get towards zero. It's fundamental to achieving all of our air quality, and community protection, and climate goals.

And in order to do that, burning of any kind of fossil fuels is going to become obsolete. But we also need a clear-term -- a clear near-term path to secure emissions reductions that meet federal air quality standards this decade. And I have been frustrated that our progress with achieving that 2023 deadline that's in the Clean Air Act for an 80 part per billion ozone standard in the South Coast continues to be unattainable as we see in our current plans.

So to put a fine point on it, we're not on a path

1 to attain by 2023. And I think it's time that we
2 recognize that using every measure that we have been able
3 to adopt, everything that we think we can do, everything
4 short of a dramatic recession, which we certainly do not
5 wish to have or prolong, we don't make the 2023 deadline.
6 That doesn't mean we don't make a deadline, or that we
7 didn't make it, or that we don't strive to do everything
8 in our power, but it does mean that we shouldn't be taking
9 actions that don't make sense or that divert us from the
10 path that we have set to get to real zero.
11 I feel that this Board can and should be proud of
12 the actions that we've taken with regard to the
13 transportation sector. We have adopted the most
14 comprehensive and forward-leaning requirements in the
15 world. And the air districts have worked with us on these
16 measures. They've worked hard. We've both tried to use
17 what authorities we could also to encourage others to do
18 the same.
19 But a key reason that we're not on track to meet
20 the 2023 deadline is the lack of federal action, action
21 for which we have been asking for years. We've been
22 asking, petitioning, writing, commenting that we need
23 cleaner locomotives, we need the trucks to be cleaner, all
24 the heavy-duty equipment, as well as ocean-going vessels,
25 and, yes, even aviation all need to be cleaner than they

1 are today.
2 But as the continued lack of action piles up, it
3 also means that we get further behind and have an even
4 harder time catching up and we continue also to expose the
5 most vulnerable communities to even more toxic diesel
6 pollution.
7 The Clean Air Act was designed for states and the
8 federal government to share responsibility for achieving
9 healthy air. But unfortunately, for the last four years,
10 there has been no partnership, but instead a series of
11 legal battles to protect our authority, as well as to
12 stave off some of the most ill-advised and illegal
13 regulatory rollbacks.
14 I am proud of the partnership that we've had with
15 the Governor, and the Attorney General, and many other
16 states to prevent that and we've had some success, but not
17 enough.
18 I also want to say that I don't blame EPA staff
19 for this lack of action, because I've worked with these
20 people in the past, I know many of them personally, I know
21 their dedication, and I know their capabilities, and they
22 know what needs to be done.
23 And at the staff level, we have had a respectful
24 and collaborative relationship with them for many years,
25 but we need to now reactivate that partnership and elevate

1 the level, so that we can move faster farther.
2 It's simply important to recognize that a SIP
3 without the federal actions in it can't be a meaningful
4 SIP. It's a plan that won't be able to succeed without
5 the federal contribution.
6 So I think that was not the intent of the framers
7 of the Clean Air Act. I'm quite sure that it was not.
8 They expected that there would be corresponding actions
9 taking place at the federal level. And I'm very excited
10 that our President-elect has been talking about exactly
11 those kinds of issues in the context of climate action,
12 but also in terms of what's needed for -- for better
13 health and for environmental justice as well.
14 So it seems to me that we're going to be hearing
15 a lot about the SIP for the South Coast Air Basin and
16 what's needed for that. And there has to be a SIP that
17 actually can articulate the ozone targets, the various
18 measurements that we have.
19 But I think the good news is that there is a new
20 SIP already being developed. It's due in 2022 at just
21 about the same time as our latest most -- what will be our
22 most up-to-date Climate Action Plan, Climate Scoping Plan.
23 And the work on achieving that 70 parts per billion ozone
24 standard is already underway. So in keeping with that
25 long-standing approach by the South Coast, this SIP will

1 cover not only the 70 parts per billion standard, but also
2 the existing 75 parts per billion and 80 parts per billion
3 standards as well. It will be one document that covers
4 all of these things.
5 But it's going to need federal commitments and
6 actions, as well as additional State and local actions
7 that are focused on transitioning out of combustion of
8 petroleum fuels. So from EPA, we need them to move
9 forward quickly on a new heavy-duty standard that is
10 equivalent to what California set earlier this year. We
11 need them to support our efforts on zero emission vehicle
12 heavy-duty standards and develop a national program. We
13 need to set cleaner Tier 5 locomotive standards and
14 support zero-emission efforts. We need to be working and
15 leading internationally for tighter marine and aviation
16 standards. And, of course, we also need to support
17 light-duty zero-emission and zero-emission infrastructure
18 efforts as part of phasing out our overall dependency on
19 petroleum.
20 So I know that the actions that the District
21 commits to as a part of this effort will be as aggressive
22 and precedent-setting as they have been in the past. But
23 I also need to note that they're going to also need to
24 take some action on the Indirect Source Rules that were
25 included in the last SIP. These are difficult to approve.

They're difficult to get consensus around exactly how they should work, because they clearly impinge on cherished local prerogatives when it comes to permitting. But I think we have seen, and we have a good example -- we have some good examples to look at, that these are one of the most effective tools for getting near-term reductions. So we ask now that the district start the process and get this -- get this effort underway.

For CARB's part, we, and that means you going forward, need to commit to actions that get us to zero as quickly as possible. That should be the focus of our actions today, getting to zero as quickly as possible.

I also believe that we need to direct the staff to take more time to add to the Mobile Source Strategy, some other concepts, for achieving near-term NOx reductions.

I think that they should be coming back to the Board early next year. I think we'll hear some testimony today and I'm going to ask the staff to also give a little tip of their hand of what they're thinking about, in terms of some earlier actions to get us to less NOx from the on-road vehicles as well.

But a lot of the noise that we hear around this issue comes from people who are looking for more incentives, meaning more public dollars for on-road

1 combustion technologies using the need to reach the 2023
2 deadline as their rationale for why that's the right
3 approach, that we should be taking.
4 And so we -- we have heard from various corridors
5 this almost a drum beat really of suggestion that by
6 focusing on zero, we're somehow paying less attention or
7 less concern about the health of people who are exposed to
8 excess NOx today.
9 I just want to say for myself that while we have
10 included over the years very substantial amounts of money
11 for cleaner on-road combustion to replace diesels with
12 cleaner diesels, and cleaner diesels, and with natural
13 gas, this is not about favoring one technology over
14 another. It's about trying to focus on where we're headed
15 and not to get distracted by opportunities that may be out
16 there to spend more public dollars on things that are
17 inconsistent with the Governor's Executive Order,
18 consistent with what science tells us we need. And so for
19 the near term, I'm going to be looking to this agency to
20 go beyond just a continuation of business as usual, in
21 terms of spreading incentive money around including on
22 combustion technologies.
23 So I've put my position out there. I want to
24 finish by saying that California is eager to continue to
25 work with the districts. I know that's true for the

staff. I know it's true for the Board as a whole. And I'm very confident that it's also true for the incoming Chair and Board members as well.

I'm looking forward to having the -- that conversation expand and even get more robust, as well as to improve and get back to the dialogue with our friends and partners at U.S. EPA about how to achieve a really robust plan, where every -- every level of government is playing its part and doing its best to get us all towards the common goal of healthy air. So with that, I'm going to now turn this over to the staff who will introduce the item. Mr. Corey.

EXECUTIVE OFFICER COREY: Thanks, Chair.

The Mobile Source Strategy that we developed in 2016 identified pathways by which the state could reduce mobile source emissions to meet air quality standards, achieve greenhouse gas emission reduction targets, reduce petroleum consumption, and significantly decrease community health risk. And since the 2016 strategy was released four years ago, we've made tremendous progress in develop and adapting -- or rather adopting many of the regulations and programs envisioned in that plan, including the Board's adoption of the Advanced Clean Trucks, and Heavy-Duty Omnibus Regulations this past summer.

1 And even so, as you noted, we must do much more
2 to accelerate the transition of California's on- and
3 off-road fleets to the cleanest technologies possible, if
4 we're to meet those air quality and climate goals you
5 called out. The draft 2020 Mobile Source Strategy
6 continues the multi-pollutant scenario planning approach
7 pioneered by the 2016 strategy consistent with the
8 Governor -- with Governor Newsom's recent Executive Order
9 and California Senate Bill 44.
10 The 2020 Mobile Source Strategy identifies a
11 suite of programmatic concepts that will enable the state
12 to achieve the technology trajectories that will maximize
13 criteria pollutant and greenhouse gas reductions by going
14 to zero-emission everywhere feasible and to cleaner
15 combustion with renewable fuels only where
16 non-zero-emission technologies are available.
17 I'll now ask Ariel Fideldy of the Air Quality
18 Planning and Science Division to give the staff
19 presentation.
20 Ariel.
21 (Thereupon a slide presentation.)
22 AQPSD AIR POLLUTION SPECIALIST FIDELDY: Thank
23 you, Mr. Corey. Hello, Chair Nichols and members of the
24 Board. I last briefed you in April and I'm glad to be
25 back in front of you today to provide an update on the

2020 Mobile Source Strategy.

The Strategy outlines the technology mixes and timeline for transforming California's transportation and off-road equipment sectors. This effort serves as a critical policy roadmap for achieving our many air quality, climate and community risk reduction targets.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The 2020 Mobile Source Strategy builds upon the 2016 Mobile Sources Strategy and is a conceptual scenario-based approach for developing future State Implementation Plans, or SIPs, and will be incorporated into the scoping plan and other efforts.

Our Draft 2020 Strategy consists of scenarios and trajectories for the various mobile sectors that illustrate the technology mixes needed for the state to meet its many air quality and climate goals. The Strategy also aligns with Governor Newsom's recent Executive Order, which defines a timeline for transitioning to zero emission vehicles, or ZEVs.

We want to note up front that the scenarios and concepts included in the Draft 2020 Strategy are bold, but are needed if we want to attain our mid-century SIP and climate goals. The scenarios are aggressive because the State's goals are aggressive and it's important at the

1 start of planning to not undershoot the targets.
2 --o0o--
3 AQPSD AIR POLLUTION SPECIALIST FIDELDY: The
4 State of California has an ambitious suite of clean air
5 requirements and climate goals we are working to meet over
6 the next 30 years. The graphic here shows the various
7 State Implementation Plan attainment years for South Coast
8 and San Joaquin Valley, the two areas with the most
9 challenging ozone and fine particulate air quality in the
10 nation. There is also an immediate need to reduce
11 emissions and exposure in the state's highly impacted, low
12 income and disadvantaged communities. Climate goals
13 include the mid-term target in 2030 for 40 percent
14 reduction in greenhouse gas emissions below 1990 levels
15 and longer term targets in 2045 for carbon neutrality and
16 2050 for greenhouse gases 80 percent below 1990 levels.
17 --o0o--
18 AQPSD AIR POLLUTION SPECIALIST FIDELDY: Senate
19 Bill 44, or SB 44, was signed into law in September of
20 2019. This bill requires CARB to update the Mobile Source
21 Strategy every five years with the first update due by
22 2021. More specifically, SB 44 requires the update to
23 include a strategy for the deployment of clean medium- and
24 heavy-duty vehicles for the purpose of meeting federal
25 ambient air quality standards and reducing greenhouse gas

emissions.

Because meeting the state's air quality and climate goals requires action across the full spectrum of mobile sources, the 2020 Strategy also includes scenarios for light-duty on-road vehicles, as well as a wide range of off-road equipment sectors.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: This year, in recognition of the severity of the climate crisis and the need for immediate action, Governor Newsom signed Executive Order N-79-20. This order established a first-in-the-nation goal for 100 percent of California sales of new passenger cars and trucks to be zero-emission by 2035.

In addition, the Governor's order set a goal to transition 100 percent of the drayage truck fleet to zero emission by 2035, all off-road equipment, where feasible, to zero-emission by 2035, and the remainder of medium- and heavy-duty vehicles to zero-emission where feasible by 2045. CARB is committed to achieving these goals and the 2020 Strategy is an important first step in moving us forward.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The scenarios outlined in the 2020 Strategy are expected to

lead to significant reductions from mobile source emissions of oxides of nitrogen, or NOx, and greenhouse gases. As will be described later, this can be achieved using strategies such as zero-emission only sales of all on-road light-duty, medium-duty and heavy-duty vehicles by 2035 in accordance with the Governor's recent order.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The 2020 Strategy scenarios and concepts set up a road map to that has the potential to achieve significant benefits, but this is only the beginning of the process. Multiple phases of development are needed to generate measures, regulatory proposals and programs. Specifically, for criteria pollutants, this process will take place through the State SIP Strategy that staff will be developing over the next year and a half.

The State SIP Strategy will include measures and commitments to achieve the emissions reductions needed for attainment of federal ozone and PM2.5 standards in the South Coast Air Basin, the San Joaquin Valley, and any area -- other areas of the state that require emission reductions from new State programs. Elements of the 2020 Strategy will also be incorporated into the 2022 Scoping Plan and other CARB planning efforts.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: Although many of the scenario trajectories in the 2020 Strategy target emission reductions in 2030 and later, we understand the importance of reducing emissions in the near term for attainment of air quality standards, especially in the South Coast and the San Joaquin Valley, and to reduce exposure in communities of concern across California.

Staff are continuing to develop the measures listed that were presented in October as part of the Board update on the implementation of the San Joaquin Valley PM2.5 SIP. Taking into account feedback from the districts and others, we are planning to include more discussion of these and potentially other near-term actions in the final 2020 Strategy.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The joint CARB and South Coast AQMD public working groups is a complementary effort is also underway that will identify additional measures for four working group topics - ocean-going vessels, aircraft, trucks and infrastructure, and construction and industrial equipment. These will establish the measures needed to meet the 2037 air quality standards.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: Mobile sources and the fossil fuels that power them continue to contribute a majority of emissions of NOx and they are the largest source -- contributor to greenhouse gas emissions in California. The charts here show 2017 statewide NOx emissions on the left and greenhouse gas emissions on the right, broken down into specific mobile sectors with on-road in the dark green color, off-road in the light green and stationary and areawide sources in gray.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: This slide summarizes the types of strategies we will need to pursue to achieve the necessary transformations of the light-, medium- and heavy-duty fleets. As shown in the table, aggressive ZEV penetration is needed for all on-road sectors, supplemented by other regulatory programs and incentives. For light- and medium-duty vehicles, a key undertaking will be Advanced Clean Cars II, the suite of proposed new vehicle regulations built on the first iteration of the Advanced Clean Cars Program and will include enhanced ZEV regulations to move beyond early adopters and enhanced LEV regulations to reduce emissions from traditional technologies.

For heavy-duty vehicles, the recently adopted Advanced Clean Trucks Regulation set sales targets

beginning in 2024 that will serve as a substantial first step towards getting significant numbers of heavy-duty ZEVs onto California roads.

Recognizing that it will take time to transform the fleet, another key strategy will be cleaning up the remaining combustion technology. This will be accomplished through programs such as the Heavy-Duty Omnibus Regulation that will require lower NOx emissions from newly manufactured diesel engines as well as Phase 2 Greenhouse Gas Regulations and the future Heavy-Duty Inspection and Maintenance Program, which staff continues to evaluate for opportunities to achieve early reductions.

Reducing vehicle miles traveled, or VMT, will also be crucial to reducing emissions from passenger cars and across all on-road sectors.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The chart, and those you'll see on the next few slides, are examples of the scenarios that staff have developed for some of the key mobile source sectors. The 2020 Strategy includes these types of scenarios for each of the different mobile sectors.

Rather than showing emission trends, these graphs illustrate the growing mix of cleaner vehicle technologies needed to meet California's air quality and climate goals.

The graph here shows how the mix of vehicle technologies in the California light-duty fleet would need to change over time, assuming a ramp up to 100 percent of light-duty vehicle sales being ZEVs and PHEVs in 2035.

The resulting technology population fractions in the in-use fleet are shown with ZEVs in light blue and yellow, PHEVs in the teal shade and gasoline vehicles shown in dark blue. Under this scenario, the State could see eight million light-duty ZEVs and PHEVs on the road in 2030, which leads to a fleet that is 85 percent ZEV and PHEV in 2045.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: In addition to controlling emissions on a per vehicle basis, another critical piece of the puzzle to reducing emissions from the transportation sector is vehicle miles traveled, or VMT. Electric vehicles are not enough.

As you have heard previously, the 2018 SB 375 progress report concluded that the State is not on track to achieve the GHG emissions reductions envisioned under SB 375. But reducing emissions is not the only reason to curb the growth in VMT. The communities in which we all live are shaped by how we think about cars, not people or communities. The has led us to a place where many Californians are too often left with little choice but to

1 spend significant and -- time and money commuting long
2 distances.
3 Where we put transportation and housing also
4 imposes and often reinforces long-standing racial and
5 economic injustices by placing a disproportionate burden
6 on low-income Californians, who end of spending the
7 highest proportion of their wages on a place to live and
8 traveling. It is therefore imperative that California
9 rethink transportation and housing.
10 This slide lists some ways that CARB and our
11 agency partners can reduce VMT including:
12 Promoting SCS implementation to secure and
13 sustain emissions reductions by linking transportation
14 investments and land-use decisions; developing a
15 greenhouse gas mitigation bank; aligning with Cal ITP, the
16 state's initiative to establish a framework for integrated
17 travel planning and payment through incentives and
18 rebates; and, exploring non-regressive transportation and
19 demand management.
20 --o0o--
21 AQPSD AIR POLLUTION SPECIALIST FIDELDY: For the
22 on-road heavy-duty vehicle sector, which includes buses
23 and long-haul trucks, staff defend a scenario that was
24 consistent with the Governor's Executive Order by assuming
25 100 percent new vehicle sales are zero-emission starting

in 2035.

We developed multiple scenarios for this heavy-duty category but only this scenario shows the level of technology transformation necessary to meet both our mid-term air quality goals in 2037, as well as our long-term climate change goals.

This is the technology mix trajectory of the in-use vehicle population under the MSS scenario. We have listed the resulting percentage of clean combustion and zero-emission vehicles on the road for the target years 2031, 2037 and 2045 across the top of the chart. With the population of heavy-duty vehicles represented, you can see in the solid green and the green and white striped sections that this aggressive scenario results in the total of about 830,000 heavy-duty ZEVs statewide in 2045, which is 77 percent of the total on-road heavy-duty fleet.

While the number of ZEBs -- ZEVs, excuse me, seems ambitious, we are seeing more and more models of zero-emission vehicles being introduced into the marketplace. There are currently four commercially available models of heavy-duty Class 7 and 8 zero-emission trucks in North America. CalStart estimates, in their zero-emission technology inventory tool, that by 2024 we could see around 20 models of Class 7 and 8 zero-emission trucks on the market and more than 60 models of

medium-duty zero-emission trucks. The technology is out there and rapidly evolving. And as can be seen in our scenario here, it's what we need to be bold.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY:

Overlaying the previous gaff -- graph with statewide heavy-duty trucks and buses, NOx emissions show potential reductions of over 55 percent in 2031 and 80 percent in 2037.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY:

Switching gears, I'm now going to discuss scenarios and strategies for the off-road sector. This figure shows statewide NOx by sector with the filled in portions representing the off-road sector compared to the on-road in the dotted line. As our cars and trucks are becoming increasing cleaner, emissions from off-road engines and equipment are becoming relatively more important, such that off-road vehicles and equipment now surpass on-road vehicles as the largest statewide contributor of NOx emissions.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY:

Aggressive strategies to further control emissions from off-road equipment are critically needed.

1 Staff are evaluating multiple scenarios for this sector.
2 Considering -- considerations include using zero-emission
3 technology wherever possible. In cases where
4 zero-emission technology is not feasible, we looked at
5 strategies that included more stringent emission standards
6 and on-board diagnostics requirements.
7 Other key strategies we'll be pursuing include
8 accelerated retirement of older equipment, retrofitting
9 with after-treatment technologies, and use of renewable
10 fuels where electrification is not feasible.
11 --o0o--
12 AQPSD AIR POLLUTION SPECIALIST FIDELDY: For
13 those off-road sectors where smaller engines are common,
14 the 2020 Strategy assumes it is reasonable to transition
15 completely to zero emissions. This aligns with the
16 Governor's Executive Order, which requires full transition
17 to zero for off-road by 2035 where feasible.
18 For TRUs, as you can see in the chart on this
19 slide, the 2020 Strategy actually drives to 100 percent
20 zero-emission technology by 2033. Staff in our
21 Transportation and Toxics Division have been working on a
22 new proposed TRU regulation to require adoption of
23 zero-emission TRUs.
24 There is also ongoing rulemaking to drive
25 adoption of zero-emission technology for small off-road

engines, forklifts and other sectors.

A key strategy concept is also the adoption of more stringent emission standards for the remaining combustion equipment, where transitioning to zero-emission is not yet feasible. This includes a Tier 5 standard for off-road equipment that can achieve 50 to 90 percent NOx and PM reduction from Tier 4 final equipment.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: While there are a number of other scenarios for the off-road sector in the 2020 Strategy, the key one that we want to touch on today is for ocean-going vessels. The Board recently adopted a regulation to reduce emissions from ships at berth, which will provide significant reductions of toxic diesel PM in portside communities. However, emissions from ships during transit, anchorage, and maneuvering must also be addressed in order to achieve the NOx reductions needed.

This scenario aims to phase out all tier zero to two vessel visits by 2031, and to push the International Maritime Organization to introduce Tier 4 marine standards in 2028. Actions of this nature will take coordination and effort at the State, local and most significantly at the federal level. Staff has been collaborating with South Coast AQMD on development of this scenario and

evaluating options for reducing emissions from ocean-going vessels. We are also looking forward to working more closely with U.S. EPA in the coming years to develop and implement needed strategies in this sector.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The 2020 Strategy scenarios that I just went over will provide significant emission reductions, especially in mid- and longer terms. The charts on this slide show the estimated reductions in statewide NOx emissions that could be achieved under -- between the baseline emissions under current programs and what emissions would be under the MSS scenarios, including stationary and area source emissions. The graph shows a 40 percent reduction of NOx by 2031 and 54 percent by 2037. Keep in mind that these charts do not take into account actions that the districts are also working on to control emissions from stationary and areawide sources. So there's potential for even greater overall emission reductions than is shown here.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: The 2020 Strategy scenarios also provide the potential for significant fuel-consumption savings and corresponding reduction in well-to-wheel greenhouse gas emissions. The chart on the left shows projected gasoline, diesel and CNG

savings in 2045 assuming the implementation of existing CARB programs, mobile source strategy scenarios.

The scenarios would achieve an 80 percent reduction in fuels compared to less than 15 percent reduction with just existing programs. The resulting well-to-wheel greenhouse gas emissions are shown on the right in that chart, with the MSS scenarios showing the potential to achieve by 2045 a 76 percent reduction in greenhouse has emissions compared to 17 percent under existing programs.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY:

Achieving the technology trajectories outlined in the 2020 Strategy has the potential to provide substantial health benefits for Californians over the next 30 years. Studies have shown that transitioning away from combustion technologies will reduce pollution-related death and illness. Developing a quantitative assessment of the health benefits of this strategy requires regional emissions and air quality modeling. Staff has begun this assessment and will report back to the Board next year with the results of our analysis.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: Although the 2020 Strategy will provide statewide and regional

1 emissions benefits, we are keenly aware that emissions
2 from mobile sources have a disproportionate impact on
3 disadvantaged communities and people of color. Many of
4 whom live adjacent to transportation corridors. The
5 scenarios and concepts in the 2020 Strategy, especially
6 those covering the freight sector, have the potential to
7 reduce emissions in exposure in these communities of
8 concern.
9 That said, it has been a challenge to incorporate
10 mechanisms to prioritize benefits of CARB regulations in
11 these communities. This strategy seeks rapid transition
12 to zero-emission technologies statewide across numerous
13 sectors. But we know that we need to act even more
14 quickly and target the introduction of zero-emission
15 vehicles in the communities that for generations have been
16 bearing the brunt of combustion emissions.
17 We fully intend for the 2020 Mobile Source
18 Strategy to inform not just regional air quality plans,
19 but also AB 617 Community Emission Reduction Plans and
20 other efforts to address historic air quality inequities.
21 --o0o--
22 AQPSD AIR POLLUTION SPECIALIST FIDELDY: Of
23 course, a key piece to the transition to zero-emission
24 technology is the infrastructure needed to facilitate it.
25 We know that a streamlined process that allows for massive

infrastructure buildout is necessary to enable introduction of the large number of zero-emission vehicles needed to meet our goals. Staff has been working with our sister agencies throughout the development of the 2020 Strategy to evaluate the specifics of what is needed to support this transition.

A key effort on this front is the AB 2127 report, a report assessing the State's vehicle charging infrastructure needs being prepared by the California Energy Commission. The assessment will address both on-road vehicles and off-road equipment and will incorporate the scenarios described in CARB's 2020 Mobile Source Strategy.

In addition, the Governor's Office of Business and Economic Development, or GO-Biz, is tasked with coordinating across the State government on the infrastructure needs for implementing the Governor's ZEV Executive Order. We will be continuing to work with them on this effort going forward.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: Lastly, I want to highlight that we cannot achieve our goals without action at the federal level. As can be seen on this plot, mobile source NOx emissions in the South Coast from sources under State control have decreased 75 percent

relative to 2000 and are projected to continue decreasing as we implement the programs CARB has on the books and adopt additional mobile source regulations.

Without new emission standards at the federal level, the emissions from primarily federally regulated sources is expected to decline only slightly over the next decade, such that they surpass emissions from California regulated mobile sources before 2030.

That being said, we have a more positive outlook for addressing emissions from federally regulated sources in the coming years and look forward to collaborating closely with the federal government on efforts to reduce emissions from sources primarily under their control and to restore California authority to achieve the needed emission reductions.

--o0o--

AQPSD AIR POLLUTION SPECIALIST FIDELDY: I would like to now touch on the public process that staff has engaged in throughout the development of the 2020 Strategy. We first invited public and stakeholder feedback in March with a public webinar at which preliminary scenarios were presented.

We then presented those preliminary scenarios and concepts to the Board in April to obtain your feedback and allow for public input. Staff released the workshop

1 discussion draft in late September for public comment and
2 held our second webinar on October 7th.
3 Public engagement at both of our webinars was
4 high, with more than 300 participants attending each. In
5 advance of this update today, we released the draft 2020
6 Strategy on November 24th. As I mentioned earlier, our
7 plan for moving forward is to release a final iteration of
8 the 2020 Strategy in the next few months and to bring that
9 final version to you for consideration.
10 The final version will reflect direction received
11 from you today and also address comments received from
12 stakeholders.
13 The public process for refining the concepts
14 included in the 2020 Strategy does not end today or when
15 we come back to you early next year. The process of
16 developing specific emissions reductions strategies, which
17 will take into account economic and technological
18 feasibility, will continue over the coming years through
19 the development of the 2022 State SIP Strategy, the
20 Scoping Plan, regional plans for attainment of federal
21 standards, and other CARB planning efforts.
22 --o0o--
23 AQPSD AIR POLLUTION SPECIALIST FIDELDY: The
24 leadership of this Board, in recognizing the importance of
25 zero-emission vehicles, is exemplified by this picture

1 taken almost 25 years ago. Chair Nichols after serving
2 her first stint as CARB Chair is shown next to the General
3 Motors EV 1, the first mass-produced and purpose-designed
4 electric vehicle of the modern era from a major automaker.
5 There are now dozens of different models of
6 light -- zero-emission light-duty vehicles and four
7 heavy-duty zero-emission truck models being sold in
8 California. These dramatic advances in technology in a
9 mere three decades give us confidence that the ambitious
10 goals outlined in the 2020 mobile source strategy can and
11 will be achieved.
12 Thank you, Chair Nichols and members of the
13 Board.
14 CHAIR NICHOLS: Okay. Well, thank you for that
15 and for that reminder of my brief time in which I actually
16 got to drive an EV 1. I was one of the people who was
17 loaned one for a brief period of time before General
18 Motors took them back. But they're back again
19 fortunately, not in that model, but with others. And
20 they're, in many ways, better than the one that I drove.
21 I'll never forget a pretty hair raising drive from Malibu
22 to UCLA, where I had to try to find a place to plug in at
23 UCLA and there was no such thing. I mean, not even an
24 outlet to plug the car into anywhere near the building
25 that I was going to.

1 So I then had to go on the expedition to century
2 city and plug into a charger that they had put in under
3 the shopping mall there, which forced me to spend several
4 hours shopping in century city. So it was a harrowing
5 experience all around, but.
6 (Laughter.)
7 CHAIR NICHOLS: Shall we then move on to public
8 comment at this point?
9 Ryan, do you have a list there?
10 BOARD CLERK SAKAZAKI: I do. Thank you, Madam
11 Chair. So we -- as the Chair mentioned, we will be
12 reducing the time to two minutes. We have 22 people with
13 their hands currently raised. If you wish to speak on
14 this item, please raised you hand or dial star nine, if
15 you're on the telephone.
16 Our first three speakers are Sasan Saadat,
17 Cynthia Pinto-Cabrera, the Jack Fleck.
18 So Sasan, I have activated your microphone. You
19 can unmute yourself and begin.
20 MR. SAADAT: Great. Thanks, Ryan. Can you hear
21 me?
22 BOARD CLERK SAKAZAKI: We can.
23 CHAIR NICHOLS: Yes.
24 MR. SAADAT: Okay. Awesome. Good morning.
25 Sasan Saadat speaking with Earthjustice.

1 To start, I'd just like to thank all of our
2 outgoing Board members for their service. This agency
3 been absolutely critical getting some really exciting work
4 done for public health. So big thanks to Chair Nichols,
5 Board members Gioia, Mitchell, Sherriffs for your service.
6 And we're really excited to work with the new
7 Board to advance the transition to zero emissions. Last
8 year, Chair Nichols said at a talk that this agency has
9 been crucial for nurturing new cleaner technologies, but
10 that meeting our goals means the next stage of the work is
11 to focus on wholesale transformation of the sector to zero
12 emission. Earthjustice agrees, this transformation is
13 absolutely necessary to protect public health, meet
14 climate and clean air standards, and it's a huge project
15 for the Mobile Source Strategy.
16 So A we're bit concerned that the strategy
17 isn't -- it remains untethered to meeting our national
18 ambient air quality standards and meeting our targets for
19 air quality and for climate, meaning that mass deployment
20 of ZEV technology needs to happen in this decade, and that
21 we can't base our strategy on wishful rates of accelerated
22 turnover in the final years of 2040.
23 So we look forward to working with staff and the
24 Board on strengthening the strategy to make sure we're on
25 a good path. And we also want to recognize that an

important part of adjusting mobile sources of pollution is Indirect Source Review rules. So ISRs for warehouses and railyards, these are vital rules and we need them to make sure the benefits of zero-emission technology is going to the most polluted communities.

The South Coast has an important ISR coming up for warehouses. And the stringency of that rule couldn't be more important for the communities dealing with sprawling warehouses and logistics centers in their neighborhoods. We know the tech is ready, so we really need CARB to make sure they move forward on a strong rule that leaves nothing on the table.

And we need CARB to eliminate any barriers, real or perceived, to other air districts pursuing their own ISR rules to make sure that these zero-emission technologies are focused in environmental justice communities.

So thank you again for your time. And we look forward to partnering with the Board on this important work.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is Cynthia Pinto-Cabrera. Cynthia, I have activated your microphone. You can go ahead and begin.

MS. PINTO-CABRERA: Hello. Good afternoon, Chair Nichols and members of the Board. I'm Cynthia

1 Pinto-Cabrera, a policy assistant with the Central Valley
2 Air Quality Coalition.
3 And I'd just like to begin by thanking Chair
4 Nichols for her service as well as the other Board members
5 who will be transitioning out. We greatly appreciate the
6 work you have done. As an asthmatic in the San Joaquin
7 Valley, I truly appreciate the work that is being done.
8 As you well know, the San Joaquin Valley
9 residents are currently breathing some of the nation's
10 dirtiest air. I'd like to support and echo the comments
11 that were just made by Sasan and Earthjustice. As you
12 know, CARB's Mobile Source Strategy is an essential part
13 of achieving clean air in the valley, and particularly
14 addressing heavy-duty trucks and the diesel -- and diesel
15 particulate matter is extremely crucial for the valley.
16 CARB has identified diesel particulate matter as
17 a toxic air contaminant that has been linked to increased
18 cancer risk, respiratory illnesses and so forth. Diesel
19 particulate pollution has been a focus and a priority for
20 both Stockton and Fresno AB 617 communities, as well as
21 other communities throughout the valley.
22 And with its authority over mobile sources,
23 CARB's decisions have a direct impact on the health of the
24 people of the San Joaquin Valley and our air basin's
25 ability to meet these health protective attainment

standards. Relief from air pollution can be achieved faster through an expedited Heavy-Duty Inspection and Maintenance Rule beginning in 2022, including a plan to retire old diesel trucks and focusing on equity and community air protections. As many disadvantaged communities are within the San Joaquin Valley and disproportionately impact low-income communities, that it's essential that we expedite some of these strategies within the Mobile Source Strategy.

And with that, I'd like to again thank -- thank you and thank the Chair and those Board members transitioning out and wish everybody Happy Holidays.

Thank you.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is Jack Fleck. After Jack, we have Will Barrett, Amy Wong and Daniel Barad.

So Jack, I have activated your microphone. You can unmute yourself and begin.

MR. FLECK: Good afternoon, Chair Nichols and Board members. I'm Jack Fleck. I'm a transportation engineer and a member of the 350 Bay Area transportation campaign.

I just want to focus on the fact that the Mobile Source Strategy does not come up with a plan to actually address SB 32's goal of 40 percent reduction by 19 --

of -- by 2030 from 1990 levels. In fact, if you look at the numbers, it comes up with about a 16 percent reduction, which is way, way less than what we need.

Now, it is aggressive. I grant that. It calls for eight million electric vehicles by 2030, which is more than the five million goal that had previously been set by, I believe, Governor Brown. But remember, the Intergovernmental Panel on Climate Change says we need a 50 percent reduction by 2030 or we're going to face climate chaos. So this is not just an aspirational goal that feels good. This is something that we need and we know what California is suffering in terms of wildfires and that's only one degree centigrade warming so far.

So I did some calculations. I sent them to the Board. It looks to me like you would need 13 million EVs by 2030 in order to meet even have a chance of meeting the goals of the SB 32.

So I applaud the Governor's statement about no more gas cars after 2035, but the fact is we can't have anymore after 2025, if we're going to be serious about meeting these goals. So I would again argue that failing to act with this urgency is just not a viable option. And it may be like a very daunting goal, but I urge you as Board members to remain undaunted. You've been very progressive and active all through the career of CARB.

1 And this is another opportunity to do the same.
2 So thank you for your service and please direct
3 the Board to solve this problem.
4 Thank you.
5 BOARD CLERK SAKAZAKI: Thank you.
6 Our next speaker is Will Barrett. Will, I have
7 activated your microphone. You can unmute yourself and
8 begin.
9 MR. BARRETT: Thank you, Ryan. I'd like to start
10 by noting that the American Lung --
11 BOARD CLERK SAKAZAKI: Will, you are really,
12 really quiet. We can barely hear you.
13 MR. BARRETT: Thank you, Ryan. Appreciate that.
14 I'd like to start by noting that the American
15 Lung Association and several of our health and medical
16 partners submitted written comments today. And I'll touch
17 on a few of those key points.
18 We view the Mobile Source Strategy as an
19 important opportunity to really highlight the seriousness
20 of the impacts to our health, our air, our climate and on
21 disparities created by transportation fuel combustion in
22 neighborhoods across California.
23 We believe many measures should be strengthened
24 and accelerated beyond what's laid out in the plan. We do
25 support the vision laid out to achieve zero emissions in

line with the Executive Order, the real focus that's needed on developing these near-term actions, and on local, State and federal coordination as outlined throughout the process.

We urge you to continue to emphasize the role on VMT reduction. We know that we're continuing to leave many public health, equity, conservation and emission reduction benefits on the table by failing to achieve the goals of SB 375. The document lays our important concepts for moving forward on VMT reductions. We appreciate the attention that's been given to this topic and we are encouraged very much by the cross-agency efforts on this front.

On heavy-duty vehicles, we strongly support the adopt -- supported the adoption of the Advanced Clean Truck Program and especially urge you to continue to focus on the drayage sector, transitioning to fully electric by 2035. We believe that coupling the electrification on the front end with retirement on the back end of the oldest dirtiest trucks is critically important within the drayage category but across the heavy-duty truck sector as whole.

We also would like to see the Inspection and Maintenance Program accelerated and brought online fully statewide by 2022 to really ensure that the smog check for trucks program is delivering the benefits we know are

1 possible there.
2 So in closing, we really appreciated the
3 opportunity to weigh in along the way through the many
4 workshops and the hearings and look forward to the public
5 health evaluation process that's coming forward as well.
6 Thank you very much. Happy Holidays.
7 BOARD CLERK SAKAZAKI: Thank you.
8 Our next speaker is Amy Wong. Amy, I have
9 activated your microphone. You can unmute yourself and
10 begin.
11 MS. WONG: Thank you. Good afternoon, Honorable
12 Chair Nichols and Board Members. My name is Amy Wong.
13 I'm a Program Specialist at Active San Gabriel Valley.
14 We're a community-based non-profit organization with the
15 mission to create a more sustainable, equitable and
16 livable San Gabriel Valley region of Los Angeles County.
17 We urge CARB to do more to reduce pollution from
18 transportation in California, as the Mobile Source
19 Strategy does not actually show numbers of emission
20 reductions that add up to bringing the state into
21 attainment by the deadline set by the federal government,
22 pursuant to the Clean Air Act.
23 To advance environmental justice and equity, we
24 need to address air pollution at the root at its sources.
25 Transportation is the largest source of greenhouse gas

emissions in California, which is most harmful for our low income communities of color, like those of us who live in The San Gabriel Valley, many of us who live next to freeways full of cars and trucks, the 10, 60, 605, 210, for example, and we suffer from high rates of asthma, lung cancer, and many chronic health issues.

Our communities need clean air and we need it now. The Mobile Source Strategy should include target measures to reduce emissions in the most impacted communities to provide relief, as stated in the Community Air Protection Program established by AB 617 -- 617.

The Strategy should also include more measurable and actionable commitments to end program design elements that lead to more on-road emissions and health impacts, expand the cars scrappage and reduce overall vehicle miles traveled by using SB 375 to bring about land-use changes that reduce greenhouse gas emissions from personal transportation. We urge you to strengthen the strategy.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Daniel Barad. After Daniel, we have Andy Schwartz, Kevin Maggay and Urvi Nagrani.

So, Daniel, I have activated your microphone. You can unmute yourself and begin.

MR. BARAD: All right. Good afternoon. Daniel

1 Barad representing Sierra Club California and our more
2 than half a million members and supporters in California.
3 We support this draft Mobile Source Strategy's
4 emphasis on quickly transitioning California's
5 transportation sector to entirely zero-emission vehicles.
6 We are encouraged by the draft support of the Governor's
7 Executive Order to get the State to a hundred percent
8 zero-emission light-duty vehicle sales by 2035, and its
9 focus on getting to a hundred percent heavy-duty vehicle
10 sales by 2045.
11 But we urge the Board to move even more quickly
12 towards these important goals. Light-duty battery
13 electric vehicles are expected to achieve cost parity with
14 their internal combustion engine counterparts by 2024 or
15 2025.
16 A competitive up-front cost coupled with their
17 significantly lower total cost of ownership will make BEVs
18 even more appealing to consumers. And CARB can push the
19 market forward by setting ambitious targets to achieve a
20 hundred percent sales before 2035.
21 With regards to heavy-duty vehicles, we believe
22 that California can and must achieve a hundred percent
23 zero-emission sales before 2045. As the draft suggests,
24 the Board must act in the near term to get to a hundred
25 percent with drayage, public fleets and first/last mile

deliveries.

Further, the Board should work to retire the oldest and dirtiest fossil fuel trucks and cease to provide support for new fossil fuel vehicles.

Finally, in addition to accelerating transportation electrification, CARB must implement the tightest possible emission controls on internal combustion engines prior to phasing them out entirely. We look forward to working with CARB in the coming months and years to support California's transition to a 100 percent carbon free transportation system.

Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Andy Schwartz.

Andy, I have activated your microphone. You can unmute yourself and begin.

MR. SCHWARTZ: Great. Thank you so much. Good afternoon. My name is Andy Schwartz, speaking on behalf of Tesla. First, I want to thank staff for their hard work preparing the Mobile Source Strategy. We generally support its goals and direction. We submitted written comments, but today I want to highlight two concerns in particular.

First, since we know that battery electric vehicles have much lower emissions than any other vehicle

1 technology on the road today, and that this difference
2 will grow over time as the grid gets cleaner, we ask that
3 the Board include a 2030, 100 percent ZEV sales scenario
4 for the light-, medium- and heavy-duty vehicles in the
5 strategy sensitivity analysis.
6 The analysis only includes two scenarios, one of
7 which is a delayed 2040 date when conventional vehicle
8 sales end. Consistent with Chair Nichols comments earlier
9 and I believe those of Sierra Club, we question why it
10 wouldn't -- why the Board wouldn't include an earlier
11 date, given the climate crisis we face.
12 Second, the strategy assumes that plug-in hybrids
13 on average drive on electricity 48 percent of the time or
14 approximately 28 miles in 2020 and 52 miles in 2030. The
15 record would reflect this assumption is overly optimistic
16 and should be reduced by at least 50 percent consistent
17 with a recent ICCT study finding that real-world share of
18 electric driving for plug-in hybrids on average is about
19 half the share considered in their type approval or
20 certification standard.
21 Lastly, more generally, like others, I would be
22 remiss if I didn't take a moment to express a profound
23 sense of gratitude to those Board members that will be
24 leaving ARB. Chair Nichols and Board members Gioia,
25 Mitchell, and Sheriffs, your leadership and that of ARB

1 over the decades has been so fundamental to efforts, not
2 just in California, to address pollution and climate
3 change, but also efforts nationally and globally. You are
4 among the giants upon whose shoulders we stand.
5 Thank you so much for the opportunity to speak
6 this afternoon.
7 BOARD CLERK SAKAZAKI: Thank you.
8 Our next speaker is Kevin Maggay.
9 Kevin, I have activated your microphone. You can
10 unmute yourself and begin.
11 Kevin. Kevin, are you there?
12 Okay. Kevin, you've unmuted, but we can't hear
13 you.
14 Okay. Kevin -- Kevin, we still can't hear you,
15 but we have the call-in number and access code right
16 there. If you call in to our Zoom webinar and dial star
17 nine to raise you hand, we'll -- we can get you on the
18 phone -- on the phone.
19 So next we'll go to Urvi Nagrani. After Urvi, we
20 have Madeline Rose, Max Pfeiffer and Anjali Deodhar.
21 Sorry, if I mispronounced that.
22 Urvi, I have activated your microphone. You can
23 unmute yourself and begin.
24 MS. NAGRANI: So first of all, I'd like to thank
25 the Board members who are outgoing for their service to

1 California over the years.
2 Like many of the other folks looking at this
3 plan, I would love to see it strengthened, because with
4 the turnover of vehicles, we don't see a full ZEV
5 deployment until over a decade from now. And frankly,
6 with the climate emergency we're in where we experience
7 orange skies and the state burning from months on end, we
8 need more.
9 The other thing is specifically towards some of
10 the details of the plan. On the medium- and heavy-duty
11 segment, there is a consistent use of vehicle miles
12 traveled. And while that is an appropriate metric for
13 light-duty vehicles, for work vehicles and vehicles that
14 have huge amounts of idling time, vehicle miles traveled
15 doesn't accurately assess the most inefficient portion of
16 when the vehicle is operating, the type of work it does,
17 and the opportunities for hybridization of the work
18 function as opposed to the drive function. And I think
19 the lack of that analysis makes the ability to address
20 both off-road emissions as well as work-truck emissions
21 hindered.
22 The other thing is that as we look to what
23 incentives are going to, I agree that they should be
24 retired for investments in fossil-fueled vehicles.
25 However, if we are going to invest in electrification, I

1 think we should invest in electrification of both the work
2 function, retrofits, as well as pure ZEVs, so that we can
3 accelerate the reduction of emissions on older vehicles,
4 as well as make the transformations needed to where we
5 need to be in the future.
6 Thank you once again for your service to the
7 State of California, and I look forward to working with
8 the new members as they are sworn in.
9 BOARD CLERK SAKAZAKI: Thank you.
10 Our next speaker is Madeline Rose. I have
11 activated your microphone. You can unmute yourself and
12 begin.
13 MS. ROSE: Great. Thank you, Ryan.
14 Hello, everone. My name is Madeline and I'm the
15 Climate Campaign Director for Pacific Environment. We're
16 a California based global environmental organization.
17 My comments today will focus on the ocean-going
18 vessel section of the Mobile Source Strategy. And I'd
19 like to flag for the Board that we've submitted comments
20 in October to the staff urging CARB to add a focus on
21 regulating the carbon equivalent intensity of the
22 ocean-going vessels in California ports and waters
23 consistent with the international Paris Climate Agreement.
24 As the Board well knows, ships continue to bring
25 massive amounts of greenhouse gas criteria and short-lived

1 climate emissions to California, particularly in Southern
2 California. Put simply, the scenarios to curb emissions
3 from ocean-going vessels in this strategy are positive,
4 but they're not sufficient. And they're actually falling
5 behind global best practice in a couple of ways.
6 The European Union right now is working to put in
7 place Paris-aligned carbon equivalent intensity standards
8 for all ships docking in all EU ports and cruising all EU
9 waters. China, Japan, South Korea and leading shipping
10 companies are rapidly working to bring deep sea
11 zero-emission ocean-going vessels into commercial
12 operation as early as 2023. We appreciate completely the
13 need for action by the EPA and the IMO, but we believe
14 that California can and must act first to set these
15 standards here.
16 In summary, we strongly urge the Board to expand
17 CARB's focus on ocean-going vessels in the 2020 Mobile
18 Source Strategy, specifically by regulating their carbon
19 equivalent intensities.
20 And just as many of my other colleagues said,
21 thank you so much to Chair Nichols and to all of the
22 outgoing Board members. This was my first year doing CARB
23 advocacy moving out from D.C. and I just learned so much
24 and have been so grateful for your staff time and your
25 leadership and I look forward to working with the new

Board in 2021.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Max Pfeiffer. I have activated your microphone. You can unmute yourself and begin.

MR. PFEIFFER: All right. Thank you, Ryan.

I'm -- first of all, like everybody, thank you very much members of the Board of your continued and dedicated effort towards the zero-emissions vehicle transition in California. I'm the CEO of Maxwell Vehicles. We are the only electric vehicle company in California right now that's delivering Class 2b zero-emissions vans. And so I'm speaking on behalf of a manufacturer of this technology, and wanting to make sure that I'm addressing some elements of the new funding strategy that may not have been addressed in this meeting that I think are critical to accelerating the transition of the correct technology.

And that mainly is that the current funding strategy biases more money towards higher class vehicles and heavier weight vehicles, which is kind of the opposite direction that we want to go with the technology. EVs perform better when they're lighter and more efficient.

And if we look at the historic implementation of

vehicles through the HVIP program that have received State funding, generally what we're seeing is manufacturers developing larger-than-necessary, heavier-than-necessary vehicles and selling them into lighter weight classes or, in some cases, even uprating them from like a Class 2 to a Class 3 or a Class 3 to a Class 4 to receive more State funding.

And so what I'm calling for here and trying to bring attention to the Board, and I've done so with some written comment as well analyzing this program, is that the funding that's deployed really needs to focus on the key metrics that matter for zero-emissions vehicles. And that's efficiency and, you know, range, payload, things that the customers actually care about, as well as cost.

So I'm hoping that there will be an opportunity for the HVIP funding committee to take a closer look at this and consider maybe changing the funding structure a little bit in light of this observation. So thank you very much for your time.

BOARD CLERK SAKAZAKI: Thank you. I think I heard Kevin Maggay. So, Kevin, are you there?

MR. MAGGAY: Yeah. Can you guys hear me okay now.

BOARD CLERK SAKAZAKI: We can, yes.

MR. MAGGAY: I'm sorry for my technical

1 difficulties.
2 SoCalGas appreciates that staff has made this
3 item an informational item. We feel that there -- the
4 Mobile Source Strategy is missing critical items needed
5 before the Board should adopt it. And we hope to continue
6 to work with CARB to incorporate changes before the
7 strategy is finalized.
8 The Mobile Source Strategy though focuses only on
9 the long term. The Board materials even only show
10 emission reductions in 2037 and 2045. The Mobile Source
11 Strategy must include a mix of strategies for heavy-duty
12 trucks that get both near-term and long-term emission
13 reductions.
14 What are the near-term and mid-term reductions
15 and what is a near-term and mid-term plan? California
16 needs immediate emission reductions to immediately reduce
17 health impacts to meet multiple attainment dates in this
18 decade and we desperately need carbon emission reductions
19 within the next decade to avoid the most severe and
20 irreversible impacts of climate change.
21 And as was mentioned earlier, we need reductions
22 of SLCPs right now and not in the future. We need urgency
23 and we can't leave emission reductions on the table.
24 The Omnibus Regulation and the Advanced Clean
25 Truck Rule, the mobile source regulations recently

adopted, actually get minimal emission reductions by 2030. Omnibus reduces NOx emissions by just seven percent versus the 2030 business as usual. That ACT reduces carbon emissions by 0.007 percent from 2030 business as usual -- as usual.

And you can confirm that with staff, but these numbers are from the Appendix D of each of the regulatory documents. The 2016 Mobile Source Strategy included 900 low NOx by 2030 in the San Joaquin SIP, which CARB committed to turn over 33,000 heavy-duty trucks with incentives by 2024.

These documents made commitments for the upcoming decade, but those, for some reason, are not included in this Mobile Source Strategy. These commitments seem to be gone. Again, what is the near-term and mid-term plan? Another important question is what does this Mobile Source Strategy do to reduce the number of diesel trucks on the road this decade? And the answer is almost nothing.

Again, the Mobile Source Strategy must include a mix of strategies for near-term and long terms-emission reductions.

BOARD CLERK SAKAZAKI: Okay. Thank you.

MR. MAGGAY: Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Anjali Deodhar. After

1 Anjali, we have Bill Magavern, Michael Geller, and Steven
2 Douglas. So Anjali, I have activated your microphone.
3 You can unmute yourself and begin.
4 MS. DEODHAR: Can you hear me?
5 BOARD CLERK SAKAZAKI: We can.
6 MS. DEODHAR: Thank you so much. My name is
7 Anjali Deodhar and I represent Viatec. We are a
8 technology manufacturer of electrification solutions for
9 work trucks.
10 First, I'd like to, of course, thank Chair
11 Nichols and the outgoing Board members for your leadership
12 and for your service. We would also like to thank our
13 staff and confirm our support for the focus on emission
14 reductions both in on- and off-road vehicles. As we
15 understand it, the ambitious goals for these vehicles, we
16 would like to take this moment to request that emphasis
17 should also be placed on hybrid vehicles, more than that
18 what gets placed right now, both in terms of PHEVs in the
19 transport sector, but also on the hybridization of the
20 work trucks that are part of the medium- and heavy-duty
21 truck sector, back to an earlier speaker brought attention
22 to this.
23 Specifically, a focus on after-treatment
24 technologies that address work functions for medium- and
25 heavy-duty trucks, which contribute to emission reductions

through technologies that do not engage with the vehicle engine. We'd like to urge CARB to consider the benefits of plug-in systems for fleets that cannot -- as a bridge, for fleets that cannot electrify fully yet. Because when coupled with ZEVs, this can help accelerate the state's emission reduction goals, adding emissions that disproportionately hit the workers -- front-line workers that are continuously working near idling vehicles for long periods of time. And solutions like after-market filters that are currently in primary consideration don't always help with this. So we'd like to put a lot of urgency into this -- into this fact.

As a representative of a new technology organization in this space, we look forward to continued engagement with staff and to CARB support through market incentives for these technologies, so that we have a greater chance of a much wider proliferation and we continue to contribute towards helping to meet the state's ambitious reduction goals.

Thank you a very much. We look forward to working with the new Board members as they get sworn in. Thanks.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Bill Magavern. Bill, I have activated your microphone. You can go ahead and begin.

1 MR. MAGAVERN: Thank you. Bill Magavern with the
2 Coalition for Clean Air. The vast majority of
3 California's air pollution comes from mobile sources, so
4 this strategy is a vital tool and we support many of the
5 measures included in the strategy, but unfortunately, what
6 the draft does not do is to show a path to attainment with
7 the deadlines under the Clean Air Act for delivering
8 healthy air. And I really thank Chair Nichols for making
9 that point at the outset.
10 You know, this year has been the worst year for
11 smog in the South Coast Air Basin of this century. So
12 that's not just stagnating, that's backsliding. And, of
13 course, the San Joaquin Valley continues to have the worst
14 particle pollution in the entire country. So in addition
15 to the federal help that we need on trucks, trains, ships
16 and planes, there's more that we need to do here at the
17 State level. And that should start with retiring dirty
18 old diesel trucks.
19 That's really where we would get the greatest
20 emission reductions. In fact, if we retired those trucks
21 at the end of their useful lives, the NOx reductions in
22 2031 would be greater than the total NOx reductions from
23 both Advanced Clean Trucks Rue and the Heavy-Duty Omnibus
24 Rule. Another way to reduce emissions from the dirty
25 older trucks is by expediting the implementation of the

Inspection and Maintenance Rule.

And in light-duty we also could do a lot more with scrappage and expanding Clean Cars 4 All to get the dirty old cars off the road and replace them, and also deliver quality-of-life improvements for those customers getting those cars.

And we also need to make much more effort to reduce vehicle miles traveled here in California.

Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Michael Geller. I have activated your microphone. You can go ahead and begin.

MR. GELLER: Thank you. Good afternoon, Chair Nichols and members of the Board. My name is Mike Geller and I'm Deputy Director for the Manufacturers of Emission Controls Association. MECA members are commercializing powertrain agnostic technology solutions to help their customers deliver vehicles with low to zero criteria and GHG emission footprints. MECA supports CARB's multi-pollutant planning approach to transitioning the mobile sector to clean propulsion technology to meet California's air quality and climate goals.

One of the main challenges that efficiency and emission control technology suppliers encounter is planning during this transition amidst the considerable

uncertainties.

The MSS will be made stronger by the inclusion of contingency plans. We urge staff to highlight the potential barriers, prioritize the magnitude of risk due to each and mitigate the risk posed to achieving the goals of the MSS by offering more than one technology path.

Further more, a set of alternate solutions could be identified to mitigate any loss to emission benefits. During CARB's review of the MSS every five years, staff could assess the status of technology readiness and recalibrate the toolbox based on the latest market conditions.

We feel that this will strengthen the 2020 MSS and thereby increase the chances of meeting the state's overall air quality and climate objectives. We've provided examples of a few scenarios in our written comments.

In conclusion, MECA applauds CARB's leadership in developing both short- and long-range strategies to meet California's environmental goals. There are effective near-term opportunities to continue to reduce criteria and greenhouse gas emissions from the entire transportation sector. Our Industry is committed to delivering cost effective, efficient, greenhouse reduction and emission control technologies to assist California in meeting its

1 climate and clean air goals.
2 Finally, on behalf of MECA and our members, I
3 want to thank Board members Mitchell, Sherriffs and Gioia
4 for their service to this Board and their dedication to
5 air quality and public health. To Chair Nichols, thank
6 you for your tremendous leadership for the past 13 years.
7 We look forward to continuing our 45-year partnership with
8 CARB on your mission to protect the health and welfare of
9 Californians.
10 Thank you.
11 BOARD CLERK SAKAZAKI: Thank you.
12 Our next speaker is Steven Douglas. After
13 Steven, we have Ryan Kenny, Zorik Pirveysian and Jon
14 Costantino.
15 So, Steven --
16 CHAIR NICHOLS: Excuse me, Ryan. I didn't mean
17 to interrupt. I just wanted to put out a request at this
18 time for anybody who is planning to testify or thinks they
19 might want to testify, to put their hands up now, so we
20 can get a better sense of how much time we need to
21 allocate to finish up the discussion.
22 Thank you.
23 BOARD CLERK SAKAZAKI: Thank you, Madam Chair.
24 MR. DOUGLAS: Good afternoon. I'm Steve Douglas
25 with the Alliance for Automotive Innovation. We

appreciate the staff's work on the Mobile Source Strategy and their willingness to work with us and all of the stakeholders. I'd just like to point out that the Mobile Source Strategy is not a regulation. And it doesn't reflect staff's conclusions of what's feasible or cost effective. This will require thousands of hours of work and technical analysis, by ARB staff, the automakers, suppliers, academics and others. This is the tried and true method that ARB has used for the last 50 years.

Moreover, perhaps for the first time in history, the work isn't just limited to automakers. The increasing electrification goals that have been announced by automakers, California, and the incoming Biden administration must include just to name a few, building codes that require charging infrastructure in every new parking spot, dramatically expanded hydrogen and electric fueling, incentives that reduce the cost of vehicles and technology, addressing electric and hydrogen fuel cost, vehicle purchase requirements for both public and private fleets, and outreach and education to increase consumer awareness and acceptance of advanced technology vehicles. We support all of these necessary measures and we recognize that many more are needed to realize our goal.

Finally, just to the extent I have a few seconds, I'd just like to say what a -- what a pleasure it's been

working with Council Member Mitchell, Dr. Sherriffs, Supervisor Gioia. I met with them many times over the years and they've always been open, receptive and thoughtful. So I just wanted thank you.

And then finally, for a little over half of my career, Mary Nichols has been the Chair of the ARB. Her goals, her priorities have always been crystal clear and she's always been polite but very direct, and firm, and fair in equal parts. So I'd just like to thank you on behalf of our Association for your leadership, your public service, and to recognize your commitment to a better environment and a cleaner future.

Thank you, Chair Nichols.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Ryan Kenny. Ryan, I have activated your microphone. You can unmute yourself and begin.

MR. KENNY: Thank you. Good afternoon, Chair Nichols and members of the Board. My name is Ryan Kenny with Clean Energy. And I'd like to acknowledge what Chair Nichols mentioned as part of this item by mentioning the year 2023 and the need to address federal attainment requirements. And I'd like to just urge the Board to run with that.

A lot of the regulations that have come forth

from the Board are focused on long-term emission reductions and not focused on federal attainment deadlines of 2023 and 2031. As we know, the Innovative Clean Transit Regulation, Advanced Clean Trucks, the Omnibus Regulation, what will become the Advanced Clean Fleets Regulation, the Executive Order, even the funding plan that's up next all are looking at long term emission reductions and not addressing 2023 and 2031 in our view.

I also mention that the Draft Mobile Source Strategy that's before you today, it does eliminate the goal from 2016 to provide -- deploy 900,000 low-NOx trucks by the year 2030. So there is an opportunity to run with this and really have a diversified technology mix to meet a performance standard to meet those emission reductions goals.

I also want to mention to the Board that the Executive Order is justification for moving forward with this, but that's not what's in statute. SB 44 last year requires a comprehensive strategy to deploy medium- and heavy-duty vehicles to bring the State into compliance with federal air quality standards and reducing motor vehicle greenhouse gas emissions. It doesn't pick winners and losers. It doesn't pick electrification. It doesn't have the language of the Executive Order. So what's before you is required in statute by SB 44. And we do

1 believe that a technology mix focused on both the near
2 term and long term, which includes low-NOx trucks would
3 benefit the state and we ask for your consideration when
4 this comes back before you at a later date.
5 Thank you.
6 BOARD CLERK SAKAZAKI: Thank you.
7 Our next speaker is Zorik Pirveysian. I have
8 activated your microphone. You can unmute yourself and
9 begin.
10 MR. PIRVEYSIAN: Good afternoon, Madam Chair and
11 Honorable Board Members. My name is Zorik Pirveysian,
12 Planning and Rules Manager with South Coast AQMD. Thank
13 you for the opportunity to comment on the 2020 Mobile
14 Source Strategy. As you know, the South Coast Air Basin
15 is facing a daunting challenge in meeting the ozone
16 standards in 2023, 2031 and 2037, which would require
17 significant levels of NOx reductions in the range of 45 to
18 65 percent beyond the existing regulations.
19 With mobile sources responsible for over 80
20 percent of NOx emissions, the mobile source strategy and
21 the subsequent State SIP strategy play a critical role in
22 meeting these standards.
23 With respect to the 2023 attainment date, we
24 recommend that the Mobile Source Strategy identify
25 specific strategies to maximize near-term reductions

toward meeting the standard. For the 2031 and 2037 attainment dates, we recommend that the Mobile Source Strategy concepts and scenarios be updated with specific strategies to the extent possible taking into consideration the commercial availability of near-zero and zero-emission technologies for various mobile source categories.

In terms of incentive funding, we recommend that funding needs for both technology demonstration and technology deployment be identified along with specific spending and funding plans to achieve the necessary near-term and long-term reductions.

Finally, given the significant contribute of federal sources and lack of federal action, we recommend that the Mobile Source Strategy consider all possible control approaches for CARB to pursue, such as maximum use of CARB's existing authority seeking new legislative authority and seeking federal funding.

We are fully committed and look forward to working closely with CARB staff in developing these strategies.

Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Jon Costantino. After Jon, we have Damian Breen, a phone number and Shayda Azamian.

1 So, Jon, I have activated your microphone. You
2 can unmute yourself and begin.
3 MR. COSTANTINO: Thank you. Good afternoon
4 Chairman Nichols and Board Members Jon Costantino speaking
5 to you today on behalf of several clients who are actively
6 looking to help solve the near-term air quality and
7 long-term GHG emission goals. These entities are leaders
8 in the liquid and gaseous fuel and feedstock industries,
9 who collectively are planning on investing hundreds of
10 millions of dollars in response to California's policies
11 to reduce GHG.
12 But this 2020 version of the Mobile Source
13 Strategy is missing any real discussion about renewable
14 and low carbon fuels, which do provide benefits today. So
15 it was good to hear Ariel commit to adding near-term
16 reductions and the ideas, and ideas in the next version.
17 How can a strategy to deal with mobile sources
18 not have a plan for innovation for cleaner combustion and
19 lower CI fuels? Where is the discussion about cellulosic
20 ethanol, renewable diesel, renewable natural gas that is
21 already on average carbon negative? Where is the
22 discussion about non-fuel technology such as CCS and
23 zero-carbon industrial steam? All of these ideas and
24 dollars are drawn to California, because of the policy
25 signal to find the most cost-effective technology-neutral

1 reductions.
2 Though the latest version has a path and
3 discussion about fuels, it is certainly not aspirational
4 or inspirational for a segment that will play a
5 significant role for the next 15 to 20 years, as the
6 Executive Order and today's slide show.
7 If you want investment to come to California and
8 then to be exported, you want to retain this investment
9 signals. Clean fuels do not hinder ZEV implementation.
10 Again, clean fuels do not hinder ZEV implementation.
11 We ask the Board to direct staff to update the
12 strategy to focus on the benefits of renewable and low
13 carbon fuels to help California get to where it needs to
14 go in the near term with air quality, and long term on
15 carbon neutrality.
16 Thank you.
17 BOARD CLERK SAKAZAKI: Thank you.
18 Our next speaker is Damian Breen. Damian, I have
19 activated your microphone. You can unmute yourself and
20 begin.
21 MR. BREEN: Good afternoon, Chair Nichols and
22 members of the California Air Resources Board. Damian
23 Breen on behalf of the Bay Area Air Quality Management
24 District.
25 The Bay Area Air District applauds the Strategy's

overall approach to requiring zero-emission vehicles and equipment where feasible. Additionally, the Air District strongly supports new stringent emission standards for small off-road engines, recreational vessels and aviation. We also support proposed new and modified regulations that will increase the use of zero-emissions technologies at warehouses, railroads and marine terminals, and the proposal to incentivize the operation of cleaner locomotives within the state and to attract cleaner vessels to our ports.

However, we are disappointed that the staff has dropped the vessel speed reduction initiative, as we believe this reduces nitrogen oxide in our coastal region.

Relative to zero-emission vehicles and low carbon fuels, the Air District recommends more aggressive standards that narrow the definition of ZEVs to fuel cell EVs and full battery electric EVs only. Also, we recommend limiting the use of bio and renewable diesels past 2030.

Even with the significant positives we see in this strategy, there is one area where it needs to be strengthened and that is in its discussion of projected future need for and use of incentives funding.

Incentives have been a core component of California's success at reducing mobile source emissions

over the past four decades. And because of their scarcity and utility, incentives need to be discussed as a strategic element of any mobile source framework. This ensures that they are coordinated and used effectively.

The Bay Area Air District believes that because of the disparity of exposure in AB 617 communities, an ongoing permanent and reliable source of funding to reduce mobile sources of emissions in those communities should be a priority. And even though it will be unpopular, the Air District believes that ARB must recommend exploring increasing current incentives by revising fees and looking for new sources of funding.

Finally, a robust discussion of incentives as part of this document should seek to develop --

BOARD CLERK SAKAZAKI: Thank you.

MR. BREEN: -- new types of incentives that would allow the State and air districts additional monetary tools --

BOARD CLERK SAKAZAKI: Last sentence, please.

MR. BREEN: -- including zero interest grants, loans, taxes and leasing instruments. Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is a phone number. When I unmute you, you should have a little chime that says your

speaker is active, so if you can unmute yourself and begin.

MR. GEORGE: Hello. This is Ranji George. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. GEORGE: All right. Thank you.

Madam Chair and Board members who are retiring, I just wanted to congratulate you for your years of service especially in the field of climate change. You brought it to the national level consciousness and we want -- I want to personally thank you and -- on behalf of all other of my friends.

My name is Ranji George. I am the ex-scientist at the South Coast AQMD. And I played a very key role a technical role to convince ARB to adopt the 1990 ZEV mandate, the two percent in the future years. And that has -- that has led to this whole battery -- flourishing of battery electric vehicles today. Thank you. I mean, even though ARB was very much opposed to considering any fuel source of gasoline and diesel, we managed to convince ARB to adopt that. Thank you for that.

And then four years later, we launched the hydrogen fuel cell project. And my concern is ARB the last 20 years have spent -- at least the State has spent with CEC 2.5 billion roughly on EV incentives.

Unfortunately, 80 percent of that incentives have gone to battery electric vehicles. As a result, fuel cell -- hydrogen fuel cell, especially in the light-duty sector has been, you know, put aside just bread crumbs for them.

As a result, when we were in the California Fuel Cell Partnership, all the eight manufacturers were committed to have fuel cell --

BOARD CLERK SAKAZAKI: You have about 20 seconds.

MR. GEORGE: Yeah. So I would urge the ARB Board to give -- be a lot more aggressive on hydrogen fuel cell and double the incentive amount for hydrogen fuel cell. It's more sustainable in the long run.

Thank you, Board members, for all your service. Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Shayda Azamian. After Shayda, we have Daniel Hubbell, Tiffany Roberts and Beverly DesChaux.

So Shayda, I have activated your microphone. You can unmute yourself and begin.

MS. AZAMIAN: Thank you, Chair Nichols, members of the Board and staff for your work in developing CARB's Mobile Source Strategy and thank you to the outgoing members for your critical work and your tenure.

My name is Shayda Azamian with the Leadership

1 Counsel for Justice and Accountability, a community-based
2 organization in the San Joaquin and Eastern Coachella
3 Valleys. As an engaged organization in the development of
4 the ACT and ACF rules, we have been encouraged to seek
5 CARB's efforts to ensure these rules are as impactful as
6 possible to disadvantaged communities.
7 Still, how exactly the benefits of these rules
8 and of CARB's great strategy will manifest in communities
9 living across the street from warehouses and distribution
10 centers is unclear. In addition to its current features,
11 we encourage CARB to adopt in its strategy coordinated
12 actions with State and local transportation and land-use
13 agencies to firmly regulate these indirect sources of
14 truck pollution.
15 Secondly, we know that zero-emission vehicles are
16 important, though not the full solution, and we are
17 pleased to see the inclusion of zero-emission public
18 transit and shared mobility in CARB's strategy. We hear
19 time and again from residents that clean, efficient and
20 reliable mobility options are a top need, things like
21 walking and biking options, electric vanpool and transit
22 that provides safe, clean connectivity to destinations in
23 a timely way.
24 Furthermore, we must continue to note that dairy
25 biogas specifically has no place in California's

zero-emission future. We are disappointed that the State and local air districts continue to push this false solution.

And lastly, the demand for AB 617 funding in hundreds of pollution-burdened communities across California is a testament to the necessity of community managed funding of clean air solutions. What has always been special about 617 is its vision for a trusted community-owned, community-building process. It has reminded us all that CARB -- how CARB manages or engages community isn't a peripheral issue. It is an exact and fundamental factor determining whether or not CARB achieves its air quality goals.

While we continue to improve the 617 program itself, we encourage CARB to uplift the learning from AB 617 and apply its community-driven practices and framework across all of CARB's work.

Thank you very much

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Daniel Hubbell Daniel. I have activated your microphone. You can unmute yourself and begin.

MR. HUBBELL: Thank you, Ryan. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. HUBBELL: My name is Daniel Hubbell and I am

1 the Shipping Emissions Campaign Manager for Ocean
2 Conservancy, a national non-profit organization with
3 offices in Santa Cruz. We're focused on science-based
4 solutions for a healthy ocean and climate and the
5 communities and wildlife that depend on both.
6 Ocean-going vessels continue to bring a
7 significant level of climate and air pollution to
8 California, America and the world. We commend CARB for
9 leading the nation and the world in setting at-berth
10 regulations that will protect front-line communities from
11 pollutants. And we urge further CARB to build on this
12 leadership and pursue an accelerated climate mitigation
13 mandate to put shipping on a pathway to zero emissions.
14 Now, this can be done by setting a carbon
15 equivalent intensity standard for ships sailing on or
16 calling at California ports. This standard will put the
17 industry on a trajectory line with the Paris Agreement and
18 in concert with ports like -- and regions like the
19 European Union help scale-up rapidly maturing true
20 lifecycle zero-emission vessels and fuels.
21 In that light, we would also draw CARB's
22 attention to the October comment letter mentioned by
23 Pacific Environment. We certainly agree that action at
24 the federal government and IMO levels are also needed, but
25 California can chart a faster course to shipping's

decarbonization with more action in its own waters today.

We urge CARB to add a zero-emission focus to ocean-going vessels in its 2020 Mobile Source Strategy and look forward to engaging on the maritime components of the strategy in the future.

Thank you for your time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Tiffany Roberts. Tiffany, I have activated your microphone. You can unmute yourself and begin.

MS. ROBERTS: Good afternoon, Board members. My name is Tiffany Roberts. I'm the Vice President of Regulatory Affairs for Western States Petroleum Association. Thank you to the Board for ensuring that staff can have an opportunity to do some of this really necessary analytical work on this very important issue. There's an urgency around this issue. And I do want to underscore that.

We have to have as many options to achieving our climate and air quality goals as possible. And WSPA continues to emphasize the need for a multi-technology analysis that assesses the potential to meet the State's climate and air quality goals using more than a single technology approach.

This analysis should include, among other

pathways, a review of the low-NOx vehicle technologies and renewable fuels. Such an analysis would allow for identification of the most expeditious and cost effective paths for achieving both near- and longer term emission reductions needed across the state, and most urgency -- most urgently in disadvantaged communities.

I'll conclude by saying thank you for your service to the those departing Board members. And for the incoming Board members, we look forward to working with you on the challenges that face us all. Thank you for the opportunity to speak today and offer this input. Have a very happy and safe holiday season.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Beverly DesChaux. After Beverly, we have Sean Edgar, Janet Dietzkamei and Tim Sasseen.

So Beverly, I have activated your microphone. You can unmute yourself and begin.

MS. DESCHAUX: Good afternoon. Beverly DesChaux, president of the Electric Auto Association, Central Coast, California. We are one of over a hundred organizations across the country -- educational organizations.

We -- Chair Nichols, we applaud all of your achievements, and we also recognize as I know that you do as well, that we need to accelerate them even more quickly

in this time of climate crisis.

I have a number of comments. One is we -- excuse me. We do not believe that hybrids are necessary. We now have -- all the vehicles have sufficient range that they have just -- they're irrelevant now. They just are keeping the oil industry in the picture and hydrogen as well. Hydrogen is like driving a vehicle twice in terms of the energy usage for that fuel production, as well as that there's no -- that the infrastructure is enormously expensive and it's not even available to people to -- for them to fuel up at home.

I urge you to not give anymore incentives to things such as CNG. Our county's bus -- bus service made the mistake of going down the path of CNG and it's been a disaster. They're breaking down all the time -- the buses a breaking down all the time leaving passengers stranded. They had to get extra mechanics. And nobody takes into account the methane leak, which is at least 11 percent, which has a 120 times the heating capacity of CO2.

Also, for addressing DACs, incentives for used EVs would be a great way to help out those communities for equity and increase the adoption of electric vehicles as well.

Norway is ahead of us by the. Way they have 49 percent passenger vehicles are EVs. They have eight

electric ferries.

BOARD CLERK SAKAZAKI: Thank you.

MS. DESCHAUX: And they have in -- in-country electric planes.

BOARD CLERK SAKAZAKI: Yes. Thank you. Yeah. Thank you.

So our next commenter is Sean Edgar. Sean, I have activated your microphone. You can unmute yourself and begin.

Sean Edgar, are you there?

Okay. We'll -- we will skip Sean Edgar for the moment.

The next speaker is Janet Dietzkamei. Janet, I have activated your microphone. You can go ahead and begin.

MS. DIETZKAMEI: Thank you. Good afternoon, Chair Nichols. I would like to quickly thank you so much for your support and for Board Members Gioia, Sheriffs and Mitchell. I will miss you and appreciate the support for those of us who have asthma.

2045 is an unreal -- it's unreal to me, because next month I shall be 76. So as an asthmatic and representing the asthmatics who are suffering from this air, we need to have the -- everything focused on cleaning the air as soon as possible.

I spend most of my year inside. I am unable to walk or ride my bike except, for a few days, of the year. I can't stand and wait for a bus, because I will not -- it will make me sick.

Fresno is the fifth largest city in California. We have new freeways, one right near where I live, that was built after we bought our home. We have the -- and just growing and growing mobile source pollution coming. More and more people are moving here. Houses go up by the hundreds in this city. We need to focus on sooner, soonest, immediate.

I appreciate the work on this. I appreciate the thoughts, but it's not going to work for me, or children, or others with respiratory diseases.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Let's go back to Sean Edgar. Sean, if you can unmute yourself, you can begin.

Sean, I've asked you to unmute yourself, if you're there.

Okay. We'll go on to the next one. Tim Sasseen. After Tim, we have David Renschler, Jason Meggs, and Tom Campbell, and then Thomas Lawson. So

So, Tim, I have activated your microphone. You can unmute yourself and begin.

1 MR. SASSEEN: Thank you. Thank you, Chair
2 Nichols, members of the Board and CARB staff for the brave
3 and impactful work you continue to do. I'm Tim Sasseen
4 with Ballard Power Systems. And we are greatly encouraged
5 to see the aggressive goals of the Mobile Source Strategy.
6 While electrification is specifically
7 highlighted, it's important to note that hydrogen is not
8 specifically named in today's presentation for heavy-duty
9 applications, despite CARB and the Energy Commission's
10 frequently acknowledged agreement that hydrogen fuel fell
11 vehicles will play a major role in the decarbonization of
12 the heavy-duty sector.
13 In fact, for the heavy-duty sector, ambiguous
14 language is used to call for the electrification of
15 everything in the use of alternative fuels only where it
16 cannot be done. A heavy dependency on grid charging Is
17 not only expensive, as shown by the Innovative Clean
18 Transit Regulation rollout plan submitted this year, which
19 I encourage you to read, but also risky in terms of
20 reliability of service.
21 In transit we see equal portions of battery and
22 fuel cell vehicle procurements being called for, in order
23 to reach its zero carbon goals. And it's time for all
24 activities at CARB to acknowledge this reality in its
25 briefings. Imaginative strategies must be envisioned to

make these aggressive goals real. For example, hydrogen is already in use in orders of magnitude greater than that of transportation, particularly in diesel desulfurization and ammonia for fertilizer production.

Mandating the use of zero carbon renewable hydrogen from renewable sources now for these industrial uses would displace over 170 million therms of fossil-derived natural gas per year by switching to renewable hydrogen for diesel refining alone.

As California phases out diesel fuel, this would make available more than enough zero-carbon hydrogen to fuel all the Class 8 trucks required by the Advanced Clean Truck Regulation by 2028, as well as being available for the difficult-to-abate sectors like marine and rail. This kind of holistic and inclusive strategy which (inaudible) sectors, must be developed and invested in to make the goals of the Mobile Source Strategy a reality.

Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speak is David Renschler. David, I have activated your microphone. You can unmute yourself and begin.

MR. RENSCHLER: My name is David Renschler. I'd like to say good afternoon to the -- Chair Nichols and the Board. I'm a -- the Fleet Division Manager for the City

of Fairfield. I'm also the legislative chairman for NorCal Municipal Equipment and Maintenance Association, otherwise known as MEMA. I represent NorCal and SoCal MEMA. Also, the National Association of Fleet Administrators, American Public Works Association, and the Sacramento and East Bay Clean Cities Coalitions.

Thank you to CARB staff for working with us on some of these regulations. I just wanted to point out a few things. We have a technician shortage right now with heavy-duty and light-duty vehicles. Going to zero emission is going to make that worse. Also, real estate is a big deal. We're going to need larger parking spaces to put electrical dispensers. Shop space, we're going through an issue right now with our shop not being compatible for electric vehicles, and what we're going to do about that.

It also takes time to put infrastructure in. You need to plan, budget for and construct. We're dealing with less gas tax money available to cities and counties due to less miles traveled and the use of alternative fuel vehicles. We're also worried about back-up power and what do we do for PSPSs and rolling power outages, when we can't charge electric vehicles due to that.

And lastly, I'd like to talk about COVID-19 and how it has caused unpredictable tax revenue for cities and

counties. And how we're going to make it possible to move forward without extra funding.

Thank for your time.

BOARD CLERK SAKAZAKI: Thank you.

We're going to try Sean Edgar next. Before we do, Dave, I noticed there's another user with your name. Do you know who that is?

MR. RENSCHLER: I do not.

CHAIR NICHOLS: Okay. We will skip him then.

Okay. Sean Edgar, go ahead and begin.

MR. EDGAR: Hi, Ryan. Can you hear me now?

BOARD CLERK SAKAZAKI: We can.

MR. EDGAR: Hi, Ryan. Thank you and thank you Chair Nichols and departing Board members for your service. And I am a signatory to the December 7th letter from the Natural Gas Coalition that was submitted and glad this is an informational item, because, as my colleague Kevin Maggay mentioned, there's a lot to do here.

And, Chair, I appreciate and respect your pre-game warm up on the subject. And, you know, burning fossil fuels is going to become obsolete. But similar to the service that you all have provided, we can only chart your future path and career path by honoring your past. And I mean -- what I mean by that is that abandoning the current low NOx efforts especially by the waste sector

1 really pulls the rug out from under early emissions
2 reductions.
3 And if I heard that less diesel pollution is
4 the -- should be the near-term objective of the Mobile
5 Source Strategy, then I think Mr. Magavern said the same
6 thing. I think Mr. Zorik from South Coast AQMD said the
7 same thing. And guess what, your friendly neighborhood
8 waste hauler that I've worked with for 20 years on
9 programs for the Board have been getting off of diesel for
10 20 years delivering low-NOx emissions in low NOx -- in
11 low-income areas throughout the state.
12 And there's a huge on ongoing investment,
13 especially with regard to Senate Bill 1383 and the
14 short-lived climate pollutants that are required under
15 that bill to divert organics from landfills. So we're the
16 organic diversion people. We're the less methane coming
17 out of landfills people. We're the take in organics, and
18 through the use of anaerobic digestion, creating a closed
19 loop carbon negative system and putting that back in the
20 collection vehicle.
21 And we realize, because we've got 20 years of
22 experience of getting off diesel that even the Executive
23 Order contemplates that it's about a 25-year timeline to
24 get to zero emission. So we're here, we're tanned, we're
25 ready, we're rested, and we're willing to work with you,

1 but we need modifications to the Mobile Source Strategy
2 that make sense.
3 Thank you for your time.
4 BOARD CLERK SAKAZAKI: Thank you. And thank you
5 for sticking with us through these technical difficulties.
6 Our last three speakers for this item are Jason
7 Meggs, Todd Campbell and Thomas Lawson. So, Jason, I have
8 activated your microphone. You can unmute yourself and
9 begin.
10 MX. MEGGS: Thank you so much. Good afternoon
11 again. This is Jason Meggs with some encouraging words
12 about bicycles. Before joining CARB, I engaged in nearly
13 two decades on California's sustainable transport policy,
14 including several years for the European Union analyzing
15 the effectiveness of greenhouse reduction through
16 transportation and land use measures, similar to our SB
17 375 efforts here.
18 While at CARB, I sought to expand California's
19 low carbon transport efforts to include tried and true
20 super low carbon and also super fun and effective options,
21 such as bicycles, electric bicycles, electric cargo
22 bicycles, and other light-weight electric vehicles, which
23 have similar range and speed to motor vehicles for a large
24 number of California's trips. A major study, in fact,
25 showed that a bicycle scenario was the only way to attain

1 our SB 375 goals.
2 At the request of the Low Carbon Fuel Standard
3 Program leadership, I analyzed and determined for CARB
4 that electric bicycles could save roughly 25 to 700 times
5 the carbon as cars, trucks and vans for performing the
6 same job. I submitted research concepts to study the
7 maximum potential for a California bicycle paradigm shift,
8 as well as the potential for direct electric drive of
9 heavy-duty vehicles providing a mass network for goods and
10 people powered by renewable energy.
11 Unfortunately, years later, it appears CARB is
12 still effectively excluding technologies such as electric
13 bicycles, giving a widespread impression of being a
14 captured agency, which we really don't want to have.
15 California is behind Europe and other states in
16 accelerating the use of electric bicycles, even as the
17 leadership today pledged to do everything we can think of,
18 claiming to pursue the cleanest technologies possible.
19 Yet, as we've heard today, we are falling far short and
20 bicycles could provide a large portion of an answer.
21 Given the cost effectiveness and incredible
22 co-benefits of increased bicycling on so many fronts, we
23 could, in fact, be purchasing electric bicycles for the
24 public and even paying them to ride them while
25 aggressively implementing safe infrastructure --

BOARD CLERK SAKAZAKI: Thank you.

MX. MEGGS: -- so everyone ages 8 to 80 and beyond will love to ride.

BOARD CLERK SAKAZAKI: Thank you.

MX. MEGGS: Please level the playing field --

BOARD CLERK SAKAZAKI: Excuse me, your time is up.

MX. MEGGS: -- in consideration of low carbon transport technologies and quick --

BOARD CLERK SAKAZAKI: Our next speaker is Todd Campbell. Todd, you can activate your microphone and begin.

MR. CAMPBELL: Thank you. Good afternoon Chair Nichols and Board members. California's air quality situation is bleak. Winning slowly is the same as losing. That was mentioned earlier today. And I said -- I thought to myself what a great statement made earlier today.

It illustrates the importance of acting sooner than later. California really shouldn't blame its 2023 woes on the Feds alone. At the beginning of the Heavy-Duty Truck Omnibus Rulemaking, staff clearly stated that trucks are the largest source of pollution under CARB's authority. And yet, there is no immediate action recommended to switch to pre-2010 trucks, which are hundreds of thousands of dirty vehicles in our

disadvantaged communities, to switch to significantly cleaner alternatives when they are banned in 2023.

If CARB does not articulate why it is critical for truck owners to buy clean trucks now, especially those that are available in the marketplace today, there's absolutely no upside for truckers to do the right thing and buy a clean truck. No clear guidance has been given.

California can walk and chew gum at the same time. Zero-emission strategies and low-NOx trucks should be complementary.

As written, this plan will not get us to attainment, even by 2031. I've already given up on 2023. We're not going to make it. Just, let's face it.

The ACT and the Heavy-Duty Truck Omnibus Rule gets you 11 tons per day of NOx emissions in the South Coast by 2031 for a basin that needs 148 tons per day in reductions and trucks are the number one source.

There's really nothing in between to accelerate emissions reductions now in this plan and there's no funding source in sight. What do we need to do? We need specific strategies in this plan that address near-term emissions needs now, particularly in our disadvantaged communities. I do not hear a real plan to tackle this crisis in our disadvantaged communities. I recommend the Board direct staff to change this.

1 Thank you.
2 BOARD CLERK SAKAZAKI: Thank you.
3 Our next speaker is Thomas Lawson. After Thomas
4 we have -- we had one more speaker with their hand raised,
5 Bill Zobel. And after that, the comments will be
6 concluded.
7 So Thomas, I have activated your microphone. You
8 can unmute yourself and begin.
9 MR. LAWSON: Good afternoon. This is Thomas
10 Lawson with the California Natural Gas Vehicle Coalition.
11 Thank you for the opportunity to wrap up these comments.
12 I know there's one more. I want to thank the Board
13 members and Chair Nichols for all their service and their
14 time. And while we have disagreed at times about the
15 direction and how some of this should be done, I
16 appreciate the opportunity to have a robust back-and-forth
17 and discussion about these -- these issues and these
18 topics.
19 You know, I think that, you know, a lot of my
20 members, the Natural Gas Vehicle Coalition, is made up of
21 about 20, 25 members that are invested in natural gas
22 vehicles here in California and have spoken on some of
23 the -- you know, the details of the Mobile Source
24 Strategy.
25 What I wanted to focus on was kind of, you know,

1 the overarching themes from what our industry cares about
2 and how we view the situation. And I think that, you
3 know, historically, we have, you know, really focused on,
4 you know, trying to get some traction on the near-term
5 focus and the near-term strategy. And to be honest, it
6 has been portrayed as an anti-EV strategy. And we don't
7 think that that's true. We think that it's a false
8 choice.
9 We really believe that we have to focus on both.
10 And I think that, you know, the legacy of the Air
11 Resources Board over the last couple of years will be that
12 we have put those markers in the sand for, you know, 20
13 and 25 years from now. And I am looking forward to now
14 focusing on what we can do between now and then. And I
15 think that's really important. And I think non-attainment
16 is really important.
17 I also think that, you know, the success of the
18 Low Carbon Fuel Standard underscores the need for a
19 multiple mix of fuels that are low and negative carbon,
20 and all of our -- what we're doing should support each
21 other. Those plans and programs should support each
22 other. And, you know, I was -- I started this job when
23 the 2016 Mobile Source Strategy came out. And this
24 current strategy is a far departure from that.
25 Looking forward to working with staff in 2021 and

1 the new Board on ironing out the wrinkles and helping to
2 address --
3 BOARD CLERK SAKAZAKI: Thank you.
4 MR. LAWSON: -- you know, some of these issues.
5 Thank you.
6 BOARD CLERK SAKAZAKI: Thank you.
7 Our last speaker Bill Zobel. I have activated
8 your microphone. You can go ahead and begin.
9 MR. ZOBEL: Thank you, Ryan. Good afternoon,
10 Board members, staff. I'm Bill Zobel, the Executive
11 Director of the California Hydrogen Business Council.
12 Thank you for taking out comments today.
13 We'd first like to start by thanking the outgoing
14 Board members and Chair Nichols for your service,
15 dedication, guidance and most importantly leadership. You
16 guys have really set the bar for the country and the
17 world. And we look forward to continue to working with
18 the legacy that you left behind and taking that to the
19 next level.
20 The Business Council would like to echo the
21 comments made by Tim Sasseen of Ballard and others that
22 were supportive of fuel cell technology. We certainly
23 would like to see a more prominent role in the Mobile
24 Source Strategy, more mention, more opportunity. We
25 believe that fuel cell technology creates a tremendous

1 potential for the Mobile Source Strategy to move to zero
2 emissions in the near term. Continued support by staff
3 and the Board in that regard.
4 I think as will be expressed here in the next
5 agenda item, we'll continue to be needed to move this
6 market forward and we look forward to working with you on
7 that.
8 I want to point one thing out. Chair Nichols, I
9 had the pleasure of listening to you this morning open the
10 VerdeXchange Conference. And one of the things that you
11 said historically about your service with regard to the
12 solar industry and where it was years ago and where it's
13 come today, I think really points to the fuel cell
14 industry as well -- and hydrogen fuel cell industry,
15 insofar as that industry, in you words, 15 years ago was
16 nowhere. It was never going to scale. And here we are
17 today with an industry that's mainstream.
18 Fuel cell technology and hydrogen technology can
19 be the same thing. With the right policies and the right
20 incentives, this technology can scale. We're seeing it
21 now in the ICT transit plans that are coming forward with
22 the increased use of hydrogen fuel cell technology in that
23 market space. And we look forward to continue to work
24 with this Board and the staff on the development and
25 implementation of that technology.

1 Thank you.
2 BOARD CLERK SAKAZAKI: Thank you.
3 Madam Chair, that concludes the list of
4 commenters for this item.
5 CHAIR NICHOLS: Great. Thank you.
6 And now, it's time to turn to the Board for some
7 discussion on this item. But maybe before I do that, if
8 the staff -- even though this is not an action regulatory
9 item, if staff wants to briefly respond to any of the
10 comments that they heard that they thought needed to be
11 responded to eight away, I'll give you the chance to do
12 that.
13 EXECUTIVE OFFICER COREY: Yeah. I'll briefly
14 touch on process and then ask if Michael Benjamin wants to
15 add, in terms of any key points that were raised, because
16 process that you touch on, Chair, is important in terms of
17 next steps, because it feeds into a number of the comments
18 that were made.
19 Following the hearing, we'll continue to work
20 with South Coast in identifying additional opportunities.
21 We flagged a few of those that need more work prior to
22 returning to the Board in early 2021. We have some more
23 workshops and process that we'll go through, one to flesh
24 out additional measures, the tons associated with those
25 measures, as well as potentially other additional

opportunities that we'll return to the Board with the modifications to the Mobile Source Strategy over the next few months -- in the spring time frame.

But with that, Michael, I know you were tracking comments as well. And to the Chair's question, any specific points raised that you could -- that you could respond to?

AQPSD CHIEF BENJAMIN: Thank you.

CHAIR NICHOLS: That's quite a backdrop.

AQPSD CHIEF BENJAMIN: That is -- that is not --

(Laughter.)

CHAIR NICHOLS: I try not to comment on people's backdrops most of the time, because I could get really hung up on it, but that's --

AQPSD CHIEF BENJAMIN: That is not --

CHAIR NICHOLS: -- amazing.

AQPSD CHIEF BENJAMIN: That is not intentional. I'm going to go off video and respond.

My apologies for that.

So I did want to just mention, in general, the comments that we've received both prior to today's Board hearing as well as today. And I think what we're hearing is a range of comments ranging from a desire for us to be more aggressive in the actions that we will be taking in the -- in the Mobile Source Strategy, as well as an

1 indication that there's a desire for us to have a scenario
2 for combustion or natural gas technologies back in the
3 Mobile Source Strategy.
4 And what we have striven to do with this document
5 is to strike a balance between the need to meet our air
6 quality commitments, as well as our greenhouse gas goals.
7 And so I think that's -- that's what the Board
8 sees in front of them today, recognizing that there is a
9 need to come back and think some more about near-term
10 benefits. We will be returning to the Board this spring
11 as we mentioned. And between now and then, we will be
12 planning to have an additional workshop and have an
13 opportunity to hear more from stakeholders and to work
14 through that process.
15 As has been mentioned by Mr. Corey, we are
16 working very closely with South Coast. And we have
17 workshops coming up, in fact, one next week that the
18 district is hosting on mobile source strategies that are
19 specific to South Coast, but that we think will benefit us
20 as we think about what we can do to strengthen the Mobile
21 Source Strategy. And we will also be continuing those
22 workshops with the District in January.
23 So we have a process for going forward. We look
24 forward to coming back to the Board with some additional
25 suggestions for near-term benefits.

1 CHAIR NICHOLS: Okay. Great. Let's start with
2 Judy Mitchell.
3 BOARD MEMBER MITCHELL: Thank you, Chair Nichols.
4 I'm encouraged to hear that -- that Mr. Corey and Mr.
5 Benjamin are working with the South Coast. I know that
6 I've checked in with our staff at South Coast from time to
7 time to see how it is going.
8 I do want to start out with a question of our
9 staff. And I come to this in light of the opening remarks
10 of Chair Nichols about the responsibility of the federal
11 government for some of what comes into our state.
12 And I think back a number of years ago at the end
13 of the Obama administration, when CARB, and the South
14 Coast and a number of other air districts and interested
15 parties and other states collaborated with us to file a
16 petition with the U.S. EPA for a low-NOx standard that was
17 national.
18 And I come to that thinking that what will happen
19 nationally? Because we -- 60 percent of the trucks that
20 come into California I am told are registered out of
21 state. And so I'm thinking where does that segment, those
22 low-NOx out-of-state trucks that may come under the
23 low-NOx Federal rule, that's what I'm referring to, how
24 can we integrate that with what we need near term in the
25 state, in South Coast, and San Joaquin? Are we missing an

opportunity if we don't take a look at that integration of what's in California and the possibility of low-NOx trucks nationally working their way into California?

I'd like staff's sort of comments about that -- that scenario.

EXECUTIVE OFFICER COREY: I'll jump on this. And Steve Cliff Deputy Executive Officer may want to add to this. But the low-NOx Omnibus Reg that the Board acted on a few months ago, that was the product clearly was a California regulation. But we've actually been working with EPA -- EPA staff, the hard working team at Office of Transportation and Air Quality for years. They've actually drafted a rule and are prepared to move forward and work very closely with us to get at that 60 percent. So our hope is with the change of administration that's imminent, that the -- the national Low-NOx Rule, a tight rule, informed by the regulation that you all worked on will move forward and it needs to move forward. It not only will benefit California with significant NOx reductions, but the entire country.

The hard working staff at EPA couldn't want anything more than this. They've done great work and have been super partners. That reg has not moved, but our expectation is shortly after January, it's going to. So I don't know, Steve, if you wanted to add anything, but I

1 wanted to get that out.
2 DEPUTY EXECUTIVE OFFICER CLIFF: I think that's
3 very comprehensive. Thank you.
4 BOARD MEMBER MITCHELL: Because when I think of
5 that, and I think of the near-term reductions that are
6 needed, and that one way to get those is through the
7 low-NOx strategy that -- and the Cummins engine that gives
8 us 0.02 grams per brake -- per brake hour is something
9 that we perhaps should be embracing with a little more
10 graciousness. And -- and in the -- also, in -- with the
11 thought that, while those trucks may be operating in
12 California in the near term, they have a broader
13 application outside of California in the long term, so
14 they wouldn't end up being stranded investments.
15 The other reason I'm thinking along these lines
16 is that it seems to me, and I grew up in the midwest in
17 Indiana, that the rest of the nation being not quite as
18 progressive as California and the west coast and even the
19 cities on the east coast, may not embrace the idea of
20 zero-emission technology as quickly as we would hope. And
21 so that is our goal here in California and we have a very
22 ambitious and bold goal to accomplish that by 2035 and
23 2045 at the latest. There is a question in my mind
24 whether the rest of the nation will be going along with
25 that.

1 So that was -- as I was sitting here listening to
2 the testimony, that was the first -- well, when Chair
3 Nichols mentioned, you know, the federal government is not
4 rising to their requirements. So anyway, that was how my
5 thinking was going on that.
6 With respect to the Mobile Source Strategy, and I
7 understand from Mr. Corey that you are now working with
8 the South Coast to identify specific strategies and to tie
9 those to a specific emission reduction in tons per day
10 that we could expect from that. And I think that is the
11 right direction, if we're going along that route.
12 The other thing I think is needed is not only to
13 tie the strategy to emission reductions amounts, but then
14 to also look at what incentives and funding would be
15 available with that strategy that help us get to that
16 specific emission reduction amount.
17 So that is -- is one of my points.
18 The other is the near-term reductions that we
19 need. And that's omitted in this plan. I think we should
20 revisit that. I also wonder whether we have met the
21 requirements of SB 44 by omitting that -- the target that
22 we have to meet in 2023 and then again in 2031. So I
23 would like our staff to take a look at that and make sure
24 we're meeting the intent and requirements of SB 44.
25 Again, there has been no discussion of funding in

the plan and I think that should be done. That should be tied in with the strategies and the expected reductions.

And then getting to hydrogen, I don't know -- I do think hydrogen is a -- is a viable technology that we ought to be looking at for long haul. And again, looking at long-haul trucks and 60 percent of those are probably registered out of state and they can come into our state. So I would like to see us look at -- at hydrogen, particularly for long -- for long-haul trucks.

So there's a lot of work to be done. This is just an information item. I understand our staff is working closely with South Coast on some of these ways to reduce emissions from our mobile sources and I'm encouraged by that. And I won't be here when this gets done, but I will obviously be paying attention and seeing how you're doing.

So thank you staff for all the work that you put if on this and for continuing to work on improving the plan. Thank you.

CHAIR NICHOLS: Okay. I will call next on our resident automotive engineering expert, Dr. Sperling.

BOARD MEMBER SPERLING: Well, thank you very much. My pleasure. This is -- this is what I wake up every morning thinking about and going to sleep probably too.

I want to say this is a great mobility plan. You know, almost all of it, I think, is pretty much exactly what we need going forward and lays it out really well, especially on the -- on the vehicle technology side of it.

Two little tiny points is, in the -- in the timeline, it talks about a 2050 goal of 80 percent reduction in 2050. I thought that is superseded by the 2045 Executive Order.

Another little point is that there's a -- the plan lays out -- it says there's a -- it calls for a -- it will lead to a 76 percent greenhouse gas reduction by 2045. You know, we're kind of shooting for zero, not 76. So I understand why it's 76 percent, but this plan, it seems like, should not just be a single set of action items or even targets. And some discussion about what it would take to actually get closer to that hundred percent or at least 90 percent I think would be appropriate for a document like this. This seems like it's a document that many people pointed out is steering the -- the thinking as well as actions that are being taken by many.

But what I really want to talk about is I think the one piece of this that falls far short of what it could be and should be, and that is the part on vehicle miles traveled reduction. The report is, in my mind, far too weak and far too unfocused on this. It lay -- at

1 least in the slides, it lays out four strategies and those
2 four strategies are either very minor or very vague.
3 And so I think we need to be thinking this much
4 more carefully and explicitly about what are the
5 strategies as well as the action items. And I realize
6 this is really hard for CARB, because much of this is not
7 under the authority of CARB. And so it does imply a lot
8 of partnerships with local governments, with other
9 agencies to really accomplish this.
10 But this is hugely important, and it's important
11 not just for greenhouse gases, not just for pollution --
12 air pollution, but it's important for a whole variety of
13 other reasons. This is the essence of creating
14 sustainable communities.
15 This is the set of actions that will accomplish
16 that. And so at a minimum, we've got to be thinking about
17 what are the right strategies. And, you know, I've spent
18 a lot of time. I've written books on this. I've talked
19 about this a lot, so I'm not going to go into it, but, you
20 know, what's missing is, you know, ideas like -- you know,
21 we've created this car-centric transportation system,
22 car-centric lifestyles. And that's marginalized -- that
23 has -- I mean, it's served us well to a point, but it
24 marginalizes many parts of our population. It results in
25 a huge cost to our society, to your economy. It uses up

huge amounts of land. There's just all kinds of reasons why that's problematic. So we need to create more choice.

And there was almost no discuss -- there's almost no discussion of what does that mean? I mean, that means everything from telecommuting, electric bikes that someone was testifying about, using transit better. Ecommerce, how do we use that in a way that actually leads to good outcomes. We need to be thinking about how do we increase the intensity of use of our vehicles, our cars, our buses. These new modes of travel that have come into existence in recent years, scooters, and bikes. Someone bought up bikes as well, dockless bikes, dockless scooters, and the mechanisms for doing this.

So this is something that CARB really needs to get focused on. And, you know, we created a whole division to address it, so I'm a little disappointed that we seem to have made so little progress along those lines.

In addition to that, some other smaller points, I didn't hear anything on aviation. And, yes, this is another issue where we have limited jurisdiction, but we do -- can do something about aviation within California. And we can be thinking about what can we do partnering, you know, with the Feds and with others.

And, for instance, even the Low Carbon Fuel Standard, we could extend that to include jet fuel used

within California. And so that would be a kind of action item we should be thinking about.

Goods movement. I think someone brought that up -- someone brought it up in terms of we shouldn't think about it in terms of VMT, because that's not exactly the right metric, but it does -- it is a surrogate measure for thinking about truck use, as opposed to just truck technology.

And, of course, again, that has implications for environmental justice. It has implications for really the -- again, the whole -- thinking about sustainability of our communities in so many different ways.

One big theme that was not mentioned, and I think this should be the lead thought for the whole mobility plan, and that is that virtually every study that's done, every analysis that's done indicates that within 5 to 10 years, following a path that we're planning to be on, our economy will be coming out ahead on electrification, on convert -- making our vehicles -- when I say electrification, I include plug-in hybrids and hydrogen.

So, you know, this is a story line, a narrative, that we need to be using, that this is -- forget climate change, forget air pollution, forget everything else, we still come out ahead just in a dollars and cents way, because we reduce the cost of energy use so much, and

reduce the maintenance, and extend the life of these vehicles. And this is a story line that we should really be highlighting.

The other thing -- another point is that someone -- actually, Judy brought it up -- Ms. Mitchell brought it up a little bit, some others did. Incentives. And Chair Nichols brought it up in her introduction. We really need to be thinking about incentives, because, yes, I just said that in 10 years, we're going to come out ahead, but that doesn't mean individuals or even companies make decisions based upon the total cost of ownership, which is what I'm really referring to as coming out ahead.

And so what -- we certainly need a lot of incentives in the next 10 years, but we need them beyond -- way beyond that too. How are we going to do that in a way that doesn't -- is not a burden on taxpayers, not a burden on government. We are pretty good at that. Our Low Carbon Fuel Standard is an example where we're funding all kinds of low carbon options without a penny coming from government or taxpayers. And there's other ideas like that that we can be pursuing and we should be pursuing.

And just to close it up, I want to say that there was no mention of the fact that the State of California has commissioned the University of California Institute of

Transportation Studies -- and that's not just my university, Davis, but it's UCLA, Berkeley and Irvine -- to be doing a decarbonization plan and recommendations for the State of California on -- for transportation.

And there's a lot of work being done. There's actually been some coordination. Rajinder Sahota has been liaison, but a lot of that knowledge doesn't seem to have leaked into the rest of this. So I think that would be -- I would -- I would offer that, at a minimum, our group should be -- and I'm helping lead it, but I'm not the leader of it.

That group should be making a briefing to the Board at a high level, but also the -- some groups like the VMT group should be meeting with CARB staff. And so I offer that up going forward on how to really improve what we're doing.

And I am finished with my tutorial. Thank you.

CHAIR NICHOLS: Thank you. I think you've raised a number of points that the staff needs to consider as they work on revising this document. It obviously is going to be revised and also transitioned in some other direction. So those are all points that were well taken.

I saw some heads nodding on screens around -- around my screen, especially on comments about hydrogen and about -- about bicycles, but also about the need for a

more robust, proactive, whatever other clichés I could use, but just a bigger consideration of what we should be doing and can be doing on the vehicle miles traveled front, and not only passenger, but freight vehicles as well. So I think those are all points that you have articulated strongly and I think -- I think you were heard.

Let's move on then next to Hector De La Torre.

BOARD MEMBER DE LA TORRE: Thank you, Chair. Thanks staff for putting this together. I want to start by saying that we had a discussion regarding small operators -- owner/operators of heavy-duty trucks. And I look forward to that discussion in the first -- hopefully, the first quarter of next year, of how -- you know, how these incentive programs can better target those small owner/operators. What other mechanisms can we come up with to support them as well, such as loan frameworks, not necessarily with our money, but whether it's the State Treasurer's Office, or others, maybe even in the private sector. A lot of these owner/operators have a hard time getting financing and so we want to make sure that they are on better footing in order to convert to zero with their heavy-duty truck purchases going forward.

The second is Project 180 -- no. Project 800, I'm sorry, which is just the very beginning step to really

1 focus CARB on getting 800 heavy-duty trucks on the road,
2 zero emission for drayage around the ports or wherever
3 they are. And that is a really exciting prospect. And
4 I'm thankful that the staff is wanting to push that
5 forward. We need to be doing more, as has been said today
6 over and over again. And I think that's a perfect way to
7 do it, to really target the users, the trucking companies,
8 and the OEMs that have these vehicles available, and then
9 put the pieces together, so that those trucks can be on
10 the road, what I call putting truck -- truckers in the
11 trucks. And we need to -- we need to start showing those
12 results.
13 And then I had two comments about the plan
14 itself. One is it was referenced earlier about our
15 Heavy-Duty Inspection and Maintenance Rule. This is the
16 Leyva legislation from a couple of years ago, SB 210. We
17 have the timeline as 23-24. I think we need to expedite
18 that. We need to queue things up working with DMV and our
19 other agency partners on focusing it. Maybe we do it as
20 a -- as a start-up in communities that desperately need
21 it, whether it's 617 communities or other impacted
22 communities next to indirect source locations to make sure
23 that we're enforcing that law by 2022.
24 It was enacted in 2019. We've been working on
25 it. We passed the rule. So I think we should work with

1 those other partner agencies to get it going in 2022 to
2 start -- you know, I've talked about it before. Driving
3 my daughter and my son to school over the years, how we
4 spot those smoking trucks and, you know, go onto the
5 website -- our website and report them. I think this goes
6 a lot further than that to really enforce by doing
7 inspections and basically a Smog Check Program for trucks.
8 And then finally, the other thing that was
9 mentioned was retiring dirty old diesel trucks. We know
10 that getting rid of the dirtiest will give us the biggest
11 bang for our buck. And so we should look at having diesel
12 trucks that reach the end of their useful life be
13 ineligible to operate in California.
14 We can't just have them, you know, being passed
15 down from owner, to owner, to owner as they get dirtier
16 and dirtier over time. We should -- we should find a way
17 to retire them. I know we have these requirements for
18 some of our incentive programs, but that needs to be our
19 priority is to get these dirtiest of the dirtiest trucks
20 off the road, maybe in the Advanced Clean Fleets Rule, you
21 know, all the -- all the levers that we have we should
22 throw at these oldest dirtiest trucks, because they are
23 impacting underserved communities in a bad way, as we've
24 seen in multiple 617 community plans.
25 Thank you.

CHAIR NICHOLS: Thank you.

Ms. Takvorian.

BOARD MEMBER TAKVORIAN: Thank you, Chair Nichols. I just would like to add to some of the comments that fellow Board members have made. I think this is a great framework for the plan. But in many areas, we just aren't going far enough and we all recognize that we need to go farther faster.

I want to particularly lift up the comments of Dr. Sperling related to VMT reduction. I think that it's not enough to relate this plan to the SCS. We really need to do some concrete, clear, measurable changes that could be reflected in this plan as well.

I particularly want to make the connection, as we have in many areas, of the relationship to the federal government, as transit is suffering so much. And we're going to see that we're going to need federal relief to really help our transit agencies, so that we can continue to really push forward with expanding transit and expanding infrastructure for pedestrian improvements, as well as biking and all the rest.

So, Dr. Sperling said it so much more eloquently than I could, but I really agree with all of that. I just want to add the need to coordinate with the Feds on that as well. I think it's really important.

1 On the heavy-duty side, particularly related to
2 goods movement, I want to say that I think we can go
3 farther faster as well. We've seen in this time of the
4 pandemic that there's been like a 30 percent increase in
5 Ecommerce for the last couple of quarters. And the
6 projections that I've looked at are that those will be
7 sustained as consumers are changing their habits for --
8 probably for good or for at least the next long period of
9 time.
10 So, of course, there's a corresponding increase
11 in emissions as those goods are shipped into our ports and
12 driven into our communities. So while the economic
13 hardship is really rampant as a result of that pandemic in
14 some areas. Some of the biggest players in this sector
15 are significantly benefiting from that transition to
16 Ecommerce. So that seems like a great target to me for --
17 for how we can do more faster.
18 So, for instance, Amazon's profits have increased
19 by nearly 40 percent in the last two quarters. So I'm
20 sure that there's opportunities there to really recognize
21 the need to go to electric there or zero emission.
22 So as CARB is on this path and I think we can be
23 more aggressive, I think we also need to offer more
24 assistance, and guidance, and push for local requirements,
25 as some have called for, particularly with Indirect Source

Rules. And I also think that the success of the 617 communities -- Community Emission Reduction Plans will be highly dependent on this. If we don't step up more assertively, let's say, those plans will fail as well. So we had evidence of that this week in San Diego at the Port of San Diego, as they were poised to approve a new lease that would have constituted a 200 percent increase in diesel trucks in portside environmental justice and 617 communities, but they thought better of it as the community and environmental, environmental justice organizations' voices were loudly opposing it.

So they're now going back to the drawing board to create meaningful ZEV requirements rather than overwhelming a community with more emissions. So that's good, but they're going to need help and I think CARB could be really helpful in helping a port or other places where there's indirect sources to really do better and craft those regulations.

I want to expand a little bit on Judy's comment related to out-of-state trucks. I absolutely agree with what you've said in regards to retirement, but I'm worried about where those old trucks and cars are going. And being from a border community, I think it's really important that we pay a lot of attention to not allowing those cars and trucks to simply go over the border into

Mexico, so that they can then return with goods and pollute our neighbors and the communities within Baja, California and other parts of Mexico.

And I'm really grateful for CARB's new San Diego-Tijuana Air Quality Task Force. And I hope that that can -- that work can be integrated with this work with the Mobile Source Strategy as well.

So I'll close there and I know it's just -- you've done a good job and we want more, more, more. But that's -- that's what we're here for. So thank you so much.

CHAIR NICHOLS: Thank you.

Supervisor Serna.

BOARD MEMBER SERNA: Thank you, Chair. And thank you for -- Mary, for earlier reminding us all that this is, at this point, kind of a living document ripe for adjustment and revision. And so I'm going to issue my comments in that same spirit to, I think, give staff something to think about in terms of having -- making the strategy much more comprehensive and stronger. And I say that with all due respect for all the work obviously that's already gone into it.

But I think certainly as my colleagues have said before me, there's room for improvement. The two areas where -- or the one area that I think could use two

1 improvements is on the environmental justice front here.
2 There's two particular suggestions I'd like to make.
3 And the first would be that, especially for
4 disadvantaged communities and communities of color, I
5 didn't hear much, if anything, about what we at CARB
6 should be doing now to incent the secondary market for
7 light-duty EVs. And I know it gets discussed now and
8 again, but I think this is probably one of the most
9 appropriate places to begin to think carefully about how
10 we can do that as it affects the ability of -- or
11 disadvantaged community constituents, communities of color
12 to have access to -- better access to EVs.
13 Of course, the prices continue to become
14 comparable to internal combustion engine vehicles, but I
15 think there's still a lot we can and should be doing to
16 incent the secondary market.
17 And then the second, and I know there's been --
18 the second thing I want to mention and suggest, and I know
19 that it's also been mentioned by others, is as it relates
20 to VMT. But my comments again are specific to VMT in
21 those disadvantaged communities. I think we can all agree
22 that much of California's disadvantaged communities are in
23 older communities.
24 And without redevelopment, as we used to know it
25 here in California, and I think it's -- we've been without

it now for almost a decade, there -- it makes it more challenging to promote investment in disadvantaged communities. It's one thing to look to strategize about how we're going to reduce vehicle miles traveled when we're talking about greenfield development and new master plans on the edges of our communities. But it's another entirely to think about how do you incent and promote investment in our -- in our urban cores and there should be just as -- just as much, if not more attention to how we're going to apply strategies in those urban cores to reduce vehicle miles traveled there, as well as in suburbia.

And so I think as Dr. Sperling mentioned, you know, how do we -- how do we work with our partner agencies perhaps to take HCD, or GO-Biz, or both and others, that we should be thinking about collectively, in terms of how do we promote and incent investment, so that we're doing transit-oriented development, as much in let's say here in Sacramento in Oak Park, as we are doing it in Rancho Cordova, which is one of our suburban cities.

So those are my two suggestions for how to make the strategy better. But again, I want to end by thanking staff for their work thus far.

Thank you.

CHAIR NICHOLS: Thank you.

Now, Dr. Balmes.

BOARD MEMBER BALMES: Thank you, Chair Nichols. And I also want to echo that I really appreciated your introductory remarks. It was nice to hear you frame things and I hope you'll be able to take that framework to Washington and help us implement it.

I think staff is going to get the message about vehicle miles traveled, because that's an area that I wanted to emphasize as well. As Ms. Takvorian said, Dr. Sperling gave us the tutorial. I won't try to be as eloquent as him, but I do think we need more specificity with regard to our VMT reduction strategies. And we need partners.

As Supervisor Serna just said, the California Transportation Commission, California Department of Housing and Community Development, GO-Biz, we need to have concrete plans, both for the urban center and for the suburban periphery.

And I want to say specifically kudos to my former student, Jason Meggs who was brave enough to, as a CARB employee, to get up and say that, you know, we need to do more about bicycles and electric bicycles. I totally agree. Jason, when he was my student was pushing bicycle transportation here in Berkeley. And we've made great strides in Berkeley. Several of my colleagues ride bikes

to work and electric bicycles. And it may not work in remote rural areas, but I think it's a real way to help with reducing vehicle miles traveled in those older urban communities.

I used to think that bicycles were just for -- you know, kind of white suburban types, but I was surprised, several years ago, pleased to hear that there's a lot of use of bicycles and the potential for electric bicycles, in terms of lower income people of color in those urban older communities that Supervisor Serna was talking about.

Yeah, the car-centric lifestyle is something we have to get rid of just like we have to get rid of fossil fuels. Dr. Sperling said it well. It's not going to happen overnight, but that's where we need to go, if we really want to meet our climate change goals.

And I don't want to go on, because mostly what I wanted to say has been said by others. But I want to emphasize the -- I think we should have a plan to have accelerated retirement of dirty diesel vehicles as Hector De La Torre said. You know, my understanding is that the typical life of a diesel truck is 18 years, 800,000 miles. And, you know, there are some 2010 vehicles that were clean, you know, a few years ago, but are no longer what we need. They'll be around for while if we don't have a

plan to retire them more quickly.

And on that note, I want to emphasize what Ms. Takvorian said, I don't want those vehicles to go to Mexico or Guatemala, where I've done a lot of work. I tell you every -- it seemed like every dirty school bus in North America was providing public transportation in Guatemala belching black smoke.

So I think our retirement plan should be to get, you know, rid of these vehicles, not to transport them to less developed countries.

So with that, I'll stop.

CHAIR NICHOLS: Maybe that there should be an X prize for the most creative reuse of a diesel truck. We could come up with a sum of money sufficient to figure out something to do with them other, than to put them by the side of the road. I know there's a huge amount of recycling that goes in that industry, I mean, of a real recycling, of turning pieces into other -- into other new pieces of equipment. But, yeah, it's got to happen. And they can't just continue to operate.

Okay. Supervisor Fletcher is next.

BOARD MEMBER FLETCHER: Thank you, Mary. I will echo but not repeat all the comments around VMT. And I think it is, as has been noted a few times, it's not just what we're doing at CARB. I think -- when you think about

where the incentives are put in place, you know, some of the thorny issues around housing, around single-family versus multi-family, those are things like we have to -- we have to finally break through in getting out of this mindset, that there's only one type of housing and it is suburban sprawl. Like, we just have to -- have to change the mindset.

And when you change that, then people will change their business models. They still figure out how to make money building something different that isn't higher density, but it's clearly not going to happen on its own. It's going to have to be pushed.

I also think that there's conversations that -- and actions, not just conversations, actions that need to happen, when we think about how MPOs fund transportation. When we go out and you're going to try and get to a two-thirds threshold, it's really incredibly hard to do, but there is no incentive to go with a transit-only measure.

Pre-COVID we were planning to go for the first time in San Diego history with a 100 percent transit ballot measure. And we were going to do it and we spent a year and a half building support, and coalitions, and stakeholders, and polling and all of that group, and then COVID happened and we couldn't.

1 But imagine if your measure was only transit and
2 not roads, but you had a lower threshold. Well, we would
3 start incentivize -- and that's not easy. None of these
4 things are easy. But again, we would start putting in
5 place the incentives for how we meet the housing goals and
6 the transportation goals.
7 And so I think it's the land use that has to be
8 tackled in a meaningful way. And some of that is going to
9 be the State is going to have to be deciding. And I say
10 this as a local government official, who does not believe
11 that land use is wired into our DNA, that it has to be a
12 local decision. Sometimes we're not -- individual
13 jurisdictions are not going to do the right thing, so
14 we've got to tackle some of those kind of sacred cows
15 around that in transit funding.
16 I wanted to mention two quick things. I've heard
17 the conversation about electric bikes and electric bikes
18 excite me. And I will tell you as a cyclist, I came to
19 them reluctantly. When they first came out, I said that's
20 cheating.
21 (Laughter.)
22 BOARD MEMBER FLETCHER: Like, that's not --
23 because I had the wrong mindset around cycling, you know.
24 (Laughter.)
25 BOARD MEMBER FLETCHER: I cycled for transit. I

1 commuted on a bike, but it was also because I was on my
2 Strava club racing my segments kind of thing. But I've
3 really come to embrace the opportunity around electric
4 bikes.
5 And I just want to share with you briefly a
6 program we launched here in San Diego, because again we
7 have an equity issue. An electric bike is great, if you
8 have $1,800 to buy an electric bike, and if you know how
9 it works, and where to get it, and how to plug it in, and
10 all the rider safety visibility stuff you need to go with
11 it. So we launched a program -- I put in money to launch
12 a program called Pedal Ahead. And we went and bought 200
13 Townie electric bikes. They're incredible. Beautiful
14 bikes. Wonderful Bikes. And we gave them out to folks in
15 underserved communities.
16 But they entered into a contract, where they
17 contractually agreed to use the bike every single day to
18 commute to work, the grocery store, one person is a
19 caregiver. They used it to go do care. And we now have
20 more than 25,000 miles have been ridden on our electric
21 bikes. Our average bike out of the 200, they're riding
22 more than 10 miles per day and they are using them. And
23 the testimonials that we're getting back from folks, who,
24 because it's an electric bike, are like I never realized I
25 could go to the grocery store and I could get back.

And I pass them sometimes on the road in City Heights. And again, you know, we had to provide some funding. But the funding is really modest when you think about the cost of potentially getting a vehicle off of the road and enabling someone to kind of do that. And so I think there's a lot of creative things. And I'm sure there's other great creative ideas out there around electric bikes. But we're really hoping this is a program that can be scaled up, and not -- where focused on underserved -- and we have 800 people on a waiting list. And again our criteria was based on income and zip code. And so those are -- those just folks. And so those are some opportunities.

The other area where I think there's an opportunity, and I've mentioned this before, and I'm open for suggestions, in the secondary mark. I don't have -- someone may have data around the secondary market on electric vehicles. I only know anecdotally they don't seem to be staying here and they don't seem to be particularly available. And I don't think we have as much concerted effort or focus as we could around getting people into the secondary market, because the reality is AB 617 communities are not going to buying brand new electric cars, even when that's the only option in 2035, because these communities tend to not buy brand new cars.

And so if we want to get the air quality benefits, and the EJ benefits, and we want to get adoption, you know, into communities -- the other thing, you could get one of these into a neighborhood and then folks realize, hey, it's not a spaceship, it's doable, you can do it, then you start to get more. But someone has to be the first one in their neighborhood to get one.

And so if anyone has ideas or suggestions around what we can do better in the secondary market for electric cars, this is an area that I'm particularly interested in, because I think it's important from an equity lens and from the totality of what we're doing.

I also worry a little bit that our focus will be so much on implementing the Executive Orders on new purchase, and that is a heavy lift, that that may suck all the oxygen out of the room and we may lose site of this. And so if anyone has ideas or suggestions, please hit me up and let me know.

And then the final point I just want to echo what Hector said about the SB 210. I don't think we need to wait four years. We've been smog checking everyone else's cars for a long time. Not an insurmountable task. It seems like something that we can get done quicker in these areas.

Thank you.

1 CHAIR NICHOLS: Great. Okay. I think we're on a
2 roll here. Dr. Sherriffs.
3 BOARD MEMBER SHERRIFFS: Rather than echo, I will
4 stick to my earlier sports theme and pile on, but briefly
5 on a couple of things.
6 You know, I certainly want to pile on Judy
7 Mitchell's comments about -- from South Coast for the
8 Central Valley, the importance of NOx, and that we do --
9 yes, we have these long-term goals that are so important
10 that we need to be achieving, but we do have the short --
11 near-term need NOx reductions that we -- we need to have
12 some serious focus on.
13 I think I'd remind people I heard, you know,
14 hydrogen, hydrogen is electric. Hydrogen is an electric.
15 So maybe we need to be sure when we talk about electric
16 that we're reminding people that means battery, that means
17 hydrogen. That's not the only thing.
18 I continue to serve on the San Joaquin Board, so
19 I will be around next year very interested in what staff
20 comes up with to help with these near-term goals.
21 And second, and last point, in terms of the VMT
22 and thinking about the importance of partnerships to
23 achieve everything that we do. You know, some of the
24 things that have been mentioned, the carpooling, the
25 E-commerce, bikes, telecommuting, those are all things

that I think most of the air districts do a little bit of, have thought a little bit about. So one of my questions, or thoughts, or encouragement for staff would be how do we get air districts more fully engaged in that? Take -- are there more opportunities there to have a bigger impact?

And in terms of engagement of local government, well, the air districts have board of supervisor members. We have city electeds. And, boy, how to engage those folks -- maybe CAPCOA is a place to chew that, think about that with the air districts how do we -- how do we utilize the expertise? Because I think by and large this Board does a pretty good job of utilizing expertise of its members, the breadth of expertise that's represented. And so thinking a little bit more about how to help the districts use the expertise, use its board members to champion many of these things.

So my thoughts on that. Thank you.

CHAIR NICHOLS: Great. Vice Chair Berg.

VICE CHAIR BERG: Well, thank you. You caught me by surprise, because I thought John Gioia was going to go next.

CHAIR NICHOLS: Well, you're ahead of him on my stack here.

VICE CHAIR BERG: Oh, great. Then I'll jump right in.

You know, I really appreciate this conversation. It is so thoughtful. And I think I'm really going to focus my comments on, to such a large extent, our world we're really preaching to the choir. And the reality is is that we have to get out and figure out how we're going to reach and win the hearts and minds of our California citizens. And it's not clear to me, and especially seeing how people responded to this pandemic, how important it's going to be to really have a plan to -- for that additional outreach, and education, and building beyond the early adopters.

The other thing I do want to bring up is I was one of very, very, very many people that drove on the Sunday after Thanksgiving from my home in Davis to my home in LA, 12 hours and 40 minutes later, I arrived. And I was just thinking about all of these cars, and there were a lot of trucks on the road as well, being all electric and specifically battery electric.

And the infrastructure we're putting in today is -- we say it's supercharged, but on my way back up on Tuesday, there were a couple of times where I was the only one charging. At Harris Ranch, for example, I was literally the only person charging. And the kilowatt hours never got above 55 kilowatts. And so that's not supercharging.

And so as we look at this infrastructure and how we are going to handle all of these vehicles, I hope we have some really, really smart people that figure out process and look at this, because I literally waited 58 minutes to go less than a mile before you went up the grapevine, because there were so many cars. Not a lot of electric cars. We had no problem. There was enough chargers, but there were so many cars, that it took literally 58 minutes to go less than a mile to get back onto the freeway. And we sure don't want that log jam under electric vehicles.

So there's a lot of work to be done. I know those aren't the types of scenarios, but I'm hoping as we coordinate with other agencies, we can really have some of these meaningful discussions, because we, in winning the hearts and minds -- our citizens really don't care what the problems are. They -- they want easy solutions and they want choices. And so we have got to make sure as we're building this new transportation, quite frankly transformation, that we don't inconvenience or just get so many negative responses that we have so much pushback.

So that is my comments and thank you, staff. This is yeoman's work and look forward to more discussions.

CHAIR NICHOLS: Great. I think the last Board

1 member on my list here to speak is Supervisor Gioia.
2 BOARD MEMBER GIOIA: I think it is. And since
3 we're all talking about electric bikes, I'm in my office,
4 there's my electric bike right there.
5 (Laughter.)
6 BOARD MEMBER GIOIA: A little publicity for
7 electric bikes.
8 Yeah. I mean, there's been so many great
9 comments. I don't want to repeat, but I just wanted to
10 either amplify or mention something that maybe wasn't
11 discussed as much in detail. Several Board members talked
12 about the importance of ensuring that low income
13 communities of color have equal access to the new
14 technology in EVs, and talked about the used vehicle
15 market as well.
16 Even if -- even with additional subsidies for
17 purchase, or loans, or lower cost for the vehicles, one of
18 the obstacles we're seeing, right, is that many -- in many
19 lower income communities, where there are many
20 multi-family residences, there's not the ability to be
21 able to charge at home. And I think we need to make that
22 much more of an investment in the -- in this plan.
23 I realize it -- we talk about it in terms of
24 charging infrastructure and really getting more -- more
25 chargers out in communities. But until we can come up

with a program to really retrofit, because it's costly, the older apartment buildings, multi-family units, where many low income residents live in many communities, until we can retrofit and have chargers, they're not going to be able to make a decision, even if they're reasonably priced.

So I just wanted to, I know we've talked about this, but make sure that that -- the strategy of doing that, because that's going to be very costly, right, to be able to retrofit older apartment buildings, because most people are going to be doing their charging at home. It is inconvenient to expect somebody to do their regular charging out at some location away from their home. So we need to focus on that. Until we do that, I think there's going to be a divide.

Second, and this is something I know I've heard Dr. Sperling talk about, you know, having more electric vehicles doesn't mean reduced vehicle miles traveled, right? And especially as we see the transition to more autonomous vehicles, that having more autonomous vehicles doesn't mean again less vehicle miles traveled.

So -- so the reduced vehicle miles traveled I think needs to be more -- how to achieve that sort of woven into the strategies of this plan. Otherwise, we're still faced, especially with more autonomous vehicles,

with a world where VMTs go up. And we're sort of seeing some evidence of that.

So those were the two points I just wanted to make, because I think everybody else covered it very -- very succinctly and very thoroughly.

CHAIR NICHOLS: Thank you. Thank you.

Back to the -- back to the final resolution then, I guess. Is there even a resolution that we have to endorse today?

No, there's just public information. Okay. Great.

I do want to say, in response to a couple of the comments that were made, we are not alone within state government, not to mention the federal government, and what we need for them to be helping us do when it comes to solving a number of these problems. I think, although it's been a little bit of a rocky start, the semiannual meetings between us and the California Transportation Commission, which handles most of the money that flows through the state for transportation purposes, for infrastructure, the CEC, which is not part of that group, but which is a critical partner when it comes to making the plans and making the investments for infrastructure, and increasingly the Department of Housing and Community Development on the housing side really need to be working

1 together more than we have in the past.
2 We have the need and we have a lot of -- a lot of
3 authority, but we don't have all the authority that we
4 would need to have, if we were really going to do the
5 master plan for electrification of our transportation
6 system, including both hydrogen and -- and battery
7 electric vehicles. We have to have partners in these
8 ventures.
9 So I want to encourage the staff to be even more
10 oriented in the direction of partnering, and coalition
11 building, and outsourcing of some of these
12 responsibilities than we have been in the past, because we
13 don't have all the tools or all the resources that we
14 possibly need for this purpose.
15 I think with that, I'm going to leave this in the
16 capable hands of the staff, and the Board, and the new
17 Board members to pick it up and to carry it on to the next
18 level. And once again thank everybody who came to
19 participate in this conversation.
20 We do have another agenda item relating to
21 transportation, although it's narrower, and that is the
22 fiscal year 2020-2021 funding plan for incentives. And so
23 I think we should be able to just roll into that, unless
24 we need a break for the court reporter. Would the clerk
25 or someone who's in the same place find out, if we need to

take a break here for five minutes or should we just continue?

CHIEF COUNSEL PETER: We're checking right now, Chair Nichols.

CHAIR NICHOLS: Okay. Thanks.

BOARD CLERK SAKAZAKI: Chair Nichols, how about we -- if it's okay, we can go through the staff presentation and then before public comment we can take a break.

CHAIR NICHOLS: Okay. All right. Take the -- do the presentation and then have a brief break. Sounds good to me.

Okay. Let's move on then.

The clean transportation a plan incentives plan is only one part of our portfolio of projects complementing the various other regulatory and planning programs that we have.

And I know that there will be comment on this item, so just to reiterate, if you do want to comment on it, please go ahead and raise your -- click the raise hand button or dial star nine, so we can be ready when we do get to the public comment time.

But I just want to sort of help set the context here. And I suspect there will be more questions about this as we go on, because frankly the situation is

1 somewhat confusing. We have a, as I said before, a
2 portfolio. The plan that we're dealing with right now is
3 unique. It only deals with funding from the Air Quality
4 Improvement Program, or AQIP. Most people don't live
5 their lives by these acronyms. And it's difficult enough
6 for us to keep them straight, imagine what it's like if
7 you're in a local agency, or in a non-governmental
8 organization, or you're in the transportation business and
9 you're trying to figure out where there are funds
10 available.
11 I know we keep trying to make this all more
12 transparent and simple, but it still remains difficult, I
13 think, to follow what's what. But for this year, we're
14 dealing with a pool of money that does not include the
15 money that we would be expecting to put in from the
16 Cap-and-Trade expenditures, because that has been held
17 back and will be dealt with by the Legislature soon, but
18 is not -- we have not yet allocated the funds even for the
19 year that we're in currently.
20 So it's a -- it's a somewhat awkward situation.
21 This -- this plan, the allocations and recommendations
22 that we're considering now, are focused on continuing the
23 momentum that has been built in prior years, so that when
24 additional funding does become available, we'll be able to
25 accelerate our efforts. And we are expecting that the

1 Legislature will act in the next session, and hopefully
2 earlier, and so the staff can come back in 2021 to bring
3 us a more comprehensive update for those funds, and to
4 show how some of these different programs work together.
5 But in the meantime, the staff is proposing that
6 the Board grant to the Executive Officer authority to
7 allocate funds from the current fiscal year low carbon
8 transportation budget, once it's appropriated, to
9 projects, so that funds can be quickly allocated once the
10 money actually is authorized for the projects that
11 critically need them.
12 Today's plan represents more investments in zero
13 emission and other clean technologies with a priority on
14 directing those funds to disadvantaged communities and
15 low-income communities and households to assure that the
16 cleanest technologies are deployed where they're needed
17 the most.
18 The proposed investments were guided by critical
19 funding needs of the existing programs. The three-year
20 plan for zero-emission vehicle markets and clean
21 transportation equity investments and the Heavy-Duty
22 Investment Strategy, or HVIP as we fondly call it, which
23 were also updated this year.
24 These multi-year strategy documents provide
25 updated technology, and market assessments, and forecast

the investments needed over the next three years to meet our overall programmatic goals for air quality and climate.

So I think, at that point, I'm about to turn it over to the staff, but I just want to say that we are making progress. We wish it was faster and we wish we had more resources to throw at it. But I think we are helping to advance the technologies that are needed. We see a growing list of partners, other agencies, and forums where these same issues are being worked on. And so I am -- I want to say that I think our investments to date have played an important role in helping to drive the progress that we see, even though we all want to do more.

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

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

As you noted, incentive programs are a critical part of CARB's comprehensive strategy to accelerate the introduction of the cleanest mobile source technologies complementing our regulatory efforts.

These incentives provide important steps to transform the transportation sector to zero tailpipe emissions powered by lowest carbon energy sources supporting the emissions reduction strategies identified in the Climate Change Scoping Plan, the State

Implementation Plans, California's Sustainable Freight Action plan, and the ZEV Action Plan, as well as the Governor's recent Executive Order calling for zero-emission transportation.

And what I've got is the investments that we'll be focusing on, really the two bins, really are one piece of the State's overall clean air, clean energy and climate investment portfolio, which includes other State and local agency investments.

So we've resigned this -- we've designed this program, so that it complements -- complements these other efforts. And as you noted, given the uniqueness of this year's health and economic crisis, this plan only addresses a portion of the funding it typically includes.

The plan aims to keep a couple of critical projects going, but recognizes that much more is needed to support our clean air and climate advancement goals.

And with that, I'll ask Andrea Morgan of the Mobile Source Control Division to give the staff presentation.

Andrea.

(Thereupon a slide presentation.)

MSCD AIR RESOURCES ENGINEER MORGAN: Thank you, Mr. Corey. Good afternoon, Chair Nichols and members of the Board. Today, we will be presenting the proposed

fiscal year 2020-2021 funding plan for clean transportation incentives.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: As we just heard in the Mobile Source Strategy, to achieve its numerous goals, the State has adopted an aggressive, multi-pronged strategy that uses incentives to complement regulatory approaches. Incentives will play a pivotal role in supporting the State's various air quality, climate change, ZEV deployments, and petroleum reduction goals.

Additionally, they will help accelerate the transition of fleets to zero emission in line with Governor Newsom's recent Executive Order.

We have also given increasing attention to the role our investments play in promoting equity and racial justice. Several projects funded by the clean transportation incentives incorporate principles from the standards from equitable investments developed and shared with us by the Greenlining Institute.

For example, our equity-focused pilot projects have included principles of supporting community-driven and multi-sector approaches and we aim to include these principles more broadly in the future.

Our incentives also produce economic returns.

They have helped draw manufacturers of clean technology to California to open or expand operations promoting economic growth and job creation within the State. And since we first came to the Board with the Clean Transportation Incentives Funding Plan 11 years ago, we have constantly reevaluated our projects and incorporated strategic changes to build on the successes of past investments, incorporate the lessons we have learned, and optimize our investments to address the state's priorities and the role these investments play within the state's broader portfolio of clean transportation investments.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN:

Traditionally, the Clean Transportation Incentives Funding Plan focuses on two funding sources, Low Carbon Transportation Investments and the Air Quality Improvement Program. And while these are important programs, they represent only a portion of the broader portfolio of funding that CARB administers to improve air quality, enhance community protection, and reduce greenhouse gas emissions.

CARB strives to maintain a balanced portfolio of available investments to meet the state's air quality and climate goals. While the Community Air Protection Program, Carl Moyer, FARMER and the VW Mitigation Trust

are not directly tied to the Clean Transportation Incentives Funding Plan, we continue to closely coordinate with these programs to make sure the investments are complementary.

Each of these programs have their own distinct goals that support the state's broader strategy. Not every program can fund every worthy technology. Maintaining the integrity of program goals is essential to ensure the State achieves both immediate air quality benefits and that it supports the innovative technologies necessary to meet the state's vision of a zero-emission economy.

And outside of CARB, other federal, State and local agencies have complementary funding sources as well. Examples of these include the California Energy Commission's Clean Transportation Program and the Strategic Growth Council's community-based projects. We coordinate with our sister agencies on these investment programs regularly.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: In the 11 years since CARB first allocated funds from AQIP, innovative clean technologies have seen tremendous growth fueled in part by the State's investments. The initial projects funded by the Clean Transportation Incentives

have become well established and serve as models for other states and countries.

CARB's investments have also supported progress towards creating high quality jobs of the future and achieving and maintaining healthy and sustainable communities for all Californians. This year, we have continued to see success in growth in our investments. To date, CVRP has issued over 400,000 rebates for clean vehicles.

Six heavy-duty demonstration and pilot projects reached a successful conclusion, providing insights on how to overcome obstacles that can be applied to larger scale. And this year saw the start of several new equity focused projects designed to provide direct benefits to residents of low-income and disadvantaged communities.

After incorporating lessons from numerous pilot projects, CARB launched the Clean Mobility Options Voucher Pilot Program, which provides voucher-based funding for technical assistance to help build community capacity, as well as funding to implement innovative community transportation options. The Clean Mobility Options Voucher Pilot advances multi-sector approaches in historically underserved communities with additional funding set aside for tribes.

The Clean Mobility in Schools Pilot Project

1 awarded $25 million to three projects at schools in El
2 Monte, San Diego, and Stockton. The Sustainable
3 Transportation Equity Project, or STEP, a new project last
4 year opened its first solicitation for $19.5 millon and
5 received requests for almost $109 million for
6 community-based projects to reduce greenhouse gas
7 emissions, increase access to clean transportation, and
8 address community transportation needs in lower income and
9 disadvantaged communities.
10 This demonstrates the significant amount of
11 interest our stakeholders have in community-based and
12 transportation-equity focused funding.
13 Finally, the Off-Road Equipment Project[SIC],
14 CORE, launched in February of this year to incredible
15 success. CORE currently includes eligible equipment from
16 13 different manufacturers and over 49 models showing just
17 how much growth has occurred for zero-emission equipment
18 and the off-road industry.
19 The project also quickly demonstrated that there
20 is significant demand for this type of zero-emission
21 equipment. After committing all $41 million of available
22 funding to over 300 pieces of equipment, CORE closed a new
23 batch of requests in August. This is only a small sample
24 of the highlights and successes our incentive projects
25 have seen over the past year. It is clear that they have

played a significant role in accelerating the deployment of advanced clean technologies helping California meet its ambitious air quality and climate goals, and promoting equity and improved access to clean transportation.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: But this year is different. We are bringing a far different funding plan to the Board than we have in previous years. Typically, our funding plans are comprised of two different funding sources, the Air Quality Improvement Program and Low Carbon Transportation Investments, which represents the larger of the two sources of funds.

This year, however, the Legislature deferred action on the Cap-and-Trade expenditure plan, which includes Low Carbon Transportation, leaving us with a much smaller pot of funds to allocate at this time.

The limited funding available force difficult decisions. We know that all of our projects would benefit from additional funds, but we have focused on the ongoing vehicle purchase incentives, which help individuals and businesses make the switch to clean vehicles and play an important role in growing the market for these technologies.

The funding can be thought of as a stopgap and we hope to provide funding to our other projects once

additional funds become available.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: For fiscal year 2020-2021, the Legislature appropriated $28.64 million in Air Quality Improvement Program funding. Staff proposes to allocate 25 million of this to HVIP and three million to Clean Cars 4 All, placing the remaining 0.64 million in a reserve for revenue uncertainty.

The AQIP appropriation is based off projected motor vehicle fee revenue. Because of the current market uncertainty. It is a prudent step to establish this reserve and CARB has taken this measure before. Staff will evaluate revenue in early 2021. If revenue is sufficient, CARB will allocate the 0.64 million, or however much is available, to either HVIP, Clean Cars 4 All, or CORE depending on project need.

We fully recognize that there is need for additional funding across all of our project categories. These proposed allocations focus on the ongoing clean vehicle purchase incentive programs that staff have determined to be in critical need of an influx of funds.

And now, I'll discuss the projects addressed in this funding plan in greater detail.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: First is

HVIP. HVIP is in critical need of additional funding having been closed to new voucher requests since November 2019 after requests exceeded the total fiscal year 2019-2020 funding allocated to the projects. HVIP plays a critical role in advancing clean technologies and preparing the markets for regulation, such as Advanced Clean Trucks and Innovative Clean Transit.

HVIP not only achieves greenhouse gas reductions, but reductions in criteria pollutants such as nitrogen oxides and particulate matter meeting the goals of AQIP. While HVIP is a first-come first-served program, about two-thirds of all vouchers have been requested in low-income and disadvantaged communities, helping to provide much needed diesel particulate matter reductions in communities facing disproportionate impacts of pollution. Staff anticipates reopening HVIP for new applications in early 2021.

In addition to the $25 million from the proposed AQIP Allocation approximately $115 million from canceled voucher requests will be available when HVIP reopens to new applications, meaning that there will be a reasonable amount of funding available. Still, with significant growth in demand in recent years and new zero-emission Class 8 trucks entering the market this year, it is not expected to be enough to meet demand.

As such, staff are proposing several changes to the project to help ease financial strain and maintain consistency of the project goals.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: The changes recommended by staff this year are consistent with HVIP's guiding principles, which staff have revisited in this year's funding plan.

The first proposed change is to simplify the existing set of vouch amount tables and reduce voucher amounts. The streamlined voucher amounts tables recognize that battery size is the largest determinant of truck and bus incremental cost and restructures voucher amounts to be based on vehicle weight rating. Generally, the voucher amount reductions represent a modest reduction of less than 25 percent.

Staff are also proposing to lower the fleet voucher cap from the current 200 vouchers per year to 30 vouchers per year. This lower cap will help HVIP to support more fleets and contribute to the goal of timely vehicle production and delivery.

Following stakeholder feedback, staff is proposing a rolling manufacturer's "soft" cap to encourage more efficient vehicle delivery while still offering the flexibility needed by advanced technology manufacturers.

A rolling cap limits the number of active vouchers, or approved vouchers that have not yet been redeemed, a manufacturer can hold at any given time. When the soft cap is reached, additional vouchers would require review by CARB staff to affirm production and delivery timing for all active vouchers from that manufacturer. Staff propose implementing a soft cap of 100 vouchers per manufacturer at any given time.

Staff are also proposing to raise the minimum gross vehicle weight rating for HVIP vehicle eligibility from 8,001 to 10,001 pounds. This change would align with HVIP's role as an incentive program for heavy-duty fleets. This potential change has been coordinated with changes proposed in CVRP. Since no commercial ZEVs have been announced in this space for the upcoming fiscal year, staff proposes to work with stakeholders in the coming year to identify all potential vehicle offerings, distinguish commercial-use vehicles from those for personal uses and determine incentive amounts. Vehicles with a significant personal use market share would be eligible for CVRP or other incentive programs.

Finally, staff are again proposing to graduate natural gas engines certified to the 0.02 NOx standard from HVIP. Last year, the Board directed staff to keep the larger 11.9 liter engine suitable for Class 8 trucks

in the program, noting that there were few zero-emission options for Class 8 trucks at that time. Now, over a year later, there are several zero-emission Class 8 options eligible for HVIP funding, including trucks from BYD, Freightliner, Lion, Kenworth and Peterbilt. More are expected to become HVIP eligible during this funding cycle.

Though we are proposing to graduate engines certified to the 0.02 NOx standard, we are also proposing to expand the current definition of near-zero emission to include engines meeting the new optional 0.01 NOx standard to incentivize development and deployment of the cleanest technologies.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: Staff also recommends that $3 million be allocated to Clean Cars 4 All. Clean Cars 4 All is a key element of our suite of equity projects and plays an important role in ensuring that clean transportation option are available to lower income Californians.

While Clean Cars 4 All does have some funds remaining from prior year's allocations, we have determined that some districts may need additional funding to be able to continue to meet demand until additional funds are available.

We will direct these funds to the air districts that demonstrate the greatest demand and need for immediate funding. This limited funding is intended to serve as a stopgap and we recognize there is a greater need for funding for Clean Cars 4 All. We hope to be able to direct fiscal year 2020-2021 Low Carbon Transportation Funding to this project once it is available.

And as a result of stakeholder comments, we are also proposing a new change to allow Clean Cars 4 All applicants to receive pre-loaded public EV charging cards in lieu of the existing home charger incentive. While this change was not included in the proposed funding plan, we believe it will support the goals of Clean Cars 4 All by providing more flexibility, particularly for those living in multi-unit dwellings or renting their homes.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: As part of this funding plan, staff also proposes targeted changes to CVRP, Clean Cars 4 All, and financing assistance. The changes recommended are limited in scope and address a variety of goals to ensure that these ongoing vehicle purchase incentives are able to run smoothly over the course of the fiscal year.

The proposed changes will help streamline requirements between complementary programs, clarify

requirements to make them more consumer friendly, and address necessary administrative changes. Staff is also proposing to increase the current range requirement for plug-in hybrid electric vehicles in CVRP to a U.S. EPA all electric range of 30 miles.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: We are also proposing several contingency measures to help keep projects running smoothly and without interruptions. These contingencies are comparable to what we had included in previous years. Specifically, staff is requesting that the Board grant the Executive Officer authority to allocate a portion of funds from the fiscal year 2020-2021 low carbon transportation budget, once appropriated, to first-come first-served projects, and to allocate funds from next year's budget, once approved, to the current year in the event the funding runs out. We will still come back to the Board next year after a full public process to allocate the majority of these funds.

Additionally, staff will utilize a transparent public work group process to help guide any adding or scaling back of funding levels, and making technical or administrative changes.

--o0o--

MSCD AIR RESOURCES ENGINEER MORGAN: While the

1 limited funding available has reduced the scope of this
2 year's plan, staff's proposal includes strategic
3 investments, targeted revisions and contingencies to keep
4 projects running as smoothly and continuously as possible
5 in the short term. The funding also supports efforts to
6 provide benefits to priority populations. Revisions
7 proposed in this year's funding plan make progress towards
8 addressing the Standards for Equitable Investments, and
9 staff will continue to strive to incorporate these
10 principles as we implement existing projects and develop
11 allocate -- and develop allocations when additional
12 funding becomes available.
13 While we know that more progress is needed on
14 this front and that additional funding is required more
15 broadly, the proposed funding plan represents a stopgap
16 and provides funds that are critically needed, so that we
17 can continue the momentum we have built in expanding the
18 market for clean vehicles.
19 --o0o--
20 MSCD AIR RESOURCES ENGINEER MORGAN: In
21 conclusion, staff recommends that the Board approve the
22 proposed funding plan with the new proposed change to
23 Clean Cars 4 All.
24 Thank you. We will now address any questions you
25 have.

CHAIR NICHOLS: Okay. Great. Board members, questions before we go to public comment on this? We do have, I think, something like 21 people who signed up to speak on this item. So just as a warning, even with two minutes, that's still a good hour by the time we actually have heard from everybody.

So maybe -- well, no, I see at least one hand up first. Okay. John, do you want to -- John Gioia, do you want to speak now or am I mistaken?

Oh, I'm wrong. I was looking at a different -- the wrong spot.

Okay. Let's go to --

VICE CHAIR BERG: So Madam Chair -- Madam Chair.

CHAIR NICHOLS: Yes.

VICE CHAIR BERG: We're going to take a break now for the court reporter.

CHAIR NICHOLS: So we were. So we were.

Thank you for that reminder.

VICE CHAIR BERG: You're welcome.

CHAIR NICHOLS: Okay. What do we do? Realistically, 10 minutes or --

VICE CHAIR BERG: Ten minutes.

CHAIR NICHOLS: Ten minutes. Okay. Synchronize your watches. Okay. We'll resume in 10 minutes. Thank you.

VICE CHAIR BERG: Thank you.

(Off record: 4:26 p.m.)

(Thereupon a recess was taken.)

(On record: 4:39 p.m.)

BOARD CLERK SAKAZAKI: Chair Nichols, we are ready to go. So we have about 30 commenters lined up to speak. Our first three are Raj Dhillon, Jaime Lemus and Steven Jimenez.

CHAIR NICHOLS: Okay. I got some chat during the break that there was some confusion about the time limit. And if I was not clear, I apologize, but I would like to request a two minute time limit on this item.

BOARD CLERK SAKAZAKI: Okay. Sounds. So, yeah, we'll put two minutes on the clock. And we will -- I will activate, Raj, your microphone and you can go ahead and unmute yourself and begin.

MR. DHILLON: Hey, can you all hear me?

BOARD CLERK SAKAZAKI: We can.

MR. DHILLON: Awesome. Thank you.

I just want to start by saying thank you, Chair Nichols and the Board, for your leadership on trying to get us to zero emissions as soon as possible. And we at Breathe Southern California appreciate and support a transition to zero emissions as soon as possible. But I I'm concerned about the 0.02 engines being excluded from

HVIP funding.

We have a diesel problem that needs to be addressed today. And our best chance for near-term emissions reductions is to continue to allow the 0.02 engines to be eligible for HVP funding. And given the timing here, the point 0.01 engine manufacturers probably won't have enough time to participate in the program this year or even next year.

And so taking all of this into consideration, we should keep the 0.02 standard for at least the time being and appreciate your time and your consideration.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Jaime. I have activated your microphone. You can unmute yourself and begin.

MR. LEMUS: Great. Thank you. Mic check. Can you hear me?

BOARD CLERK SAKAZAKI: Yep, we can.

MR. LEMUS: Great. Thank you.

Good afternoon, Chair Nichols and members of the Board. I'm Jaime Lemus. I oversee the Transportation and Climate Change Division at the Sacramento Metropolitan Air Quality Management District. I want to express my appreciation of the hard work and thoughtfulness that has been put into the funding plan by CARB staff, especially with the funding challenges.

Our region has benefited from many of these programs and we support this plan knowing that ARB and the air districts will push for additional funding. Within the Clean Cars 4 All Program, I'm glad to hear today that there is a new proposed change that allows applicants to receive pre-loaded public EV charging cards in lieu of home charger incentives. This current EVSE incentive is not viable for all the participants -- I'm sorry, the current EVSE incentive is not viable for all participants.

The participant must up-front the cost for the infrastructure, then request a reimbursement from the district. The $2,000 incentives does not typically cover the full cost associated with the charger and retrofitting an electrical system to accommodate the load required for charging.

Renters face even more challenges to install EVSE. They must work with the homeowner to get the infrastructure installed with no guarantees that they will be able to stay in a home. Participants that live in apartments cannot even apply for this incentive. Over 70 percent of our participants are renters of rooms, homes or live in multi-unit dwellings.

So we support the new change, as this would motivate participants to use electric miles instead of gasoline, and thus ensuring they are the cleanest miles.

Again, thank you, as this change will provide infrastructure access to all, instead of just a few select.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Steven Jimenez. After Steven, we have Andy Schwartz, Katrina Au and Urvi Nagrani.

Steven, I have activated your microphone. You can unmute yourself and begin.

MR. JIMENEZ: Hello. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. JIMENEZ: Perfect. Good afternoon, Chair Nichols and members of the Board. My name is Steven Jimenez. I'm a Manager for Clean Air Advocacy with the American Lung Association. Thank you so much for allowing me to participate and share our organization's input from the public meeting.

I'd like to acknowledge that the Lung Association supports the adoption of the proposed funding plan and we look forward to ongoing discussions on the roles of incentive funding as additional resources come on line -- excuse me -- next year.

We recognize that the budget poses a significant challenge and appreciate the proposal laying out a path

1 forward that prioritizes electrification and strengthening
2 requirements for eligibility. The transportation sector
3 is the largest source of air pollution in California and
4 contributes to a wide range of health problems, such as
5 respiratory and cardiovascular issues, premature death and
6 cancer.
7 Too often, these health burdens are felt within
8 our most vulnerable communities, particularly low income
9 and communities of color. And we recognize the immediate
10 need to implement clean technologies in the vehicle
11 market.
12 With that said, we support the proposal to direct
13 large portions of the funding for the Medium- and
14 heavy-duty sector through HVIP. Wide spread
15 electrification of the transportation sector, including
16 all vehicle classes, is a high priority for our
17 organization as a key to achieving clean air and climate
18 standards to benefit our most impacted communities.
19 On the light-duty sector, we greatly appreciate
20 the attention and support for the Clean Cars 4 All
21 Program. By focusing continuing funding for the program,
22 CARB is providing a critical step in ensuring and
23 equitable transition to zero-emission vehicles with
24 residents of low-income and disadvantaged communities.
25 As noted in the Mobile Source Strategy,

discussion of the combined electrification of vehicles coupled with the retirement of older, dirtier fleet is critical to protecting health in our most impacted communities. The incentive funding should support the strongest electric vehicle technologies. And we believe that the changes proposed align well with the recent actions taken by the Board to accelerate zero-emission vehicle deployment as a means for providing cleaner air for all communities.

We look forward to working with the Board and staff in the upcoming year to meet the goals outlined in the Governor's Executive Orders and improve air quality.

Thank you for your time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Andy Schwartz. I have activated your microphone. You can unmute yourself and begin.

MR. SCHWARTZ: Good evening, Chair Nichols and members of the Board. This is Andy Schwartz speaking again on behalf of Tesla. We are generally supportive of the plan and thank staff for the extensive work that went into it. That said, we do have a number of proposed changes.

First, we believe the value of HVIP vouchers should be significantly reduced beyond the modest hair cut

that staff has proposed. For this program to drive investment, funding certainty is critical. And absent deeper cuts to the voucher levels, HVIP will continue to be an unreliable source of support.

To address this, we suggest reforming how the vouchers are calculated. Specifically, the voucher a vehicle can receive should be directly tied to the size of its battery pack rather than being based on a vehicle's weight class. This would ensure the amount of incentives that any vehicle receives is proportional to the key driver of incremental cost, the battery system.

As described by staff, the plan appears to use vehicle weight class as a proxy for the size of the battery, which is not reasonable given the diversity of vehicles and battery sizes within any weight class. In the interest of promoting a level playing field, we also ask that you consider removing the modifier for Class 8 fuel cell vehicles which entitles them to twice the amount of HVIP funding per vehicle relative to battery electrics.

In the alternative, we encourage you to consider at least reducing the modifier to 25 or 50 percent. This concern also applies to CVRP where fuel cells receive more than twice the incentive than battery electrics receive.

We further recommend eliminating the manufacturer's cap in HVIP, which could constrain customer

1 choice. If a fleet operator cannot go with a preferred
2 OEM, because that OEM is capped out, they may simply not
3 to choose -- they may choose not to move forward with
4 zero-emission vehicles at all.
5 To the degree the cap is intended to ensure
6 timely delivery and prevent funds from being tied up, a
7 more straightforward approach would be to more stringently
8 enforce delivery timelines.
9 And lastly, we strongly support the increase in
10 the all-electric miles that plug-in hybrids need to
11 achieve in order to be eligible for CVRP. However, given
12 recent studies that find that the actual performance of
13 these vehicles falls well short of ideal, there's a strong
14 case for eliminating them from the program altogether.
15 We understand there may be a desire to keep them
16 in for affordability reasons. If so, we suggest ARB
17 consider limiting the eligibility of plug-in hybrids to
18 receive CVRP funds to low-income households.
19 BOARD CLERK SAKAZAKI: Thank you.
20 MR. SCHWARTZ: Thank you once again for the
21 opportunity to comment today.
22 BOARD CLERK SAKAZAKI: Thank.
23 Our next speaker is Katrina Au. I have activated
24 your microphone. You can unmute yourself and begin.
25 MS. AU: Good afternoon. My name is Katrina Au.

BOARD CLERK SAKAZAKI: Katrina, you're kind of quiet.

MS. AU: Can you hear me better?

BOARD CLERK SAKAZAKI: Yep, a little bit better.

MS. AU: Perfect.

By way of background, Agility is the leading --

BOARD CLERK SAKAZAKI: Oh, sorry. Katrina, you're kind of fading out again.

MS. AU: Hello.

BOARD CLERK SAKAZAKI: Yes. Okay.

MS. AU: Okay. Perfect.

I'm sorry. On behalf of Agility and others, we are concerned that as proposed the funding --

BOARD CLERK SAKAZAKI: Katrina. Sorry. Sorry again. You're fading out.

I recommend you can call in the call-in number on the screen and hope -- maybe your -- the telephone would be better.

MS. AU: Sure. I'll go ahead and try that.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Urvi Nagrani. After Urvi, we have Ryan Kenny, Chris Nevers and Glenn Choe.

So, Urvi, I have activated your microphone. You can unmute yourself and begin.

MS. NAGRANI: Great. I wanted to, first of all,

thank the staff for, you know, threading the line between a very hard challenge of everybody knows there's more funding needed and figuring out how to put those funds in the way that will be most effective is something that everybody is going to obviously get upset at something about it. And I think you guys did a really great job at figuring out the priorities.

I would agree that a rolling manufacturer voucher cap makes a lot of sense, because most manufacturers are limited by how much they can manufacture at any given point. And so having that rolling cap means whoever is able to manufacture soonest will be able to get that voucher.

I would not be in support of that fleet voucher cap, however, because almost every manufacturer who's trying to make it big in this industry, wants to go after the large fleets to prove that they can meet the duty cycle and then attract investment. And if you lower the amount that a fleet can get incentives, that might delay the ability for other companies to get investments. I do agree that graduating the low-NOx engines is appropriate.

And I think that the proposal of pre-loaded public EV charging cards in lieu of a home charger incentive is something that I am deeply supportive of as I was one of those electric vehicle drivers in an apartment

with no parking spot using street parking. And so if I could have used a charger voucher card, that would have been much more valuable to me than an incentive that I was not able to leverage. And I think that's true for a lot of other renters in the state.

In general, I look forward to seeing how the overall funding plan looks when the low carbon transportation dollars are released. But until then, I think this is a great plan and thank the staff for their work.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Ryan Kenny. Ryan, I have activated your microphone. You can unmute yourself and begin.

MR. KENNY: Yes. Thank you. Good afternoon, Chair Nichols and members of the Board. My name is Ryan Kenny with Clean Energy. We are very, very concerned and opposed to the removal of low-NOx trucks from the HVIP Program. Nothing has changed since the Board unanimously rejected the proposal last year. There till is not a Class 8 zero-emission heavy-duty vehicle that's going to displace diesel. Diesel will be the vehicle of choice if low-NOx trucks are not incentivized.

There have been four incentive programs in California. The CEC stopped incentivizing low-NOx trucks

a few years ago, because CARB is doing it. The -- both the Volkswagen and the V -- and the Carl Moyer Program have programmatic barriers and issues that are not driving low-NOx truck adoption. The last remaining program is HVIP. This is the last stand. And because diesel trucks are so much less expensive and because the 0.02 NOx standard is not required until 2027, there is not a near-term solution to removing low-NOx trucks -- or diesel trucks off the road, if this goes forward.

So we are asking that the Board, again, reject staff's attempt to remove low-NOx trucks from HVIP, but we are open to moving over to Carl Moyer. But the Carl Moyer program should become a viable program that's going to drive low-NOx truck adoption. Right now it does not.

So we do urge the Board to consider that. And also, at the end of the day, you know, what has been done to displace diesel in the near term? What near-term strategy does CARB have in the heavy-duty transportation space? Again, how will this drive diesel truck -- diesel truck adoption in California and what long-term solutions does the Board have for this?

Again, we urge you to reject the attempt and make sure that Carl Moyer becomes and effective program until then. Thank you.

BOARD CLERK SAKAZAKI: Thank you.

1 Our next speaker is Chris Nevers. Chris, I have
2 activated your microphone. Give us one second to put up
3 your PowerPoint.
4 MR. NEVERS: If you can't pull it up, that's
5 okay.
6 (Thereupon a slide presentation.)
7 BOARD CLERK SAKAZAKI: It's up -- it should be up
8 now. All right.
9 MR. NEVERS: All right. Chair Nichols and
10 members of the Board, thank you for the opportunity to
11 comment today. My name is Chris Nevers representing
12 Rivian.
13 Next slide, please.
14 --o0o--
15 MR. NEVERS: Rivian Automotive is an independent
16 U.S.-based California company. Our mission is nothing
17 short of keeping the world adventurous forever, forever
18 meaning good stewardship and good stewardship meaning
19 electrification in this case.
20 Next slide, please.
21 --o0o--
22 MR. NEVERS: The Clean Vehicle Incentives
23 Proposal will affect Rivian and our customers, in that we
24 will be delivering trucks the R1T pictured there,
25 full-size SUVs, the R1S, and delivery vans in mid-2021

calendar year, six or seven months away. These vehicles will be in the medium-duty vehicle class. All of our vehicles are extremely capable with the R1 towing up to 11,000 pounds and an available estimated range of 400 miles.

It's important to note that medium-duty trucks and SUVs will displace far more CO2 than smaller EVs by replacing higher emitting vehicles than small EVs might replace. Similarly, one delivery van will displace the equivalent CO2 emissions of Nearly nine passenger cars. This is in addition to displacing the stop-and-go emissions like particulate matter and NOx of delivery trucks that primarily operate in densely populated areas.

However, with medium-duty capability and emissions reductions comes a medium-duty cost. We ask the Board consider the following requests.

Next slide, please.

--o0o--

MR. NEVERS: First, postpone or allow higher MSRP caps on medium-duty vehicles newly added to CVRP. MDVs displace for more emissions than passenger car EVs. And MDVs will find second and third uses that passenger cars cannot. Provide 2B vouchers close in value to that of Class 3 and 4 to avoid upmassing. Raise manufacturer fleet voucher caps. More rebates are preferred over large

rebates. And finally, increase the number of allowed CVR rebates per buyer, if commercial vehicles are added to the CVRP.

Thank you for your time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Glenn Choe. After Glenn, we have Jarrett Stoltzfus, Noelle Baker and Max Pfeiffer. And if Katrina is there on the phone, the code to raise your hand is star nine. So if you'd do that to let us know which number you are.

So Glenn, I will activate your microphone and you can unmute yourself and begin.

MR. CHOE: Good afternoon, Madam Chair and respected members of the Board. My name is Glenn Choe and I'm with Toyota Motors North America.

I appreciate the opportunity to comment to the Board today on both the light-duty and heavy-duty incentive programs. Toyota appreciates staffs hard work in developing the light-duty funding proposal. However, Toyota would like to ask the Board to reconsider staff's CVRP proposal to increase the (inaudible) plug-in hybrid all electric range to 30 miles.

Staff's current proposal will eliminate Toyota Prius Prime from qualifications not only for CVRP but also for the additional $2,500 incentive for low-income buyers.

1 Toyota Prius Prime is one of the best selling plug-in
2 hybrids in California. It is popular because it offers
3 advanced zero-emission technology, impressive efficiency,
4 predictable reliability and good value for the money.
5 Within incentives like CVRP, the additional 2,500
6 for low-income buyers, and the newly formed Clean Fuel
7 Rewards Program, Prius Prime purchase price point can drop
8 towards the low- to mid-20 thousand dollar range, within
9 the reach of many mainstream buyers. Toyota would like to
10 request the Board to reconsider staff's CVRP proposal.
11 With regard to heavy-duty/medium-duty incentive
12 program, Toyota recognizes that there are many regulatory
13 actions planned to support zero-emission vehicle
14 introduction into Californians -- California's
15 medium-duty/heavy-duty market. Toyota is investing
16 resources to support such regulatory signals. However,
17 Toyota does recognize that there is -- need -- there needs
18 to be a parallel market signals with dedicated incentive
19 programs support -- to support regulations like the
20 hundred percent zero-emission drayage purchase requirement
21 that was discussed yesterday.
22 Currently, there are various programs available
23 to introduce zero emission into the market. However,
24 programs like CVR -- HVIP are highly popular and overly
25 subscribed and have a long waiting list. As well, the

other programs like Carl Moyer and VW Mitigation Funds are becoming quickly exhausted.

Going forward, Toyota would like to work very closely with CARB staff to consider incentive structures that would run parallel with the regulatory programs --

BOARD CLERK SAKAZAKI: Thank you.

MR. CHOE: -- that will be impacted.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Jarrett Stoltzfus. Jarrett, I have activated your microphone. You can go ahead and begin.

MR. STOLTZFUS: Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. STOLTZFUS: Great. Good afternoon, Chair Nichols and members of the Board. Thank you for the opportunity to comment on the low -- proposed Low Carbon transportation Plan. My name is Jarrett Stoltzfus, Director of Government Relations at Proterra. Proterra is a leading manufacturer of heavy-duty electric vehicles, including zero-emission transit buses and zero-emission school buses with our partner Thomas Built Buses.

Proterra has a long and successful track record of advancing zero-emission medium- and heavy-duty vehicle technology in meeting demands of fleets transitioning from

conventional to electric vehicles.

We support the proposed low-carbon transportation funding plan including the allocation for HVIP and we greatly appreciate staff's collaboration with stakeholders and the proposal given the extraordinary budget challenges and decreased funding this year.

COVID has significantly affected California's transit agencies and decreased both ridership and revenues. And the additional support for the HVIP Program will help support agencies during these challenging times. We thank ARB and the state's continued leadership to achieve transportation electrification and reach our climate and greenhouse gas reduction goals.

Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Noelle Baker. Noelle, I've activated your microphone. You can unmute yourself and begin.

MS. BAKER: Hi. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MS. BAKER: Great. Thanks. Thank you. And I'd also like to thank Chair Nichols for her years of service and the other Board members, who are moving on from this role and thank the Board for this opportunity to comment on the proposed changes to the funding plan, specifically

1 the proposed increase in the minimum plug-in hybrid range
2 needed to qualify for the Clean Vehicle Rebate Program.
3 My name is Noelle Baker and I'm a Senior
4 Regulatory Engineer at the Hyundai-Kia America Technical
5 Center. Hyundai currently offers a suite of electrified
6 vehicles for a variety of use cases including fuel cell,
7 battery, plug-in hybrid and hybrid electric vehicles.
8 We believe each of these powertrains has an
9 important role to play in an electrified future. And we
10 appreciate all the work California has done and continues
11 to do to encourage the EV market. This proposed funding
12 plan disqualifies the majority of the plug-in hybrid
13 vehicles on the market. It eliminates all but four PHEVs.
14 And importantly, it removes the most affordable vehicles,
15 those you can get for less than $30,000.
16 The plan recommends increasing the minimum
17 all-electric range, or AER, of PHEVs to 30 miles EPA AER.
18 Last year, the Board decided -- or directed staff to
19 increase the AER range from 20 to 35 miles. However, in
20 this proposal, staff changed how the range is calculated,
21 which effectively makes this increase 45 miles using
22 comparable measurements, which is much farther than the
23 Board's direction of 35.
24 While we agree with CARB's plan to continue to
25 increase minimum AER range overtime, we'd like to request

lead time before this and future changes are implemented. This proposed 15-mile increase to the minimum range is scheduled to be effective in April, which affords us no opportunity to improve the range of our vehicles to stay in the program.

We understand the funding limitations, but also believe this can be an important tool to continue to spur range improvement. We would like to suggest that staff prepare a road map for increases to the minimum AER over the next five years. This would allow auto manufacturers an opportunity to implement changes to their battery capacity. EVs are moving towards cost parity with gasoline vehicles. But while there is still a gap, we believe it's important to continue to incentivize adoption of all variants of electric vehicles.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Max Pfeiffer. After Max, we have a phone number ending in 220, another phone number and then David Yow.

So, Max, I have activated your microphone. You can unmute yourself and begin.

MR. PFEIFFER: All right. Thank you, Ryan. And thank you to those of you who heard my comment previously on -- on the other Board matter. I'm reiterating again

here where it's more applicable and really most relevant.

Really, what I'm here to talk about is the perspective of looking at vehicles by vocation. As I mentioned earlier, I'm the CEO of Maxwell Vehicles. We're a small start-up that recently moved to California and has been delivering Class 2B electric vans since 2019. And we applied for an Executive Order in 2019. So these vehicles are here and they need funding. 2B is over 50 percent of the vehicles in the HVIP's scope, commercial vehicles and so they need to be addressed.

Most commercial 2B platforms have a Class 3 variant or competing platform, though the Class 3s are typically bigger and heavier than the Class 2s. But the way we have it set up right now, the OEMs are incentivized to build bigger and heavier vehicles, because they get some, or if any, voucher for their Class 3.

And a classic example of this that we're seeing play out is Amazon with their Prime fleet, which is predominantly 2B. The Ford Transit is sold as a 2B and a 3. Amazon uses the Transit as 2B. Lightning Systems or eMotors however has electrified the transit, but as a Class 3 for Amazon, because it receives more money. So what we've done here is we've basically incentivized companies to develop bigger and heavier technology.

And the same thing happened with change in Ryder.

We recently replaced a Class 5 change van from an ex-Ryder customer with a Class 2 van that had higher performance and payload. So our advice is really to maintain the 2B funding class proportionally, so that we actually structure the adoption of these commercial vehicles as intended. Otherwise, we're just promoting Class 3 plus bigger, heavier vehicles.

And like Tesla, we think that this should be done based on pack size or other cost and performance-based metrics that really drive customer decisions. Not just weight class, but really looking at the vocation of the vehicle we're putting on the road.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is a phone number ending in 220. I have activated your speaker. Please state your name for the record and you can begin.

Phone number ending in 220, are you there? I believe the code is Star 6 to unmute.

There you go.

MS. AU: Hello. Hi. Can you hear me? This is Katrina Au.

BOARD CLERK SAKAZAKI: We can.

MS. AU: Perfect. I'm the Associate Counsel at Agility Fuel Solutions. By way of a background, Agility

is the leading global provider of highly engineered and cost effective clean fuel solutions for medium- and heavy-duty commercial vehicles, including both low-NOx and zero-emission technologies.

On behalf of Agility and other stakeholders, we are very concerned that as proposed the funding plan does not address near-term emissions reductions for reasons already mentioned regarding zero-emission Class 8 trucks not being wide spread and commercially available right now, as well as Carl Moyer not being effectively modernized to incentivize both the 8.9 and 11.9 liter engines.

We request that CARB recommit to what the Board unanimously adopted last year by keeping low-NOx engine eligibility in HVIP and further to keep all 0 -- or 0.02 low-NOx trucks powered by in-state renewable fuel in HVIP until Carl Moyer becomes a suitable program for those 8.9 liter and 11.9 liter low-NOx engines.

Thank you. And thank you, Chair Nichols and outgoing staff for your dedicated service.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is a phone number. You should get the note to unmute yourself.

Hello. You're now unmuted.

MR. GEORGE: This is Ranji George.

Hello?

BOARD CLERK SAKAZAKI: Go ahead.

MR. GEORGE: This is Ranji George. Can you hear me?

BOARD CLERK SAKAZAKI: We can. Go ahead.

MR. GEORGE: All right. Thank you. Thank you.

Thank you, Board members for considering the incentive program. Thank you for your effort to encourage ZEV technologies. My name is Ranji George. I am the -- I was the ex-scientist of South Coast AQMD. I was working in the Technology Advancement Office and my boss was Alan Lloyd, some of you may know.

We worked -- I was in it for 30 years battery, fuel cell, and natural gas. And I have concern, which I've made before. If you look at the funding from 2000, inadvertently, or perhaps not, even though we -- ARB, CEC, and State funding had given 2.5 billion for ZEV incentives, if somebody does the accounting or about 300 million of it went to fuel cell, the rest of it went to ZEVs -- I mean, the battery, so that for every $1 went to fuel cell, $8 went to batteries.

The consequences were there that almost 8 -- all the auto companies who had committed to give fuel cell cars to California in the mid-nineties where I was part of the California Fuel Cell Partnership in the formative

years, now only three companies are left who are committed in the very near future or have vehicles in the market, Hyundai, Honda and Toyota. And that's the consequence of when the fuel cell funding has shrunk so much.

So I urge you to make up for that and to bring fuel cell technology in a very big way back to California. And the way to do it --

BOARD CLERK SAKAZAKI: Twenty seconds.

MR. GEORGE: -- is if -- to set aside an equal amount of funding for battery and -- at least equal amount for batter or fuel cell. In fact, I would argue for double the incentives to make up for the loss of last 20 years.

Number two is when issue a RFP under any of this Carl Moyer, please keep the funding separate, the battery and fuel cell is separate

BOARD CLERK SAKAZAKI: Thank you. Your time has concluded.

So our next speaker is David Yow. After David, we have Anjali Deodhar, Brian Johnston and Daniel Barad.

So David, I have activated your microphone. You can unmute yourself and begin.

MR. YOW: Thank you and good afternoon, Chair Nichols, Board members and staff. I'm David Yow with the Port of San Diego for the record.

1 Thanks for the helpful presentation. We
2 recognize the funding plan is based on the fact you can
3 only work with what you have. The Port of San Diego is a
4 self-sustaining public agency, so we get that. From a
5 normal year of around $200 million budget, the adjusted
6 budget is now $149.1 million due to the unprecedented
7 revenue shortfalls and the large expense reductions we've
8 been forced to make.
9 What surprises people about the port is that
10 maritime business is just about 20 percent of the port's
11 revenue. The majority of the revenues depend on tourism,
12 recreation and hospitality industries. Those sectors are
13 experiencing historic losses from closures and shutdowns.
14 So to maintain progress on environmental goals, funding
15 support like this plan are more important than ever.
16 However, we see funding solicitations come out
17 that require a 50 percent funding match, like the recent
18 CEC/CARB grant, a program requiring a $20 million match
19 for example would cost half of our entire annual maritime
20 revenue, a much higher cost, because we don't have 12 or
21 27 terminals. We have -- we have just two.
22 We see promising new programs like CORE come out,
23 but San Diego's cargo terminal tenant applied for give
24 yard trucks and didn't receive a single one. That's a big
25 deal for a port that has only 30 yard trucks to begin

with. Regional (inaudible) is needed and CORE oversubscription shows it.

At the port, we know about doing more with less, but we still need funding that fits. So as you move forward, we ask for an inclusive and practical funding partnership. We think this means three things. Simplify the solicitations, broaden eligibility, reduce size and scope of the programs to meet seaports of all types and sizes.

We look forwarding to working with you on this and urge your partnership. Thank you for your help as you approve this funding plan today. Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Anjali. I have activated your microphone. You can unmute yourself and begin.

MS. DEODHAR: Hello. Thank you very much. My name is Anjali Deodhar and I represent a technology manufacturer Via Tec, Incorporated. We make truck electrification solutions for work trucks.

As staff mentioned earlier during the presentation, this has been an unusual year in so many different ways. We would like to thank staff who have worked diligently to ensure that continued availability of funds for critical programs. We would like to call out particularly how crucial the HVIP Program has been for

work trucks and emerging truck types, merely as it supports electrification of worksite operations, something that's not usually done in a lot of other programs.

As a business that's eligible for incentive funding, who has seen delays due to the lack of Cap-and-Trade allocation, we would like to suggest the use of HVIP funds in line with staff's recommendations, because this supports critical projects that get emission reductions quickly.

We are supportive of the manufacturer's cap, as this would open up funding for newer technologies and technology providers, such as us. We're very excited to grow in California. And like many manufacturers, the incentive dollars remain key to our ability to expand in the state.

We support -- also support the graduation of the low-NOx technologies. And we appreciate that staff has focused on solutions that cut emissions and those that support beachhead technology as well.

So thank you very much and we look forward to being a part of this going forward. Thanks.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Brian Johnston. Brian, I have activated your microphone. You can unmute yourself and begin.

MR. JOHNSTON: Thank you. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. JOHNSTON: I'm Brian Johnston of Lightning Systems, based in Loveland, Colorado. Lightning manufacturers six HVIP-eligible EV platforms for both medium- and heavy-duty trucks and buses. Lightning has delivered dozens of zero-emission vehicles in 2020 under HVIP, most of which spent extensive time on the waiting list.

I look forward to the reactivation of this industry critical program as soon as possible. We're in firm support of the proposed rolling manufacturer soft caps. These are real OEMs who are actually delivering vehicles, incentivize timely execution and pace the application of funding to avoid long waiting lists.

The key of fleet acceptance of the EV technology is lowering initial acquisition cost. The proposed voucher amounts however do not provide adequate price reduction to motivate the customer. We feel fewer total vouchers at the previous higher voucher amounts would ultimately entice more end users to purchase ZEVs.

To additionally reduce the OEM vehicle pricing in the long run, the key is volume. In order to reduce costs, OEMs must order components in bulk and manufacture vehicles in significant batches. Fleets also recognize

1 additional savings by deploying EVs in large numbers.
2 Limiting fleets to 30 total trucks annually does not
3 enable those savings.
4 We respectfully request that the Board consider
5 raising the fleet cap from 30 to 50 vehicles, as this is
6 an industry standard for volume pricing and acquisition,
7 as well as a standard fleet size for operational
8 performance evaluation.
9 Thank you for your dedication in supporting the
10 HVIP Program. It's a cornerstone in the reduction of the
11 transportation sector's largest source of harmful
12 emissions.
13 BOARD CLERK SAKAZAKI: Thank you.
14 Our next speaker is Daniel Barad. After Daniel,
15 we have Thomas Lawson, Tom Knox and Bill Magavern.
16 Daniel, I have activated your microphone. You
17 can unmute yourself and begin.
18 MR. BARAD: Thank you very much and good evening.
19 Daniel Barad on behalf of Sierra Club California again.
20 We generally support this funding proposal, recognizing
21 that this year's plan was particularly challenging, given
22 the -- well, all the challenges of 2020.
23 Given that mobile sources emit 80 percent of
24 California's smog-forming NOx emissions and 40 percent of
25 our GHG emissions, the investments in HVIP and Clean Cars

1 4 All are appropriate. This State must continue to
2 prioritize replacing the dirtiest vehicles with the
3 cleanest ones. This plan trends in the right direction by
4 graduating 0.02 NOx heavy-duty fossil-fueled trucks out of
5 HVIP eligibility. This provision will benefit public
6 health, and as you heard, it is supported by the American
7 Lung Association.
8 The plan also increases the number of
9 all-electric miles that PHEVs need to qualify for CVRP
10 incentive funds. These measures will ensure near maximum
11 climate and criteria emission reductions per dollar spent.
12 We thank the Board and staff for your work on this funding
13 plan and we look forward to working with CARB and its
14 sister agencies to continue funding the transition to a
15 hundred percent zero-emission transportation in
16 California.
17 Thank you much very much.
18 BOARD CLERK SAKAZAKI: Thank you.
19 Our next speaker is Thomas Lawson. I have
20 activated your microphone. You can go ahead and begin.
21 MR. LAWSON: Good evening.
22 CHAIR NICHOLS: Excuse me just a moment. Excuse
23 me, Mr. Lawson. I just wanted to put a flag down here in
24 terms of the -- not for you, but for the additional
25 witnesses.

Excuse me. What?

Sorry. I just wanted to ask that anyone who hasn't yet raised their hand or otherwise signaled their intent to testify would please do so now, because we're trying to get ready to round up the last part of this -- of this item. Thank you.

BOARD CLERK SAKAZAKI: Thank you, Chair.

Thomas, you can go ahead now.

MR. LAWSON: All right. Thank you. No problem.

Good evening. Thomas Lawson with the California Natural Gas Vehicle Coalition.

One of the things that I wanted to talk about is, you know, just clearing up some confusion that seems. One of the aspects of HVIP is that it's a voucher program to provide an on-hood incentive. So when a fleet goes into a dealership to purchase vehicles, they're able to get some kind of cost parity, or reduction, to be able to make this alternative fuel vehicle purchase more attractive than going with a kind of cheaper diesel counterpart.

And so, you know, when we start to talk about this program and how it is a yearly program and funded every year, you know, and we just went through an entire day of talking about nonattainment issues and near-term issues that are still yet to be realized, we have to incentivize these fleets to purchase vehicles that are

1 available right now.
2 And I think that one of the issues that seems to
3 be creating this confusion is whether or not we are using
4 the right definition of heavy-duty and what type of
5 vehicles. And what I'm talking about is a tractor-trailer
6 vehicle, usually up and down the freeways, operate in and
7 around the ports, that those are largely still diesel
8 trucks and that natural gas vehicles using renewable
9 natural gas are great ways to replace those trucks to help
10 us get to those near-term reductions.
11 We can have a conversation I think later on about
12 whether heavy duty should be, you know, 60,000 pounds,
13 10,000 pounds or 8,000 pounds. But we're talking about
14 the heaviest vehicles on the road right now. They are
15 still dominated by diesel trucks. And if we're ever going
16 to even make a dent in reaching attainment, we have to
17 replace those, not five years or 10 years from now, but
18 today.
19 And HVP is a great way to do that. And so we
20 think that the 12 liter should remain in there until tere
21 is an actual one-for-one, you know, competitive vehicle to
22 use. And so we think it's a -- it's still available --
23 BOARD CLERK SAKAZAKI: Thank you.
24 MR. LAWSON: -- and we appreciate the time.
25 BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Tom Knox. Tom, I've activate your microphone. You can unmute yourself and begin.

MR. KNOX: Good evening, Chair Nichols and Board. I'm Tom Knox of Valley Clean Air Now. I'll be brief this evening.

I'm just speaking to thank you all for Clean Cars 4 All, which has helped transform the lives of more than 3,000 San Joaquin Valley residents since 2015. The additional funding being discussed today is badly needed. We've had very strong interest this year from low income DAC residents during COVID. They're seeking out the reliability and low cost of plug-in vehicles. This funding will allow us to keep the program open.

So thank you so much for your ongoing support of Clean Cars 4 All.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Bill Magavern. After Bill, we have Eileen Tutt, Kevin Maggay and Jose Paul.

So, Bill, I have activated your microphone. You can go ahead and begin.

MR. MAGAVERN: Bill Magavern with the Coalition for Clean Air.

And we also submitted written comments. We support the proposed allocation of the AQIP funds, which will keep both HVIP and Clean Cars 4 All going at least

for a little while as a bridge until additional funds are budgeted.

We also support the proposed contingency spending authorization of the Executive Officer, so that when those funds do come over from the Legislature and the Governor through the budget process, that the projects can be continued before you adopt your next funding plan.

We also think that for Clean Cars 4 All, it's important that CARB give the air districts flexibility in spending the funds that you'e proposing to allocate today to maintain program continuity. And that flexibility would allow the districts to keep the programs alive and avoid a stop-and-start scenario that would disrupt service to disadvantaged communities.

We also agree that the new proposed EV charging card for public access makes a lot of sense. So we support that for -- it's important for renters and people living in multi-family dwellings.

We also support the HVIP voucher limits that are proposed, and the amounts, and for the numbered caps for fleets and manufacturers, to try to make that limited amount of money go as far as possible.

And we agree that the minimum electric range for plug-in hybrids should be raised to 30 miles, because the subsidies should really go to those plug-in hybrid

electric vehicles that are getting significant electric miles and really reducing emissions.

Looking to the future, we think that CVRP should transition to being for low and moderate income consumers only.

And since this is the last time this year I will address you, I wish you all Happy Holidays.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Eileen Tutt. I have activated your microphone. You can unmute yourself and begin.

MS. TUTT: Thank you. My name is Eileen Tutt. I'm with the California Electric Transportation Coalition.

First, I just have to say big thank you to Ms. Mitchell, Supervisor Gioia, Dr. Sherriffs, and, of course, Chair Nichols. I so appreciate your public service and it has been such a pleasure to work with you. I look forward to what you're going to do in the future.

In terms of the investment plan, I want to really thank the CARB exceptional staff team. Giant kudos to them. We have submitted a letter, so I'm just going to highlight a couple of things.

First with the CVRP, we are asking that you delay increasing the all-electric range for the plug-in electric hybrids for one year. We supported this increase last

year, but the economic recession and pandemic have changed the market and uptake for CVRP so dramatically that despite a lower allocation this fiscal year, the CVRP as intended will remain solvent, likely through the end of the fiscal year. No waiting list. That's an unprecedented fact in 2020, which has not been true for the last three years.

Also, the plug-in hybrids that are going to be eliminated are among the most affordable. We want to take a look at whether or not these EVs are more attractive -- more attractive to limited -- to people with limited or no access to home charging, limited access to public charging, and those eligible for the LMI programs.

On the HVIP side, we absolutely support leaving 2B trucks for commercial -- commercial purpose in HVIP and we will work with staff next year to make sure that that is the case. We definitely support graduating natural gas trucks.

The intent of HVIP is to support new innovative technologies in the market. Natural gas trucks have been on the market for over two decades and simply modifying a control technology does not rise to the definition of a new and innovative technology.

There are also VW Mitigation Funds that are available and that -- and they have been undersubscribed

for low-NOx trucks. We will continue our large coalition effort to adequately and reliably fund these very, very important clean transportation programs.

Thank you.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is Kevin Maggay. Kevin, I have activated your microphone. You can unmute yourself and begin.

MR. MAGGAY: Hi. Can you guys hear me?

BOARD CLERK SAKAZAKI: We can

MR. MAGGAY: Okay. Great. Thank you. Hi. Kevin Maggay with SoCalGas.

SoCalGas is again concerned that the 0.02 gram engine is proposed for removal from HVIP. Last year, the Board unanimously voted to keep it in HVIP for a number of reasons, including that there's no grant landing spot without modifications. And to help meet attainment in the South Coast and San Joaquin Valley where both rely heavily on incentives to make attainment.

Neither of those things have changed. No modifications were made to the program and the air districts still need funding assistance to meet attainment. We urge that the Board keep the 0.02 gram engines in HVIP until Carl Moyer or another program become suitable and until additional pots of funding are identified for the air districts to reach attainment.

As I mentioned in my earlier testimony CARB committed to turning over 33,000 heavy-duty trucks to near zero or better using incentives by 2024. CARB made this commitment in the San Joaquin Valley SIP supplement. And in this CARB committed to using existing and new funding programs to increase zero and near-zero emission trucks implementation by 2024.

The measure awe states quote, "Funding mechanisms would target technologies that meet or exceed optional low-NOx standards until implementation of a new federal low-NOx standard begins", end quote. Attainment in 2023, '24, '25, they can't be a casualty on the path to zero emissions in 2045. We still need to get near-term emission reductions, particularly for Class 8 trucks. Therefore, we ask that the 0.02 gram engine stays in the program.

And lastly, thank you, Chair Nichols, for all that you've done for ar quality throughout your career. You've pushed the envelope, you've made tough decisions, and you can truly walk out of the door here with your head held high and extremely proud of your accomplishments. And I wish you all the best in whatever you do next. And thank you to the other Board members that are leaving today, particularly Ms. Mitchell, who's been a great representative of the peninsula, the South Bay and all the

South Coast.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Jose Paul. After Jose, we have Lisa McGhee, John Costantino and Bill Zobel. So, Jose, I have activated your microphone. You can unmute yourself and begin.

MR. PAUL: Hi. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. PAUL: Great. Well, good evening, Chair Nichols and members of the Board. This is Jose Paul, Vice President for Business Development and Marketing at Phoenix Motorcars. We are a leading manufacturer of medium-duty all-electric vehicles.

Firstly, I want to thank you all for the leadership in establishing California as a leader in zero-emission transportation, and also for this opportunity to provide feedback on the proposed funding plan.

On behalf of Phoenix Motorcars, I would like to highlight the disproportionate reduction in HVIP funding for Class 4 and 5 vehicles. The reduction incentives for Class 4 and 5 is significantly higher than all the other weight classes. The base HVIP for this segment has been reduced from 80,000 to 60,000, which reflects a 25 percent

reduction. And even for the disadvantaged communities, it reduces from 90,000 to 66,000, which is a 27 percent reduction, which significantly impacts various segments, including transit agencies, airport shuttles, universities, campuses, and so on.

And this goes directly against zero-emission airport shuttle regulation and the Innovative Clean Transit Regulation. Both of these segments rely heavily on Class 4 shuttle buses, and particularly for microtransit, dial-a-ride, and paratransit services.

We urge the Board to reconsider this proposal and particularly review the reduction for Class 4 and 5 segment and try and make it in line with the reduction in other segments, which is around 10 percent. Thanks again for all your hard work and public service. We look forward to continuing to work with the board and staff in executing even deployment in the state.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Lisa McGhee. Lisa, I have activated your microphone. You can unmute yourself and begin.

Lisa, are you there?

There should be a prompt on screen to unmute yourself.

MS. McGHEE: Oh, I didn't see that.

BOARD CLERK SAKAZAKI: There you go. Okay.

MS. McGHEE: I'm with Green Power Motor Company. And it's normal business to have safety sensitive standards any mobile commercial vehicle.

It's normal for CARB to set standards in emission vehicles to support efficiency and warranties. The ZEV powertrain cert passed June 2019. Staff findings state quote, "That the industry is relatively new and is subject to many issues associated with any emerging market. There is substantial variability in vehicle quality and support. Purchasers are relatively unfamiliar with the technology and its operational impact. And there's limited information available by which to judge manufacturers. This cert will help stabilize the industry as the State rolls out its suite of heavy-duty emission measures", end quote.

We request alignment to support these higher standards. Fleets have expressed. You listened in developing the cert. Let's use it.

Recommendation one. Plus-up option for durability testing such as Altoona testing. This is the gold standard in reliability and durability testing. Two, hire funding tables for ZEV OEMs, testing and certifying to the ZEB cert. Staff found that technology failures

were repeating and you reacted by supporting OEM's testing to these higher standards. Three, correct the tables and consider the vehicle class by efficiency not just by weight or size. Find the bookends for each class and create an incentive for the most efficient based on its ratio of kilowatt hour capacity and curb weight.

Four, plus-up on advanced charging integration of inductive charging. Wireless is contactless, supports COVID, and advances medum- and heavy-duty. Five, create a high incentive count for ZEV OEMs that demonstrate high deliverable volumes. The program has failed fleets, quality OEMs and taxpayers. 1,100 vehicle vouchers remain unpaid in 2019 and until December 2020.

However, currently, all these vouchers disappeared and so did the $100 million from the program. Six, hire funding tables for small minority businesses facing ZEV mandates, COVID has had an impact on them.

BOARD CLERK SAKAZAKI: Thank you.

MS. McGHEE: Pease support them. It's time to create some standards.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Jon Costantino. Jon, I have activated your microphone. You can unmute yourself and begin.

1 MR. COSTANTINO: Great. Thank you. Good
2 evening, Chairman Nichols, members of the Board. Jon
3 Costantino speaking to you on behalf of Trillium, who is a
4 provider of heavy-duty fueling infrastructure.
5 They currently have active EV, RNG, and hydrogen
6 infrastructure projects throughout the state. When fleets
7 pick new vehicles to hit the road, Trillium will be ready
8 with the fuel. But today's focus is on the renewably
9 fueled 0.02 low-NOx engine eligibility in HVIP.
10 When preparing this testimony, I found
11 inspiration in a couple of quotes from the 2020 Mobile
12 Source Strategy that you heard about earlier today.
13 Quote, "Of CARB's many goals, the air quality
14 standards that need to be met in the next five years pose
15 immediate challenges and will drive policies for needed
16 considerable strategic investment in the transition to
17 cleaner technology".
18 Second, quote, "Scenarios also reveal that while
19 the State needs to push as hard as possible for
20 electrification, CARB needs to continue to take action to
21 reduce NOx and GHG emissions from convention vehicles --
22 new conventional vehicles".
23 These ideas are exactly why last year the Board
24 voted to modify staff recommendation and keep low-NOx
25 renewable-fueled trucks in the HVIP Program. That is what

is being asked of here today, because the benefits near term were too great to for -- to forego.

As we march towards a ZEV future, we can ensure the near-term air quality comes along for the ride. Until Carl Moyer is updated, so it can truly function as an incentive for the lowest emitting trucks in real-time -- and I encourage you Board members to insist that such an effort be restarted at the staff level -- it doesn't seem to make sense that this funding should be cutoff as an accelerated turnover of large diesel trucks in California is needed.

Finally, I want to say congratulations to Kurt Karperos for his pending retirement, Dr. Balmes for his reappointment, and a thank you to Supervisor Gioia, Ms. Mitchell and Dr. Sherriffs on their hard work, dedication and willingness to listen for so many years. And to Chair Nichols, your endless energy has been remarkable. You told me once that you got into this business to make a difference and you sure have.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Bill Zobel. After Bill, we have Erin Rodriguez, Steve Douglas and Sean Edgar.

So Bill, I have activated your microphone. You can unmute yourself and begin.

MR. ZOBEL: Thank you, Ryan. Can you hear me?

BOARD CLERK SAKAZAKI: We can.

MR. ZOBEL: Very good. Good afternoon. My name is Bill Zobel, I'm the Executive Director of the California Hydrogen Business Council. We appreciate the opportunity to make some comments here today. We did submit formal comments. We'll just point out a couple of things.

We certainly understand the fiscal difficulties of the State and really appreciate staff's efforts to spread these dollars out as far and wide as they can to try to keep the market moving forward to help the state achieve its zero-emission dowels.

Regarding what we wanted to point out specifically in our -- in our formal comments. We're a bit concerned about the CVRP change, the increase in weight limit. That program functions very well today. We really don't see a need to make a change in that weight limit. We understand why staff is doing it and some of the criteria they're going to put around it to try and differentiate between commercial and personal vehicles. And I think we all know that enforcement of that is going to be a bit difficult. So while we don't support it, if we're going to do it, we encourage you to keep an eye on it and make sure that the goals that you're trying to achieve are actually achieved at the end of the day.

The second issue is on the manufacturing caps. We do appreciate staff hearing our members' concerns about manufacturing caps and not putting any -- any manufacturing caps into this proposal. Appreciate that.

On the soft caps, we understand the goals there, we are certainly all for getting more vehicles on the road as quickly as possible. That's very important. We've all seen vehicles come in the program in the past. We're a little bit concerned about what the review process is going to look like. We just want to make sure it's flexible enough to account for unforeseen circumstances of some of our members. We certainly want to get as many of these heavy-duty models on the road as we can.

Lastly, on the voucher amounts, we very much support and are appreciative of the adder for fuel cell heavy-duty electric trucks. We think that's much needed. Staff's recognition of the technology -- technological readiness of the various opportunities that are being presented to this marketplace has been observed and noted in the proposal. So we thank you for that.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Erin Rodriguez.

Erin, I have activated your microphone. You can go ahead and begin.

MS. RODRIGUEZ: Thank you. Erin Rodriguez with

Union of Concerned Scientists.

UCS is supportive of the proposed funding plan which prioritize limited dollars to HVIP and Clean Cars 4 All. We believe changes to the HVIP Program are warranted, including the reducing vouch amounts, given the limited funding, and potentially basing incentives on battery capacity rather than weight class. In addition and with regards to CVRP, we support the transition of this project to become targeted towards low and moderate income households.

We believe that this transition will free up future low carbon transportation funding to support other equity-focused projects, such as Clean Cars 4 All and other pilots that can be scaled up, such as Finance Assistance.

Focusing CVRP on lower income car buyers will also potentially avoid the need for further restrictions on eligible vehicles, avoiding unneeded complexity in program design and administration. Re-centering low carbon transportation projects to focus more clearly on the needs of low and moderate income households and underserved communities will be a good complement to the recently launched Clean -- Clean Fuels Reward Program, which, as you know, provides an on-the-hood rebate to all new EV purchases.

Finally, I'd like to extend my deep appreciation to Chair Nichols and outgoing members for many years of service to this agency.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Steven Douglas. Steven, I have activated your microphone. We're going to put up you --

MR. DOUGLAS: Great.

BOARD CLERK SAKAZAKI: Yep.

(Thereupon a slide presentation.)

MR. DOUGLAS: Thank you. Good evening. I'm Steve Douglas with the Alliance for Automotive Innovation.

We have a couple comments about the CVRP portion of the proposed funding plan. But first, I -- we do appreciate the hard work of staff and not just this year, but over the many years of this program. The staff and this Board have done an extraordinary job developing the market for ZEVs in California. And the CVRP is really a cornerstone of that success.

So this year, the staff proposed several additional changes to the CVRP. We support all of those changes, but one.

If you could go to the next slide, please.

--o0o--

MR. DOUGLAS: We do not support this year's increase in the minimum range requirement for plug-in hybrid electric vehicles. The minimum range was just increased very substantially last year by about 70 percent. And if you look at the chart on the left, I've drawn a line through the vehicles that will be eliminated if you adopt the proposed changes.

As you can see, it eliminates the lowest priced vehicles, including every vehicle under 30,000. It dramatically reduces the options for single vehicle households and households without access to Level 2 charging. It creates market uncertainties for both the customers and for the manufacturers that are trying to develop vehicles.

And finally, the real-world data would suggest that vehicles eliminated would operate in the 40 to 50 percent of the time on electricity.

If you could go to the next slide, please.

--o0o--

MR. DOUGLAS: So we understand that the Board would like to see longer range plug-in hybrids and we support a planned increase in plug-in range. So rather than making changes on the fly without any analysis, I'd like to propose that you maintain the current requirements for the coming year and then establish biennial or annual

1 increases considering the low and moderate income uptake
2 of plug-in hybrids, the portion of travel on electricity,
3 the portion of single-vehicle households and the portion
4 of households howled with limited --
5 BOARD CLERK SAKAZAKI: Thirty seconds left.
6 MR. DOUGLAS: Okay. Thank you -- with limited
7 access to Level 2 home charging. This would allow, as my
8 colleagues have said, automakers to adjust their products
9 to meet the normal ranges.
10 Again, I sincerely appreciate your time today and
11 your work. Thank you.
12 BOARD CLERK SAKAZAKI: Thank you.
13 Our next speaker is Sean Edgar. After Sean, we
14 have four remaining speakers, Beverly DesChaux, Todd
15 Campbell, Michael Pimentel and Adriano Martinez.
16 So sean, I have activated your microphone. You
17 can go ahead and begin.
18 MR. EDGAR: Thank you. Can you hear me?
19 BOARD CLERK SAKAZAKI: We can.
20 MR. EDGAR: Yeah. Thank you, Ryan. Hi, Chair
21 and Board members. Just a quick reminder that the waste
22 industry has been a really important partner with ARB, and
23 HVIP has been a key part of our success. So, in our
24 capacity as providers of essential public service, and
25 sanitation is a definition that is included in ARB's

1 recognition that sanitation companies are a key part of
2 COVID strategy, as well as just keeping a clean and
3 healthful California, many of our companies have lost 30
4 to 50 percent of their commercial revenue as commercial
5 malls and other sources have shut down. So when our
6 customers suffer, we suffer.
7 And those decreases in revenue affect truck
8 turnover. And we'll see about 2,000 waste collection
9 vehicles may time out over the next few years relative to
10 truck and bus requirements. So if those vehicles are
11 going to be something other than diesel, a healthy HVIP
12 Program is what's going to be needed.
13 So I only have three quick items on my Christmas
14 list, so I'll make it brief. First, we'll just ask the
15 Board to recommit what you unanimously adopted last year
16 by keeping the low-NOx engine eligibility in HVIP. We'll
17 ask that we continue to function as a junior partner on
18 the low-NOx trucks using in-state renewable
19 carbon-negative fuel by keeping the 20 percent cap on
20 those.
21 And then finally, just as a program improvement,
22 what we're finding is that resources need to be added to
23 your Mobile Source Control Division. The current
24 compliance check process is unfortunately not working.
25 And what I mean by that is that early adopters of ZEV and

low-NOx approved vouchers are not getting the attention they need to get through the ARB process. And that unfortunately lends itself to several months, up to 12 months, to get vouchers paid. And so that leaves the truck dealers and the fleet owners stranded and results in less vehicles.

Thank you for your time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Beverly DesChaux. I have activated your microphone. You can unmute yourself and begin.

MS. DESCHAUX: Hi again. Beverly DesChaux, President of the Electric Auto Association Central Coast California.

Great job on the charge cards. That's a great idea for MuDs. And something that some people do is throw an extension cord out their window if they park near enough to their house when they don't have charging. Just a little thing. There is a device, which I don't know the name of, that a couple -- I don't know if it's just two or if there are a number of vehicles that can plug in and when one is done charging, it goes to the next one, so that people -- that these MuDs did not have to have a charging station for every unit that is there. So that should be known. And maybe I can get that written up for

you from our -- one of our offer electric engineers.

I want to say that I really hope that you do follow up with what's going to happen with these diesel vehicles that -- school buses and trucks that are taken out of Commission. I wasn't going to say the name, but I am because you're on the call. The founder of Proterra said that they were sending those school buses to the third world, because they're not our children, so they weren't concerned about the pollution that was -- that those children were getting.

So what I would recommend is that the moving parts, the engine and the drive train be taken out and put into metal recycling and have them be homes for the homeless. I suggested this to our city and they kind of freaked out because they want them to go away.

I want to say to -- oh, let me tell you that used EVs, you can get between 6 to 15 thousand dollars with less than 30 to 40 thousand miles on them. And mine has been on the road for seven years and still has more range than what was guaranteed by the manufacturer.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Todd Campbell. Todd, I have activated your microphone. You can go ahead and begin.

MR. CAMPBELL: Good evening. Todd Campbell with Clean Energy.

I just wanted to quickly voice my -- our support for maintaining the 0.02 gram low-NOx truck in the -- in the trans -- Clean Transportation Incentive Program for all the reasons that Jon Costantino outlined.

Additionally, you know, staff, you know, recommending that low-NOx trucks that meet the brand new standard that we adopted in August under the Heavy-Duty Truck Omnibus Regulation, that -- that -- that's a high call of order. No manufacturer can certify an engine to a standard that was adopted in August.

Certifying an engine takes significant resources and time to make sure it meets the State's robust standards. And, you know, there was a real commitment also I want to just, you know, make you aware of that was made by senior staff to find a landing spot in the low-NOx -- for low-NOx trucks in the Carl Moyer Program. And sadly, that landing spot was not identified, despite a lot of work on both sides. And, you know, I feel like there should have been a greater commitment. Unfortunately, it didn't happen.

But in the meantime, we have a lot of trucks on California's roads, up to 200,000, some of which are at the Ports of LA and Long Beach, that need to be removed by 2023. And they're mainly operated by low-income drivers who don't have a lot of means and wherewithal to get into

a clean trucks. What happens to those trucks?

Unfortunately, if we don't give flexibility and we don't make one of the most cost-effective alternatives that provides zero-emission like performance, but also deep carbon reductions as an available option, we are not going to make it. And as I said, I doubt we're going to get to 2031, especially given what's been put on the table. So thank you for your time.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Michael Pimentel. I have activated your microphone. You can go ahead and unmute yourself and begin.

MR. PIMENTEL: All right. Well, thank you so much. Madam Chair and Board members, Michael Pimentel, Deputy Executive Director of the California Transit Association.

As you discussed earlier this year, transit agencies are in crisis because of the COVID-19 pandemic. And we anticipate that this crisis will unfortunately have long-term negative ramifications on the ability for our transit agencies to aggressively pursue zero-emission bus technologies absent targeted funding support from the State.

Now, we understand fully that the changes to the program proposed by staff are being pursued to account for

1 the program's funding shortfalls. However, we are
2 slightly concerned that these changes may ultimately
3 compromise funding support for transit agencies in a very
4 difficult time.
5 We therefore request that the Board, in moving
6 this plan forward, direct staff to monitor how these
7 changes impact access to HVIP vouchers for transit
8 agencies and request that the Board reevaluate these
9 changes as they ultimately prove to disadvantage
10 zero-emission transit bus deployment.
11 Additionally, when more significant funding is
12 ultimately provided by the Legislature to ARB for programs
13 like HVIP, we would request that the Board consider
14 creating a set-aside within HVIP for transit agencies
15 specifically. This would ensure that these public
16 entities that have inherently longer procurement cycles
17 relative to private entities receive the funding support
18 they need to meet their ambitious, clean bus-deployment
19 goals.
20 In closing, I just want to thank you, Madam Chair
21 and Board Members Mitch and Gioia and Sherriffs for your
22 support for our industry and for your even-handed approach
23 to working with us throughout the years. Me and my
24 members really do appreciate it. And we all wish you well
25 in whatever comes next.

Happy Holidays.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Adriano Martinez. I have activated your microphone. You can go ahead and begin.

MR. MARTINEZ: Good evening, Chair Nichols and members of the board. First off, I want to thank Chair Nichols and all the outgoing Board members for their service. This is a really important agency working on some of the most important issues in California. I'm here today to speak on behalf of the Los Angeles County Electric Truck and Bus Coalition, which Earthjustice is a member of. And our coalition works to advance the adoption of zero-emission buses, trucks and other vehicles over polluting fossil fuel vehicles and create equitable economic growth and quality local jobs through these vehicles and associated infrastructure.

And I'll be very quick. We support moving forward with investments in zero emissions. We think that is the right move given the scarce public funds. When we look at attainment and the path ahead, we only see that path going through zero emissions and we are concerned about investments in fossil fuel and other combustion technologies.

The other recommendations we made in our letter was that increase the vouchers for HVIP for projects

1 benefiting disadvantaged communities.
2 And then finally, we just want to express our
3 support for the Clean Cars 4 All Program. As you've
4 heard, it's an excellent program and a vitally important
5 one.
6 I want to thank everyone for all their work.
7 It's been an amazing year as far as progress on zero
8 emission, particularly in the freight sector. And we're
9 looking forward to working with all of you again next
10 year.
11 Thank you.
12 BOARD CLERK SAKAZAKI: Thank you.
13 We had one last person with their hand up, Matt
14 Miyasato. Matt, I have activated your microphone. You
15 can unmute yourself and begin.
16 DR. MIYASATO: Great. Thanks, Ryan. So good
17 evening, Madam Chair and members of the Board. I'm Matt
18 Miyasato the Chief Technologist for the South Coast Air
19 Quality Management District.
20 Let me first say thank to you, Chair Nichols, and
21 to Mayor Judith Mitchell for all your service at the State
22 and also for helping to clean up the air in the South
23 Coast.
24 This last item can be a parting gift that you
25 give to the 17 million residents within the South Coast

region by not graduating, you know, taking the 0.02 gram engine out of HVIP. You know, you heard the Mobile Source Strategy, and we would agree with the Bay Area, Dan Sperling and Judy Mitchell where they identified that incentives is a critical pieces of the attainment strategy. You know, we came to that same conclusion at our 2016 AQMP, where we identified billions of dollars of incentives are necessary to replace the trucks to get to attainment.

And here, we have an incentive program, which you're taking that tool out of our toolbox. So we really urge you to keep the 0.02 gram 8.9 liter and 12 liter in the program, until a 0.01 gram engine is available or zero-emission technologies are widely available. You know, we -- no one wants zero emission more than us in the South Coast, but right now they're just not widely available and ready for deployment.

We appreciate working with your staff on the Mobile Source Strategies to identify what those solutions could be. But it seems like we're foreclosing a partial collusion prematurely. So help us clean up the air today, keep the 0.02 gram 90 percent cleaner engine within the program.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Madam Chair, that concludes the list of speakers for this item.

BOARD CLERK SAKAZAKI: Madam Chair, you are muted.

CHAIR NICHOLS: Thank you.

Thanks, Ryan. And thanks to all who testified. We have a very wide array of viewpoints that were represented here and two of the almost diametrically opposed that came at the -- at the very end there. And I think it illustrates some of what our staff was grappling with as they tried to develop a funding plan, which with far from enough money, can't be all things to all people or even satisfy all of the major interest groups.

So there is a philosophy behind what they've proposed. And I tried to articulate that at the beginning of the comments on the -- on the Mobile Source Plan, but, of course, we're not there yet -- the Mobile Source Strategy, I should say, the previous item.

So I think I'm just going to turn to, first, the staff if they want to respond to any of what they heard here, either to defend themselves or to explain what they've done, if they think it hasn't been properly characterize and then quickly move to Board member comments and hopefully wrap this item up.

EXECUTIVE OFFICER COREY: Thanks, Chair. I'm

1 going to go to Dr. Sydney Vergis to work through some of
2 the responses to a few of the keep points raised.
3 So Sydney.
4 MSCD DIVISION CHIEF VERGIS: Thank you, Chair
5 Nichols and Board members. I've heard several themes
6 today related to a couple different of programs, HVIP,
7 CVRP and Carl Moyer. And I'm happy to go through those.
8 One thing I do want to underscore is what Ms.
9 Morgan described during her presentation earlier, which is
10 that the item before you today is specifically aimed at
11 accelerating bringing to market those technologies that
12 are as clean as possible, as soon as possible, to really
13 provide those health benefits and air pollution relief to
14 communities.
15 So I'll start with HVIP. Based on the comments
16 that I heard related to the inclusion of combustion
17 technologies in the HVIP Program, there are a number of
18 programs, in addition to HVIP that support heavy-duty
19 combustion technologies. So as a sampling and specific to
20 natural gas trucks, under the Carl Moyer and AB 617
21 Community Air Protection Program, combustion trucks can
22 receive up to a hundred thousand dollars. Under the VW
23 Mitigation Trust, they can receive up to $85,000. Low-NOx
24 trucks have been and continue to be eligible under staff's
25 proposal under HVIP.

1 And other incentive programs include the Truck
2 Loan Program, which helps small fleets get access to
3 financing to get into combustion trucks that are compliant
4 with the Truck and Bus Regulation. And now they're at the
5 new incentives built into the Omnibus Regulation for
6 manufacturers that bring cleaner combustion technologies
7 to market faster than required.
8 I'd also like to note, there are other upcoming
9 opportunities. There's another big VW solicitation for
10 combustion, including heavy-duty trucks, coming up. And
11 that's for $55 million, and that will be opening in the
12 spring. And that will be at the same time that these HVIP
13 dollars that are under discussion today will be released.
14 I also heard concerns over the treatment of
15 hydrogen truck technologies in HVIP. In HVIP, we are
16 proposing to offer higher rebate amounts for the purchase
17 of fuel cell trucks, in recognition of the high up-front
18 purchase costs of fuel cell technologies.
19 I also heard comments regarding the manufacturer
20 rolling soft cap proposed under HVIP. The situation we're
21 really looking to avoid here are those large orders that
22 reserve vouchers and tie up dollars for long, long periods
23 of time. So under staff's proposal, manufacturers would
24 be limited to holding 100 unredeemed vouchers at any given
25 time. And then should manufacturers want or need more,

manufacturers could make that request of staff. So this change is really aimed at ensuring that advanced technology products are being delivered to market in a reasonable time frame. So should the Board approve this mechanism, CARB staff would proceed with holding a public workgroup meeting prior to opening HVIP to discuss what evaluation criteria would be used to determine whether a manufacturer could go above that 100 unredeemed voucher cap.

I'll shift now to Carl Moyer. I heard concerns regarding the Carl Moyer construct in the context of combustion technologies. So I'd like to provide some background there.

The Carl Moyer Program provides an opportunity for natural gas trucks and other technologies to compete for $90 million in annual funding. When we were last before the Board with the Carl Moyer guidelines, the Board decided to increase the Carl Moyer amount from $30,000 per ton reduced to a hundred thousand dollars.

Further, under this program, local air districts can chose the projects that are funded. And as they always have, natural gas trucks remain on the menu. Natural gas, through those mechanisms, have the opportunity to demonstrate to local districts and fleets that these are good investments. And if a local air

district sees the benefits of the natural gas engines, they have the flexibility to choose to spend all of their Carl Moyer allocation on those vehicles.

A fundamental request and a reoccurring request that we've been asked for multiple times is removing the scrappage requirement associated with the Carl Moyer Program. So what you get with that requirement and what happens is you get the oldest, dirtiest trucks off the road, and in their place you get much cleaner trucks.

So communities get the benefits of accelerated health and air quality improvements. And from a statewide SIP perspective, we get to claim benefits towards meeting our federal ambient air quality standards. And as you know, status is a SIP-creditable incentive program is not a status that's easily earned with U.S. EPA.

So onto CVRP. I heard several comments related to the plug-in electric vehicle all-electric range proposal in CVRP. The history on this one is that after reviewing stakeholder feedback in this draft funding plan, staff is prosing to increase the eligibility requirement from 25 miles all-electric EPA range to 30 miles.

The result of that is of all the vehicles eligible for CVRP, this impacts four models out of 26, and 12 models will continue to be eligible in this proposal, ranging in the price range of just shy of $30,000 to

$40,000. More generally speaking, I did hear concerns with respect to ensuring access to lower cost zero-emission mobility. And I would like again to point to the incentive portfolio as a whole, which includes programs like Clean Cars 4 All and Finance Assistance.

The Clean Cars 4 All Program is stackable with CVRP. But even without stacking, a low-income applicant can receive up to $7,000 for a hybrid electric vehicle or $9,500 for a zero-emission vehicle or plug-in hybrid electric vehicle, plus another $2,000 for charging infrastructure installation.

So with that, I'm happy to answer any questions you may have.

CHAIR NICHOLS: So, Syd, let me just try to answer -- get you to answer one question I hope directly. A number of commenters suggested that not only were we shortchanging natural gas vehicles, which obviously they feel need more support, not less, but also suggested that there would not be cleaner vehicles, that is zero-emission vehicles, available in the weight classes that they are interested in, or that they think we should be interested in, mainly the largest, heaviest vehicles.

And if that was true, and if -- if it was true that we were taking funding away from, you know, available and cleaner sources and directing it towards non-existent

1 sources -- non-existent vehicles, that would not be a very
2 smart move to put it mildly.
3 So I guess what I really want to hear from you is
4 why you think that the shift that's being made or proposed
5 here will, in fact, work to bring the cleanest vehicles
6 out into the marketplace and into use.
7 MSCD DIVISION CHIEF VERGIS: Sure. Well, when it
8 comes to zero-emission technologies, I think what we're
9 seeing particularly in the heavy-duty space is that the
10 technology is evolving rapidly. And so we are not in the
11 same place that we were a year ago. In the HVIP Program,
12 there are two dozen manufacturers that are eligible to
13 receive HVIP funding. You heard Ms. Morgan during the
14 presentation name a number of those manufacturers.
15 When you have over eight large OEMs bringing
16 product offerings to market, now seems to be a very
17 exciting time to go zero. HVIP seems to be the place to
18 do it, but I'd also like to add that HVIP contrary to some
19 statements that were made is not cutting out combustion
20 technologies completely.
21 The world there has shifted too with the passage
22 of the Omnibus Regulation. The new low-NOx standard is
23 now 0.01 standard and that will continue to be included
24 and supported in HVIP under staff's proposal.
25 CHAIR NICHOLS: Okay. Thank you. That's -- that

was my question. I think it's time to call on other Board members who may wish to have comments or questions. I'll start with Hector De La Torre.

BOARD MEMBER DE LA TORRE: Thank you, Chair. I mentioned in my previous comments on the mobility plan about the Project 800, which I'm really excited about. Obviously, it will be part of this. Also, the -- the support that we have for owner/operators -- small owner/operators and coming up with a workshop or something task force that we can come up with some ideas to incorporate not just the incentive programs, but also ideas for loans for helping these owner/operators manage their way to find -- to be able to procure a zero-emission heavy-duty truck for their day-to-day use.

One thing that was mentioned regarding this transition of the borderline trucks, medium-duty I guess they are, to the 10,000 pounds for CVRP, that we'd lift the limitation on how many you can have. Obviously, for personal vehicles, I don't know what the limit is, one or two, I assume.

But if you're -- if we're transitioning in the businesses who use these vehicles, we need to take off the cap on businesses using CVRP, because they're going to need more than one or two trucks for their business. So we need to make sure that it is consistent for business

usage as opposed to personal usage.

And then finally, Clean Cars 4 All. I've spoken many, many times about the secondary market how important it is, particularly for underserved communities, communities of color. We need to make sure that the Clean Cars 4 All continues -- consistent, continues, survives through this very tough time. And so I would ask that we provide direction to the air districts that do Clean Cars 4 All, all -- all of them - I don't know how many there are, three or four - to be able to imburse -- reimburse operating costs beyond the 10 percent overhead limit with this funding in the anticipation that GGRF is coming right behind it.

But even -- even if it gets approved in January, it's till going to take several months. And so we need to make sure that these Clean Cars 4 All programs survive to when that money arrives. And obviously, the 10 percent limit -- overhead limit would be for the whole amount not just this little piece that we're giving them right now. So they could go over 10 percent now with the expectation that they're going to get GGRF money later and they would be under 10 percent for -- for the whole combination. Unfortunately, because of the lag this year, they've been put in this really awkward situation. So I would ask that we do this to make sure that they're able to keep the

doors open while we're transitioning in this time period.

That is all. Thank you.

CHAIR NICHOLS: Thank you.

Judy Mitchell.

BOARD MEMBER MITCHELL: Thank you, Chair Nichols. I want to return to the low NOx 0.02 gram issue. It's true there are other programs that -- that the truck owner can go to to get funding. We've looked at those and they do offer opportunities. I think the big thing with HVIP is that for the owner operator, the small guy that's running a small shop, HVIP is a good possibility for him, a good opportunity.

That small guy who wants to go over to a cleaner truck, cost is a big issue. And the 0.02 gram truck is going to be a lot less expensive for that person, rather than a newer all-electric, battery electric trucks. I don't see that small owner/operator graduating to a -- to an all-electric truck, but I can see that person using the funding to get to a low-NOx truck.

And so that's one reason I would think we might want to consider leaving that 0.02 gram in the HVIP Program. And I would suggest that if we do that, we just leave that -- that as it is, as it was last year, and look for one more year and then look at it again.

Obviously, that 0.02 gram engine helps us reach

our near-term goals of 2023 and 2031 and provides, you know, that opportunity for our nonattainment regions. So that is something I would ask us to consider to just extend it for one more year, as it is in the program the way we left it last year.

I do also want to mention and touch on the issue that Mr. De La Torre talked about, and that is the issue that Rivian brought up. I thought Rivian was a really interesting company, because they are making these pickup trucks that we see so often on our roads that contractors and skilled workers use. And I think there's a little bit of confusion over where they will fit in. Are they going to be under the HVIP Program with a Class 2b vehicle or are they are going to be moved over to CVRP? And then, if they are going to be moved to CVRP, you probably want to look at that, so that companies that have fleets of these that are going out to do jobs aren't cut off by -- by a cap in the CVRP program.

So I would just urge our staff to work with -- on that issue and maybe work out with Rivian where they would stand, if they -- are they going to be Class 2b or are they going to be CVRP in the CVRP Program?

CHAIR NICHOLS: Okay. Before we move on, I'm going to ask the staff to respond to that, because I think it's a question. I also want to respond to your earlier

comment --

(Dog barks)

CHAIR NICHOLS: There goes the dog. Somebody is at the door. There was a -- on the question of this small operator who might by a natural gas truck if we were allowing money from that, but not be interested in a zero-emission truck, and just what we know about that topic to begin with, because I think it's a -- it's a worthwhile discussion. So Syd, are you the one to -- to take this?

MSCD DIVISION CHIEF VERGIS: Sure, I'll take the first part of it and then I'll -- I will kick the second part to Peter, who's been a wonderful manager, particularly on the HVIP CVRP topic.

CHAIR NICHOLS: Okay.

MSCD DIVISION CHIEF VERGIS: So I'll just start by saying to clarify, under HVIP, CARB really pays the incremental cost associated with both technologies, low NOx and battery electric. And again, there are opportunities for low NOx and Carl Moyer. You know, particularly intriguing is, you know, this opportunity to get access to $90 million a year in Carl Moyer and the opportunities for local air districts to set aside dollars, you know, to the extent that they are interested and willing to participate.

With that, Peter, would you like to talk about the differences between the personal and commercial use vehicles?

MSCD INNOVATIVE HEAVY-DUTY STRATEGIES SECTION MANAGER CHRISTENSEN: Yes, thank you. So this is a really exciting time to have zero-emission products coming into the Class 2b space. We've been fortunate to work with the manufacturers over the development of this funding plan. And that really helped us to come to a proposal that I think is going to work for supporting the vehicles that are in that space.

And essentially, we are proposing to keep the Class 2b commercial vehicles in HVIP, especially recognizing that there's so much additional use of those vehicles with last mile delivery and so much delivery that's happening in our communities, especially under the COVID circumstances.

Class 2b vehicles that are passenger use, that are not designed to be used as commercial vehicles would be supported through CVRP. Now, the difference between the Class 2b vehicles and the others including the Class 8, is that the 2B vehicles are not yet eligible. They're not yet in the commercial marketplace for the most part.

So we're going to be working with the manufacturers over this coming year as they bring their

1 products to the market to understand better their pricing,
2 as well as the funding amounts that are going to be needed
3 to support those vehicles, both in HVIP and CVRP. So it's
4 an exciting time in that space and we're looking forward
5 to providing support to get those vehicles on the road.
6 CHAIR NICHOLS: Okay. Thank you. We have Dan --
7 I'm sorry, Sandy Berg first and then Dan Sperling in the
8 queue. And then I think it's probably going to be time to
9 round up this discussion, unless we have any last minute
10 requests from the Board members who want to speak on this.
11 So, Sandy, first.
12 VICE CHAIR BERG: Thank you very much, Chair.
13 And I'll be quick. I just need a couple of clarifying
14 questions. Could you remind me, does CVRP have any income
15 or MSRP cap?
16 MSCD DIVISION CHIEF VERGIS: Yes, to both.
17 Lisa or Andrea.
18 MSCD INNOVATIVE LIGHT-DUTY STRATEGIES INCENTIVE
19 SECTION MANAGER MACUMBER: Yes. Good morning. Lisa
20 Macumber. Or good afternoon -- evening at this point.
21 Lisa Macumber MSR -- MSCD.
22 Yes, we do have both. We have an MSRP cap at
23 60,000, for a base MSRP and we do have income caps set at
24 various levels. The highest level is 300,000 per year for
25 folks that file married, 204 for folks that file head of

household, and 150 for folks that file as individuals.

And then we do have the increased rebate, which is applied to consumers that make less than 300 -- I'm sorry, 300 percent federal poverty level. And we are proposing within this plan to increase that to the 400 percent federal poverty level to align with our other equity projects.

VICE CHAIR BERG: Okay. Great. So I think that's really terrific the way you've bifurcated 2bs when they do come on the market, because CVRP really is not set up to handle commercial and it really does need to stay a light-duty individual. And so I was really very happy to see that.

Could you just clarify for me again talking back about the hybrids. Somebody mentioned on the -- their testimony that the new 30 miles was calculated with a new methodology and, in fact, would make it 45 miles. So can you just clarify for us what the issue was there?

MSCD INNOVATIVE LIGHT-DUTY STRATEGIES INCENTIVE SECTION MANAGER MACUMBER: Yes, absolutely. So last year when we actually bought you our proposal, what -- where we were at was we used the urban dynamometer process, which is what we do through our ZEV reg for calculating all-electric range. Over the course of this year, we've worked with stakeholders to try to find an approach to

1 make that number more accessible for consumers to
2 understand exactly what the threshold is. And we did that
3 by kind of switching the methodology to EPA range.
4 And so in our funding plan, we did -- we have
5 laid out what those two differences are. And really for
6 consumer purposes, we've switched to talking -- talking
7 about the numbers as EPA numbers. But, yes, if you were
8 to kind of equate it across the board, last year, we had
9 increased that number from 25 up to 35. And then this
10 would -- this does increase the UDDS a little bit higher.
11 But again, it's the same basic increment that what we had
12 done last year.
13 VICE CHAIR BERG: And do you feel that the -- the
14 discussion or at least the point of timing has any merit,
15 that we've given the manufacturers the time to adjust to
16 this?
17 MSCD INNOVATIVE LIGHT-DUTY STRATEGIES INCENTIVE
18 SECTION MANAGER MACUMBER: You know, absolutely, we did.
19 This is a new proposal. We did get a lot of feedback
20 after we had had our final workshop coming in to
21 developing our funding plan. And so there wasn't a lot of
22 time for the manufacturers to respond. But as we have
23 laid out, we wouldn't implement this until April. And so
24 we would be working with folks to make sure that we got
25 the word out, that consumers understand, that dealers

1 understand that the changes are coming. So they wouldn't
2 implement right away. They would implement in a few
3 months from now.
4 VICE CHAIR BERG: Have we heard from our EJ
5 groups? Are they concerned about losing these four models
6 that are under $30,000?
7 MSCD INNOVATIVE LIGHT-DUTY STRATEGIES INCENTIVE
8 SECTION MANAGER MACUMBER: We have not. I don't believe
9 that we received any comment letters that provided us any
10 specific details on that point. For the most part, the
11 majority of the comments that we receive around making
12 sure that we're providing service to the EJ community is
13 in having those larger incentives for the newer vehicles
14 for those folks that are ready to move into newer vehicles
15 and that we're providing incentives for used vehicles,
16 which we are doing through the Clean Cars 4 All program
17 add through our statewide financing program.
18 VICE CHAIR BERG: Okay. I am concerned about
19 that. But if we can keep our eye on it, I can be
20 comfortable, if that's the way the -- my fellow Board
21 members want to move. But I do want to be sensitive.
22 Price does matter, and these are popular vehicles, and so
23 I'd like you to keep an eye on that.
24 And the last thing I have is can you help me
25 with -- we had a few testimony regarding the disparity

1 between on -- I think the HVIP on the 2bs, 3s, the 4s that
2 manufacturers were overbuilding in order to get more
3 funding and then using these vehicles in other categories,
4 is that a concern of ours?
5 MSCD DIVISION CHIEF VERGIS: Sure. For that,
6 we'll direct that to our HVIP manager, Peter.
7 MSCD INNOVATIVE HEAVY-DUTY STRATEGIES SECTION
8 MANAGER CHRISTENSEN: Great. Thank you. Yeah, so at this
9 point, we don't think that that's happening in the market,
10 because we don't really have the Class 2B commercial
11 vehicles out there and available for purchase. What we
12 are seeing in the market is that really with all the
13 zero-emission vehicles that are be -- that are available
14 now and being introduced, there's really need for product
15 across every vocation, across every vehicle type and every
16 weight class.
17 So we're looking to, you know, look for ways to
18 support that zero-emission technology, you know, all the
19 different vocations that are out there from the local
20 delivery vehicles all the way up to the class A trucks
21 including the drayage trucks and the trucks that are
22 operating in our regional communities.
23 VICE CHAIR BERG: Thank you very much for that.
24 And thank you for all of your work. You know, we never
25 have enough money and we're especially challenged this

year on many fronts. And I really do appreciate all of your efforts. I certainly would support having you keep your eye on transit and letting us know the next funding round. We did make a commitment when we did pass the Transit Rule for electric buses, and I do want to be sensitive to that.

And again, thank you very much for your efforts.

CHAIR NICHOLS: Okay. Then we'll turn to Dan Sperling.

BOARD MEMBER SPERLING: So I just -- after all that discussion, I ended up with only one little issue I wanted to address, and that's the PHEV limit, the 30 miles.

So I really believe very strongly we should be raising the limit, you know, way above 30. I think it should be 40 or 45, but it does trouble me a little that we do it, you know, with so little lead time.

I would favor, you know, delaying it, you know, a year, but I'm not -- I don't feel strongly about it. But it just seems like in terms of good governance and good policy, we should, but I'm not going to --

CHAIR NICHOLS: Yeah. I guess my response on that would be that, you know, it's the buyer that we're trying to benefit here. And if there are other models available that meet the need that do also achieve the

electric miles limit, then I don't feel like we need to keep everybody equal, if there -- if others -- you know, if there are some that clearly do meet that need, as long as there's an availability for the -- from the consumer's perspective.

I mean, I realize at the end of the day, it does benefit the manufacturer, but that's not -- the intent is that it benefit the consumer, right?

BOARD MEMBER SPERLING: So you know what I'd like to see is laying out a pathway towards getting up to, you know, what do we really want to get to? And I'd say, you know, 40 or 45 miles is what we should do and kind of have a -- at least a general -- you know, articulate that kind of a timeline and that goal, but that's for another time

CHAIR NICHOLS: Maybe for -- maybe for next year.

BOARD MEMBER SPERLING: Next year.

CHAIR NICHOLS: Talk to your former student, Ms. Vergis. Dr. Vergis.

(Laughter.)

CHAIR NICHOLS: I see her on my screen. Were you about to say something, Syd?

No. No. She just popped up on my screen.

Okay. I feel, maybe it's because it's the of the day, the end of the year, the end of my term, I am really tired of this debate, which I don't think is even a real

1 debate, about whether we are somehow hurting or
2 disadvantaging the single truck operator who would move
3 into a natural gas truck, if we only kept that in the
4 program, but certainly wouldn't move to an electric truck,
5 if there was an electric truck, because that would be so
6 much more money.
7 I don't know the truth of this item -- of this
8 issue. I mean it sounds plausible, right? But I also
9 have heard comments to the contrary. And so I'm just
10 going to ask at this moment whether anybody has any
11 information anecdotal or statistical, preferably the
12 latter, about -- that will elucidate this point.
13 BOARD MEMBER MITCHELL: What is that cost
14 differential, I guess that's what we want to know. How
15 much is a new battery-electric truck and how much is the
16 low-NOx truck? I mean, somebody on our staff must have
17 the answer to that.
18 MSCD INNOVATIVE HEAVY-DUTY STRATEGIES SECTION
19 MANAGER CHRISTENSEN: Why don't I -- why don't I --
20 DEPUTY EXECUTIVE OFFICER CLIFF: Chair Nichols --
21 oh, go ahead, please, Peter.
22 MSCD INNOVATIVE HEAVY-DUTY STRATEGIES SECTION
23 MANAGER CHRISTENSEN: I'll give it a start. You know, the
24 cost of zero-emission Class 8 trucks is significantly more
25 than the diesel counterpart. There's a range, because

there's a variety of manufacturers in this space now. So that's a good thing that there are less expensive options than there are more expensive options. But if we just use for the sake of argument about a 300, 350 thousand dollar, it is more expensive.

When we're looking at opportunities with owner/operators and smaller fleets, we think this is the time to be -- to look for additional creativity in our incentive programs and how we support those fleets, not just traditional incentives like we have in HVIP, where you have kind of off -- off-the-hood incentive amount, but how can we be more creative and look at opportunities for things like all-inclusive leases that include the cost of the vehicle, the cost of infrastructure, perhaps even the cost of fueling and maintenance, additional support like that, that kind of looks at the -- at the full experience of the vehicle.

So those are the kinds of things that we plan to look at in how we can provide that kind of funding support in addition to the incentives that we already provide now with a real focus on owner/operators and smaller fleets.

BOARD MEMBER MITCHELL: Well, I'm encouraged to hear that, because this is the big issue down here in the South Coast and probably also up in Oakland, I would think with a lot of owner/operators driving the older trucks,

1 and with our Truck and Bus Rule coming into play, so that
2 we have to have trucks that are 2010 or newer by 2023, and
3 we have our ozone deadline in 2023, that we want to see
4 how can we get those owner/operators into, well, the
5 cleanest possible, because the 0.02 is 90 percent lower
6 NOx emissions. So it would be significantly better
7 than -- than say a 2014 diesel truck that is out on the
8 road and that they could pick up. And that's my concern.
9 I want to push them into the cleanest possible
10 affordable alternative that we can find for them, rather
11 than them going out and just buying another diesel truck.
12 And that's -- that's my concern for my region. We've got
13 8,000 trucks -- drayage trucks in the ports that will have
14 to be turned over between now and 2023. And that's what I
15 think, you know, the concern is. And that's why I thought
16 if we leave 0.02 in the HVIP program at least for another
17 year, we can work with that and maybe in that -- in the
18 meantime, we can work with Mr. Christensen and our staff
19 to Find other pathways to transfer those owner/operators
20 into cleaner possibilities, cleaner alternatives.
21 CHAIR NICHOLS: So here's my reason for not
22 wanting to go along with your proposal and then I'm going
23 to suggest that rather than continue, because it's hard to
24 do this, you know -- to have a real conversation, given
25 the format that we have here with Zoom, that maybe we --

if you want to do it, that you put a motion forward. And I would support you doing that, if that's what you choose to do, and we'll just take a vote on the issue.

But remember that the natural gas vehicle, or any combustion vehicle, is not just going to be a one-time vehicle. It doesn't just exist and put out its certification emissions for one year. By its nature, A, it's going to deteriorate because all combustion vehicles do. The emissions do deteriorate, which is something that does not happen with a zero-emission vehicle. And it's going to be on the road for a long time. So we're intro -- we're introducing into our system vehicles that are -- yes, they are significantly cleaner when they first come into the market. And they probably would stay at least at least somewhat cleaner than the diesel vehicles out there. Although, I'm not sure we have the experience to know that. But for sure, the owner is going to have that vehicle for a long time and then it's going to just continue to be emitting, even at that lower rate, on into the future. And we need to get to that future faster.

So maybe it's a philosophical argument, but I don't -- I just don't see that 2023 deadline as driving a decision that would bake in so many emissions or such technologies forever, when, in fact, we've given people the option, if that's what they want to do, they can still

do it. We're just not making it as desired an option as going to the -- you know, to the newest and cleanest technologies, which is where we need to go.

But do you -- if you would like to move that we keep it in for another year, I think you should go ahead and do that and I think you could probably got a second from somebody.

BOARD MEMBER MITCHELL: I'll move that we keep 0.02 gram in for one more year under the same terms that we put it in last year.

CHAIR NICHOLS: Okay. And do we have a second?

Oh, come on.

(Laughter.)

BOARD MEMBER SHERRIFFS: I'll second for one and only one year.

(Laughter.)

DEPUTY EXECUTIVE OFFICER CLIFF: Chair Nichols?

CHAIR NICHOLS: Yes.

DEPUTY EXECUTIVE OFFICER CLIFF: Sorry. This is Steve Cliff --

CHAIR NICHOLS: Yes.

DEPUTY EXECUTIVE OFFICER CLIFF: -- Deputy Executive Officer. I was just going to offer a point also that the VW mitigation trust money that Dr. Vergis mentioned, $55 million, will be first-come first-served

type program.

CHAIR NICHOLS: Um-hmm.

DEPUTY EXECUTIVE OFFICER CLIFF: So to address the concern that you noted that small operators would have more of a challenge potentially doing a project-like approach in Moyer, the first-come first-served is much more like HVIP and it would be eligible for these specific trucks.

Of course, they would have to scrap a diesel, because it is an air quality improvement type program. But nevertheless, that first-come first-served program would be eligible to small owner/operators. And I think that should be a suitable program. And that is something that South Coast will be undertaking.

As we noted over the summer, there Were challenges in getting interest in the market for those vehicles. So there will be some changes and we think this will help actually encourage more sales of natural gas trucks under that program to actually get NOx reductions that it's intended to achieve.

CHAIR NICHOLS: You should have said that sooner.

(Laughter.)

CHAIR NICHOLS: Oh, well. Thank you. Thank you for adding that. That's really helpful information.

All right.

1 VICE CHAIR BERG: I think Ms. Riordan has her
2 hand up.
3 CHAIR NICHOLS: Yes. Go ahead.
4 BOARD MEMBER RIORDAN: I really just wanted to
5 follow along. I'm very impressed with the opportunity
6 that we might have with the VW emissions and -- fund, and
7 the -- but we need to make the knowledge of that funding
8 very apparent to these owner operators. And Mr. De La
9 Torre, I don't know how to reach out to them exactly, but
10 we need right now to recognize this potential and somehow
11 get that information out to these fellas, because I -- I'm
12 not sure they have that information.
13 CHAIR NICHOLS: Fair enough. Hector, do you want
14 to respond to that, if you're there, Hector.
15 VICE CHAIR BERG: He is.
16 CHAIR NICHOLS: Yes, he is.
17 BOARD MEMBER RIORDAN: He's there.
18 MEMBER DE LA TORRE: Yes.
19 CHAIR NICHOLS: I know you're there. I just
20 didn't see you.
21 BOARD MEMBER DE LA TORRE: You know, I think we
22 would -- we would do it through the trucking association,
23 the local ones, not the statewide one.
24 BOARD MEMBER RIORDAN: Yeah, correct.
25 BOARD MEMBER DE LA TORRE: I mean, I'm sure they

interact with the statewide one, but it's much easier to get them locally, like the Harbor Trucking Association in the --

BOARD MEMBER RIORDAN: Okay.

BOARD MEMBER DE LA TORRE: -- in the Port area, working with them. And I'm sure staff has wonderful ways of communicating, based on our Truck and Bus Rule and all the other things that we've done in the past, where they've come out in droves to engage with us --

BOARD MEMBER RIORDAN: Okay.

BOARD MEMBER DE LA TORRE: -- so I would, you know, propose doing that.

BOARD MEMBER RIORDAN: Okay.

BOARD MEMBER DE LA TORRE: And again, we had had a discussion just in the last two weeks about how do we put all these pieces together to put the best packages possible together for these smaller on owner/operator or smaller fleets.

BOARD MEMBER RIORDAN: Yeah. Okay.

VICE CHAIR BERG: So before --

CHAIR NICHOLS: So, Sandy --

VICE CHAIR BERG: Yeah, before we vote, just a quick point of clarification -- did -- is the funding that we had last year strictly for owner/operators or is it just first-come first-served for whoever wants to buy a

low-NOx truck?

DEPUTY EXECUTIVE OFFICER CLIFF: HVIP is a first-come first-served program.

VICE CHAIR BERG: And so it -- unfortunately, Judy, I mean, it might not benefit the owner/operator, because if they don't get their first-come first-served, it might go to some of the larger area medium-sized companies. Just point of --

CHAIR NICHOLS: Yeah.

VICE CHAIR BERG: -- information.

CHAIR NICHOLS: It seems a valid fact.

Okay. Mr. Sakazaki, would you call the roll, please.

BOARD CLERK SAKAZAKI: Thank you, Madam Chair.

Dr. Balmes?

BOARD MEMBER BALMES: Just to clarify, are we voting on the amendments only?

CHAIR NICHOLS: This is -- this is just -- yes, we're not voting on the resolution. This is just the proposal to keep another year worth of the 04 and then we'll have another vote on the whole package.

BOARD MEMBER BALMES: I vote no.

BOARD CLERK SAKAZAKI: Mr. De La Torre?

BOARD MEMBER DE LA TORRE: No.

BOARD CLERK SAKAZAKI: Mr. Eisenhut?

BOARD MEMBER EISENHUT: No.
BOARD CLERK SAKAZAKI: Supervisor Fletcher?
BOARD MEMBER FLETCHER: Fletcher, no.
BOARD CLERK SAKAZAKI: Senator Florez?
BOARD MEMBER FLOREZ: No.
BOARD CLERK SAKAZAKI: Sorry, Senator Florez, say that one more time.
BOARD MEMBER FLOREZ: No.
CHAIR NICHOLS: I saw him. Yes, he voted -- he just voted.
(Laughter.)
BOARD CLERK SAKAZAKI: Supervisor Gioia?
BOARD MEMBER GIOIA: No.
BOARD CLERK SAKAZAKI: Ms. Mitchell?
BOARD MEMBER MITCHELL: Yes.
BOARD CLERK SAKAZAKI: Mrs. Riordan?
BOARD MEMBER RIORDAN: No.
BOARD CLERK SAKAZAKI: Supervisor Serna?
BOARD MEMBER SERNA: No.
BOARD CLERK SAKAZAKI: Dr. Sherriffs?
BOARD MEMBER SHERRIFFS: Yes.
BOARD CLERK SAKAZAKI: Supervisor Sperling?
BOARD MEMBER SPERLING: No.
BOARD CLERK SAKAZAKI: Ms. Takvorian?
Vice Chair Berg?

VICE CHAIR BERG: No.

BOARD CLERK SAKAZAKI: Chair Nichols?

CHAIR NICHOLS: No.

BOARD CLERK SAKAZAKI: Madam Chair, the motion is defeated.

CHAIR NICHOLS: Then let's call the roll on the underlying resolution, which is the -- to support the funding plan as the staff proposed it.

BOARD CLERK SAKAZAKI: Dr. Balme?

BOARD MEMBER BALMES: Yes.

BOARD CLERK SAKAZAKI: Mr. De La Torre?

Mr. De La Torre.

BOARD MEMBER EISENHUT: I'll vote yes and I'll offer a motion if you need one?

CHAIR NICHOLS: I was taking it that we had it. You're so right. You get the credit it. Thank you.

(Laughter.)

CHAIR NICHOLS: I'm losing my command --

BOARD MEMBER SHERRIFFS: Second. Second. Dr. Sherriffs.

CHAIR NICHOLS: Thank you.

Okay.

BOARD CLERK SAKAZAKI: Supervisor Fletcher?

BOARD MEMBER FLETCHER: Fletcher, aye.

BOARD CLERK SAKAZAKI: Senator Florez?

BOARD MEMBER FLOREZ: Aye.
BOARD CLERK SAKAZAKI: Supervisor Gioia?
BOARD MEMBER GIOIA: Yes.
BOARD CLERK SAKAZAKI: Ms. Mitchell?
BOARD MEMBER MITCHELL: Yes.
BOARD CLERK SAKAZAKI: Mrs. Riordan?
BOARD MEMBER RIORDAN: Aye.
BOARD CLERK SAKAZAKI: Supervisor Serna?
BOARD MEMBER SERNA: Aye.
BOARD CLERK SAKAZAKI: Dr. Sherriffs?
BOARD MEMBER SHERRIFFS: Yes.
BOARD CLERK SAKAZAKI: Professor Sperling?
BOARD MEMBER SPERLING: Aye.
BOARD CLERK SAKAZAKI: Ms. Takvorian?
Vice Chair Berg?
VICE CHAIR BERG: Aye.
BOARD CLERK SAKAZAKI: Chair Nichols?
CHAIR NICHOLS: Aye.
BOARD CLERK SAKAZAKI: Madam Chair, the motion passes.
CHIEF COUNSEL PETER: Can I -- this is Ellen Peter, I'm sorry. Mr. De La Torre was trying to get off mic and maybe he -- if he can't reach it, maybe he just does a thumbs or a thumbs down.
BOARD MEMBER DE LA TORRE: Aye.

1 CHAIR NICHOLS: Okay. I think we heard him loud
2 and clear. Thank you. Thanks for that.
3 Okay. We have one last item of business, that's
4 the open comment period at the end of the session. This
5 is where someone who wishes to talk to the Board about
6 anything that was not on the agenda can raise that issue.
7 Do we have anybody signed up for open comment?
8 BOARD CLERK SAKAZAKI: Madam Chair, we have two
9 people with their hands currently raised. So Jason Meggs
10 and Sean Edgar. I'm sorry, three now Todd Campbell.
11 So, Jason, I will activate your microphone.
12 Please unmute yourself and begin.
13 MX. MEGGS: Good afternoon, Chair Nichols,
14 members of the Board. Evening, I should say.
15 It's good to see you all. It's been so long
16 since we've seen each other in person. It warms my heart
17 to see you. But unfortunately, as I mentioned earlier
18 today, my message is a grave one. My name is Jason Meggs.
19 I'm speaking today on a matter of deep concern to the
20 internal health of CARB and thus to our mission as a
21 veteran of CARB myself.
22 CARB's been a focus of my career for more than a
23 decade. Climate mitigation all my career and indeed most
24 of my life. In the Research Division, I was a leader on
25 multiple initiatives to reduce emissions of short-lived

1 climate pollutants, particularly fluorinated gases, as
2 well as urging that the agency act on the proven potential
3 on electric bicycles to greatly reduce on-road emissions.
4 Here in California, we openly find it abhorrent
5 that Presidential administrations have placed gag orders
6 on the U.S. EPA and on other federal agencies forbidding
7 staff to even mention climate change, for example.
8 However, our own agency, CARB, cannot hold our
9 head high here as we have an all-too-similar problem
10 within the agency. Staff are held in silence on too many
11 critical issues. There is currently no provision for
12 staff to report problems within the agency to a trusted
13 third party to facilitate internal resolution. The only
14 recourse, should the command chain fail, is to seek
15 support from outside agencies, which is slow, ineffective,
16 and contrary to public claims, poor at protecting the
17 complainant.
18 It can also feel like betrayal to those of us who
19 are deeply committed to the agency's mission. Likewise,
20 there's no provision for staff to seek conflict resolution
21 within the agency. CARB needs a guaranteed opportunity
22 for mediation and conflict resolution, so staff who care
23 about the quality and effect of our work can feel
24 protected and respected, rather than silenced and scared.
25 Lastly, it has become very clear that CARB and

indeed all environmental agencies need to incorporate into their hiring process guarantees that staff within the agency have a track record --

BOARD CLERK SAKAZAKI: Thank you.

MX. MEGGS: -- of support or the agency's mission and protecting --

BOARD CLERK SAKAZAKI: Thank you.

MX. MEGGS: -- public health and the environment. I've provided draft policies to --

BOARD CLERK SAKAZAKI: Thank you.

MS. MEGGS: -- these effect to Chair Nichols --

BOARD CLERK SAKAZAKI: You time has concluded.

So we have now five people with their hands raised. I'm going to ask for a last call. People who want an open comment, please raise your hand or dial start nine now.

Our next speaker is Sean Edgar. Sean, I have activated your microphone. You can go ahead and begin.

Sean, are you there?

Sean, we'll skip you and go to our next commenter, Todd Campbell. Todd, I have activated your microphone. You can unmute yourself and begin.

MR. CAMPBELL: Good evening. I will be quick. I just wanted to, before I left the meeting tonight, thank Kurt Karperos for his life, you know, long service with

the Air Resources Board. Certainly appreciate people like you who dedicate your career to clean air. I also want to thank Board Member Sherriffs, Gioia for your service. You will be missed. I also would like to especially thank Board Member Judy Mitchell, who I'm a big fan of and really sticks up for the South Coast Air Basin. And I really appreciate your leadership and your willingness to listen. In fact, many of the Board Members here have been wonderful. But Judy, you are exemplary in every way, and, you know, you will be missed in the South Coast.

And then finally, Mary, you funded me for dump -- first dump diesel program when I was back in the nonprofit days. And boy, I remember you through Resources, and EPA, and, you know, obviously, a very long stint at the Air Resources Board. You know, obviously, you are legendary in so many ways. And I just want to thank you for your service.

As someone who has served as an elected official, it stakes a lot to put all of yourselves out there. And we may not always agree, but at the end of the day, we are breathing a lot easier, because of all of you, so I just wanted to thank you. And I didn't want to use the other time, but I wanted to thank you personally for your service.

BOARD CLERK SAKAZAKI: Thank you.

1 Our next speaker is Urvi Nagrani. Urvi, I have
2 activated your microphone.
3 Please unmute yourself and begin.
4 MS. NAGRANI: Hi. I just wanted to, first of
5 all, thank all of the outgoing Board members. I know that
6 this work takes a lot of energy. I've been here since
7 9:00 in the morning with you all and you've maintained
8 your focus and your willingness to listen to all of
9 California citizens and businesses commenting in this
10 period. And I think that your record of service speaks
11 for itself.
12 However, I think one thing that I would love to
13 see from the Board members who are staying on, is that the
14 urgency of many plans is often said we can just wait one
15 more year for implementing plans. And I think for folks
16 of my generation, there is an urgency that we don't see
17 represented in policy. And a lot of us feel like the last
18 four years with the EPA and CARB on opposite ends meant
19 that we didn't see science-based policy really thriving.
20 And we know that we basically lost time in this
21 fight against climate change. And so when we're thinking
22 about disadvantaged communities, I urge you to think not
23 just of who in California hasn't had access to funding,
24 but whose homes are going the be burnt, whose homes are
25 going to be flooded, and why we need to take urgent action

1 to cut emissions immediately. I think a lot of these
2 compromises over low-NOx solutions don't get at the point
3 that we need a fundamental transformation and we need it
4 quick.
5 So in all of your efforts to further
6 zero-omission efforts create partnerships spread good
7 work, I am deeply supportive. And anything that, you
8 know, CARB needs help from the public to do, I will be
9 deeply supportive as well. Thank you so much for your
10 service and for being here this late tonight.
11 BOARD CLERK SAKAZAKI: Thank you.
12 Our next speak -- or actually let's go back to
13 Sean Edgar. Sean, I have activated your microphone.
14 MR. EDGAR: Hi, Ryan. Can you hear me now?
15 BOARD CLERK SAKAZAKI: We can, yeah.
16 MR. EDGAR: Great. Thank you very much. I offer
17 a genuine goodbye to the departing Board members. And
18 Chair Nichols, I wish you best wishes in your future
19 endeavors. I hope that you're moving on is not a result
20 of my 13 years of talking trash to your Board.
21 (Laughter.)
22 CHAIR NICHOLS: No.
23 MR. EDGAR: Just on my account, I've tried to be
24 concise, constructive and sometimes vigorous, but it
25 builds on our members' investment of over $1 billion in

1 clean trucks and heavy equipment in the trash and
2 recycling industry. So we're going to continue to pick up
3 your trash and recyclers wherever you may end up residing
4 in the future.
5 And ACT is undoubtedly one of the boldest actions
6 that the Board has taken in my 20 years in front of the
7 Board. And if it's going to be successful, there are a
8 couple key unfinished business things that I'll give you
9 my Christmas wish list and then I'll you my New Year's
10 Resolution.
11 So on my Christmas wish list I'll just ask for
12 two things. I'll ask for you, Chair Nichols and your
13 family, to have a well deserved rest.
14 And I'll also just ask for Board staff to provide
15 some guidance for the reporting for ACT. You know, it's
16 been over five months since the Board took bold action to
17 pass it and we're now about a little over 90 days away
18 from a reporting deadline. And being a veteran of the
19 garbage industry, it's going to be a garbage-in
20 garbage-out experience. And so if the Board is going to
21 get good data, they're going to have to give good
22 reporting guidance. And we have not seen that yet in the
23 way of final instructions to tens of thousands of entities
24 that are going to be compressed when they're doing their
25 TRUCRS reporting, DOORS reporting, and filing their --

closing up their books for 2021.

So my New Year's Resolution is to work with Board staff to see if we can make the ACT dialogue more relevant. I'm grateful to have the opportunity. Next year will be my 21st year working on clean transportation projects. So thank you all and I wish you all a Merry Christmas and hope to talk to you again soon.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Frank Harris. Frank, I have activated your microphone. You can unmute yourself and begin.

MR. HARRIS: Great. Thank you very much. I'd also like to, on behalf of the California Municipal Utilities Association, second Mr. Edgar's comment regarding guidance on the Advance Clean Track reporting rule. It's not actually why I wanted to make a comment, but since he mentioned it, I wanted to follow and travel along, as it were.

Now, just personally, I wanted to thank Chair Nichols. Mary, you once mentioned that with some level of exacerbation, that you had -- you were tired of hearing from economists, but I absolutely appreciate the -- the collaborative approach you took to developing the Cap-and-Trade and many of the other policies pursuant to

the -- California's GHG rules.

I moved to Orange County when I was a little boy, six years old. Dirty air. Remember having to stay indoors a lot, which sucks when you're a six year old, because of smog alerts.

Advanced forward 25, 30 years, my wife and I raised six kids -- five kids, excuse me in Orange County. Very few smog alerts. And I can -- I think we can trace that back to your initial challenge of the state to make the state enforce the Clean Air Act.

So on behalf of my children and all the other kids in Orange County and the South Coast area who breathe considerably cleaner air than we did back when I was a little boy, I want to thank you Mary, and I wish you all the best.

CHAIR NICHOLS: Thank you.

BOARD CLERK SAKAZAKI: Thank you. Our next speaker is a telephone number ending in 528. I've activated your speaker. Please state your name for the record and you can begin.

MR. ROSENBERGER: Hello. My name is Laura Rosenberger Haider. And most -- well, I read that a lot of those forest fires have started from negligence by PG&E. It's like they cut trees, but they didn't cut the right tree, the one that triggered the fire. They

overlooked a few trees. They overlooked a couple of areas. And the C-clamp failed in the Camp Fire. A C-clamp failed and it's negligence. They didn't get around to repairing it. I think we need some more -- hire some more people to kind of go after all of PG&E's mistakes to kind of catch them before another fire starts, and take out some of those big tree stumps and use them -- chop them up into wood chips and peat moss or something before they fuel -- they burn really hot and fuel another fire.

And I was going to make that comment today, but I was at work and I couldn't even -- couldn't even do it, because I was trying to do a job at the same time. I couldn't step out.

But also, I wanted to say that we should prohibit those certain hydrofluorocarbons also, if it will make a difference now.

All right. Thank you very much.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is a phone number. You can unmute yourself and begin.

MR. GEORGE: Hello. My name is Ranji George. I just want to thank again, Board Member Nichols and the other Board members Judy Mitchell and others who are there for their leadership on climate change and in the

leadership that lead to a complete change in air quality in the South Coast Basin, where -- I'm a scientist. I was a scientist at AQMD for 30 years, batteries, fuel cells, natural gas, and also developed the RECLAIM Program for NOx. I was the inventor of the Cap-and-Trade for NOx, which morphed into CO2.

I just want to alert you as you push ZEVs, we need to look a little more into the granular details. And Tesla has to be complimented. He -- they acknowledge the toxic impact of cobalt, for example. Cobalt is probably the highest performing batteries as of late. But they do acknowledge the toxic impact of putting it in and taking it out at the end of the process. And as -- and also, we have to be concerned of nickel, which they haven't addressed yet.

We need to ask all the other manufacturers who are looking into batteries to go the same way as Tesla, to acknowledge that there are some issues with certain battery types and help them to move into cleaner batteries, otherwise the next generation will be paying the price for going marching forward without addressing that.

So, Tesla has also said they would --

BOARD CLERK SAKAZAKI: Thirty seconds left.

MR. GEORGE: Tesla said they'll get control of

the batteries at the end of the process. And that's -- those are good steps. And I hope you can, as a Board, encourage all manufacturers to do the same, so it will help all the -- AB 617 communities and the rest of us.

And please consider also fuel cells, which doesn't have many -- any of these problems.

Thank you.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Max Pfeiffer. You can unmute yourself and begin.

MR. PFEIFFER: Thank you, Ryan. And thank you to the Board again for hearing me. This is my third time speaking to you today And I appreciate you all making yourselves available and hearing my perspective on the various issues.

The only reason why I felt it was necessary to make another comment, I think it was mainly just that I'm kind of coming to California with a company that was founded in Washington to help California address the air quality standards here and across the United States. And I must reflect, I spend a substantial amount of time trying to figure out how to navigate CARB's policies, their programs. You know, it took me over a year and a half just to get an EO. And it's been very slow as a new manufacturer, very challenging as a new manufacturer to

feel like I have folks that I can actually work with closely and in confidence at CARB on a consistent basis, who are able to help new manufacturers work through these programs, especially as -- you know, I'm the CEO of our small company. You know, I don't hire a lobbyist to do this.

And that, you know, I really share the same goals. Our company really shares the same goals as ARB towards a cleaner more sustainable future. So I just wanted to thank you all again for having this space to hear all the manufacturers and public constituents speak, and then share that perspective as well. There's a lot of folks here vying in the same direction who -- who really want to work with you to make it happen. Thank you very much and have a great Holiday and New Year.

BOARD CLERK SAKAZAKI: Thank you.

Our next speaker is Beverly DesChaux. I have activated your speaker. You can unmute yourself and begin.

MS. DESCHAUX: Hi. Beverly DesChaux, Electric Auto Association, Central Coast, California.

I just wanted to comment that the only reason I said that about using the old buses and the trucks for homeless people is because Mary -- excuse me, Chair Nichols asked for that, what would be the great solution.

1 So I don't want you to think I'm a complete kook by coming
2 up with that.
3 (Laughter.)
4 MS. DESCHAUX: So I only did it in response to
5 your request for the best idea.
6 CHAIR NICHOLS: Okay
7 MS. DESCHAUX: I want so say -- I don't know if
8 you have some influence on the CPUC. I don't know how
9 guys interact, but I want to say that the cleaner the
10 grid, the cleaner the driving. And right now, the 21 CCAs
11 in California are being really challenged - that's a
12 polite word - for what the CPUC is doing against them in
13 siding with the investor-owned utilities, because we -- we
14 have achieved 88 percent clean energy. And that's our
15 focus. That's the CCA's focus to go completely renewable.
16 I also want to speak to Dr. Sherriffs that, no,
17 hydrogen fuel cells are not EVs. EV, you plug it into the
18 wall, and you get your electricity and it goes. And I
19 think that the reason -- I would like to have a paper sent
20 to you on all of the disadvantages of hydrogen fuel cells.
21 We believe that it's the fossil fuels industry's
22 way of staying in the game and that it's completely
23 financially unfeasible. And that we believe that Toyota
24 and Honda have abandoned it because they recognize the
25 disadvantages. And all materials in EV batteries are all

recyclable and we realize that cobalt is not good and it's being phased out.

BOARD CLERK SAKAZAKI: Thank you. Thank you.

Madam Chair, that concludes the list of open commenters.

CHAIR NICHOLS: Thank you.

ARB is fortunate indeed that we have so many people in our state, or who work in our state, or do business in our state, who want to participate in our proceedings. And I thank them all for coming and I wish everybody a very Happy Holiday. We celebrate in my household every single seasonal holiday, so I could recite them all, but let's just say Happy Holiday and know that I mean them all. I'm planning myself on a little Hanukkah celebration tonight. But moving onwards, we'll be doing Christmas too.

Anyway, I wish to thank my Board members as well. And unless there's any further business that comes before us, or any reason not to, I think I will declare that this meeting is adjourned.

(Thereupon the Air Resources Board meeting adjourned at 6:50 p.m.)

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 20th day of December, 2020.

JAMES F. PETERS, CSR
Certified Shorthand Reporter
License No. 10063