MEETING

STATE OF CALIFORNIA
AIR RESOURCES BOARD

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

THURSDAY, DECEMBER 12, 2019
9:01 A.M.

JAMES F. PETERS, CSR
CERTIFIED SHORTHAND REPORTER
LICENSE NUMBER 10063
BOARD MEMBERS:
Ms. Mary Nichols, Chair
Sandra Berg, Vice Chair
Dr. John Balmes
Mr. Hector De La Torre
Mr. John Eisenhut
Supervisor Nathan Fletcher
Senator Dean Florez
Supervisor John Gioia
Ms. Judy Mitchell
Senator Bill Monning
Mrs. Barbara Riordan
Supervisor Phil Serna
Dr. Alexander Sherriffs
Professor Daniel 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
Ms. Veronica Eady, Assistant Executive Officer
STAFF:

Ms. Annette Hebert, Assistant Executive Officer

Mr. Paul Arneja, Air Resources Engineer, In-Use Control Measures Section, Mobile Source Control Division (MSCD)

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

Mr. Tony Brasil, Branch Chief, Transportation and Clean Technology Branch, MSCD

Mr. Pippin Brehler, Senior Attorney, Legal Office

Ms. Cary Bylin, Manager, Energy Section, Industrial Strategies Division (ISD)

Mr. Michael Carter, Assistant Division Chief, MSCD

Mr. Ian Cecere, Attorney, Legal Office

Ms. Mary Jane Coombs, Branch Chief, Project Assessment Branch, ISD

Mr. Craig Duehring, Manager, In-Use Control Measures, Section, MSCD

Mr. David Edwards, Assistant Division Chief, AQPSD

Mr. Chris Franceschi, Air Pollution Specialist, In-Use Control Measures Section, MSCD

Ms. Jessica Gordon, Senior Attorney, Legal Office

Ms. Julia Gress, Air Pollution Specialist, Indoor Exposure Assessment Section, Health and Exposure Assessment Branch, Research Division (RD)

Mr. Scott King, Air Pollution Specialist, South Coast Air Quality Planning Section, AQPSD

Mr. Jack Kitowski, Division Chief, MSCD

Ms. Claudia Nagy, Senior Attorney, Legal Office
APPEARANCES CONTINUED

STAFF:
Mr. Keith Roderick, Air Resources Engineer, Project Assessment Branch, ISD
Mr. Rajinder Sahota, Division Chief, ISD
Ms. Elizabeth Scheehle, Division Chief, RD
Ms. Carol Sutkus, Manager, South Coast Air Quality Planning Section, AQPSD
Ms. Sylvia Vanderspek, Branch Chief, Air Quality Planning Branch, AQPSD
Ms. Sydney Vergis, Assistant Division Chief, MSCD
Mr. Jeffrey Williams, Air Pollution Specialist, Indoor Exposure Assessment Section, Health and Exposure Assessment Branch, RD
Mr. Pat Wong, Manager, Indoor Exposure Assessment Section, Health and Exposure Assessment Branch, RD

ALSO PRESENT:
Ms. Leslie Aguayo, Greenlining Institute
Ms. Meredith Alexander, CALSTART
Ms. Brenda Angulo
Mr. Sam Appel, Blue Green Alliance
Mr. Ruben Aronin, Better World Group Advisors
Mr. David Asti, Southern California Edison
Ms. Shayda Azamian, Leadership Counsel for Justice and Accountability
Mr. Daniel Barad, Sierra Club California
Mr. Will Barrett, American Lung Association
APPEARANCES CONTINUED

ALSO PRESENT:
Ms. Roxana Bekemohammadi, Ballard Power Systems
Ms. Brittany Blanco, Comite Civico del Valle
Mr. Nico Bouwkamp, California Fuel Cell Partnership
Dr. Jack Brouwer, University of California, Irvine
Ms. Clair Brown, 350 Bay Area Action
Mr. Todd Campbell, Clean Energy
Mr. Tim Carmichael, SoCalGas
Ms. Edith Cebreros, Communities for a New California
Ms. Kimberly Chavez
Mr. Alex Cherin, California Trucking Association
Intermodal Conference
Mr. Gary Conover, California Automotive Wholesalers Association
Mr. Paul Cort Earthjustice
Mr. Jon Costantino, Tradesman Advisors
Ms. Noelle Cremers, California Farm Bureau Federation
Mr. Carlo De La Cruz, Sierra Club
Mr. Adam Diaz, Warehouse Workers Resource Center
Mr. Ken Dunham, West Coast Lumber
Mr. Evan Edgar, California Compost Coalition
Mr. Sean Edgar, Clean Fleets
Ms. Dawn Fenton, Volvo Group North America
Dr. Philip Fine, South Coast Air Quality Management District
ALSO PRESENT:

Mr. Antonio Flores
Ms. Olga Flores
Dr. Andrew Frank, University of California, Davis
Ms. Katherine Garcia, Sierra Club
Ms. Kimberly Garcia, CAUSE
Mr. Michael Geller, Manufacturers of Emission Controls Association
Ms. Cristel Gonzalez, CAUSE
Ms. Yesenia Gonzalez, CAUSE
Mr. Robert Graham, EDV Commercialization
Mr. Ben Granholm, Western Propane Gas Association
Ms. Sara Greenwald, 350 Bay Area Action
Ms. Erin Grizard, Bloom Energy
Ms. Erin Guerrero, California Attractions and Parks Association
Mr. Adam Harpers, California Construction and Industrial Materials Association
Mr. Frank Harris, California Municipal Utilities Association
Ms. Jennifer Helfrich, Ceres
Mr. Allen Hernandez, Center for Community Action and Environmental Justice
Ms. Consuelo Hernandez, City of Sacramento
Mr. Miguel Hernandez, Comite Civico del Valle
Ms. Ocil Herrejon, CAUSE
ALSO PRESENT:
Ms. Kathy Hoang, Partnership for Working Families
Dr. Mark Horton, Health Organizations
Ms. Regina Hsu, Earthjustice
Mr. Alex Jackson, Natural Resources Defense Council
Ms. Courtney Jensen, TechNet
Ms. Julia Jordan, On Behalf of Katie Taylor
Ms. Kate Kanabay, Autocar Truck
Mr. Richard Katz, No Coal in Richmond
Mr. Ryan Kenny, Clean Energy
Ms. Candice Kim, Moving Forward Network
Ms. Kirstin Kolpichte, Calforests
Mr. Bernie Kotlier, International Brotherhood of Electrical Workers, National Electrical Contractors Association
Ms. Jennifer Kropke, International Brotherhood of Electrical Workers, National Electrical Contractors Association
Mr. Thomas Lawson, California Natural Gas Vehicle Coalition
Mr. Michael Lewis, Construction Industry
Mr. Gilberto Macias
Mr. Bill Magavern, Coalition for Clean Air
Mr. Christopher Mair, Assembly Member Evan Low
Mr. Kevin Maggay, SoCalGas
Mr. Jed Mandel, Truck and Engine Manufacturers Association
ALSO PRESENT:

Ms. Gabriela Mendez, Center for Community Action and Environmental Justice

Mr. Kevin Messner, Association of Home Appliance Manufacturers

Mr. Steve McCarthy, California Retailers Association

Mr. Paul Miller, Northeast States for Coordinated Air Use Management (NESCAUM)

Ms. Micah Mitrosky, International Brotherhood of Electrical Workers, Local 569

Mr. Matt Miyasato, South Coast Air Quality Management District

Ms. Lauren Navarro, Environmental Defense Fund

Mr. Evan Ochoa, CAUSE

Mr. Jimmy O'Dea, Union of Concerned Scientists

Mr. Luis Olmedo, Comite Civico del Valle

Ms. Citlalli Pacheco, CAUSE

Ms. Elodia Perez

Dr. Arnol Phadke, Lawrence Berkeley National Laboratory

Mr. Ray Pingle, Sierra Club California

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

Ms. Yesenia Ponce, CAUSE

Mr. Patricio Portillo, Natural Resources Defense Council

Mr. Prima Quesada, Ramar Foods

Ms. Priscilla Quiroz, Advanced Energy Economy, Solid Waste Association of North America
ALSO PRESENT:
Ms. Sarah Rees, South Coast Air Quality Management District
Mr. Miguel Rivera
Ms. Lorena Rodarte
Ms. Veronica Roman
Ms. Sasan Saadat, Earthjustice
Mr. Dan Sakaguchi, Communities for a Better Environment
Ms. Isumay Sandoval, Comite Civico del Valle
Mr. Chris Shimoda, California Trucking Association Intermodal Conference
Ms. Leah Silverthorn, California Chamber of Commerce
Mr. Mark Tang, Bay Area Air Quality Management District
Ms. Jessica Tovar, Moving Forward Network
Ms. Adu Trujillo
Mr. Mike Tunnell, American Trucking Association
Ms. Eileen Tutt, California Electric Transportation Coalition
Ms. Lilia Ulloa
Mr. Sergio Valenzuela, Comite Civico del Valle
Mr. Anthony Vallecillo, Warehouse Workers Resource Center
Ms. Anna Vargas, Communities for a New California
Ms. Iris Verduzco, Move Forward Network
Ms. Andrea Vidaurre, Center for Community Action and Environmental Justice
ALSO PRESENT:

Mr. Charles White, Western Independent Refiners Association

Mr. John White, Center for Energy Efficiency and Renewable Technologies

Ms. Janet Whittick, California Council for Environmental and Economic Balance

Ms. Joy Williams, Environmental Health Coalition

Mr. Vincent Wiraaatmadja, California Hydrogen Business Council

Ms. Joyce Xi, Union of Concerned Scientists

Mr. Josiah Young, Bioenergy Association of California

Mr. David Yow, Port of San Diego
| Item 19-12-1 | Vice Chair Berg | 4 |
| Item 19-12-9 | Vice Chair Berg | 5 |
| Executive Officer Corey | 7 |
| Staff Presentation | 8 |
| Board Discussion and Q&A | 22 |
| Mr. Mair | 27 |
| Dr. Fine | 30 |
| Mr. Tang | 32 |
| Ms. Jensen | 33 |
| Ms. Quiroz | 34 |
| Mr. Cort | 35 |
| Mr. McCarthy | 36 |
| Mr. Barad | 37 |
| Mr. Wiraatmadja | 37 |
| Mr. Young | 38 |
| Mr. Quesada | 39 |
| Ms. Grizard | 42 |
| Dr. Brouwer | 44 |
| Mr. John White | 52 |
| Mr. Carmichael | 55 |
| Mr. Jackson | 57 |
| Board Discussion and Q&A | 63 |
| Motion | 64 |
| Board Discussion and Q&A | 64 |
| Vote | 82 |

Item 19-12-3

| Chair Nichols | 83 |
| Executive Officer Corey | 83 |
| Staff Presentation | 85 |
| Ms. Rees | 98 |
| Ms. Hsu | 100 |
| Mr. Magavern | 102 |
## INDEX CONTINUED

<table>
<thead>
<tr>
<th>Item 19-12-3 (continued)</th>
<th>105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Barrett</td>
<td></td>
</tr>
<tr>
<td>Board Discussion and Q&amp;A</td>
<td>107</td>
</tr>
<tr>
<td>Motion</td>
<td>114</td>
</tr>
<tr>
<td>Vote</td>
<td>114</td>
</tr>
</tbody>
</table>

### Afternoon Session

<table>
<thead>
<tr>
<th>Item 19-12-4</th>
<th>116</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair Nichols</td>
<td></td>
</tr>
<tr>
<td>Board Member Sperling</td>
<td>119</td>
</tr>
<tr>
<td>Chair Nichols</td>
<td>120</td>
</tr>
<tr>
<td>Executive Officer Corey</td>
<td>121</td>
</tr>
<tr>
<td>Staff Presentation</td>
<td>122</td>
</tr>
<tr>
<td>Mr. Miyasato</td>
<td>139</td>
</tr>
<tr>
<td>Mr. Tang</td>
<td>141</td>
</tr>
<tr>
<td>Mr. Lewis</td>
<td>142</td>
</tr>
<tr>
<td>Mr. Miller</td>
<td>148</td>
</tr>
<tr>
<td>Mr. Asti</td>
<td>154</td>
</tr>
<tr>
<td>Mr. Bouwkamp</td>
<td>155</td>
</tr>
<tr>
<td>Mr. Harris</td>
<td>157</td>
</tr>
<tr>
<td>Ms. Kanabay</td>
<td>159</td>
</tr>
<tr>
<td>Mr. Geller</td>
<td>161</td>
</tr>
<tr>
<td>Mr. Frank</td>
<td>163</td>
</tr>
<tr>
<td>Mr. Pingle</td>
<td>165</td>
</tr>
<tr>
<td>Ms. Fenton</td>
<td>167</td>
</tr>
<tr>
<td>Ms. Quiroz</td>
<td>169</td>
</tr>
<tr>
<td>Ms. Mitrosky</td>
<td>171</td>
</tr>
<tr>
<td>Ms. Kropke</td>
<td>172</td>
</tr>
<tr>
<td>Mr. Yow</td>
<td>174</td>
</tr>
<tr>
<td>Mr. Granholm</td>
<td>176</td>
</tr>
<tr>
<td>Ms. Williams</td>
<td>177</td>
</tr>
<tr>
<td>Mr. Portillo</td>
<td>179</td>
</tr>
<tr>
<td>Mr. Mandel</td>
<td>181</td>
</tr>
<tr>
<td>Mr. Graham</td>
<td>187</td>
</tr>
<tr>
<td>Mr. Campbell</td>
<td>189</td>
</tr>
<tr>
<td>Ms. Silverthorn</td>
<td>191</td>
</tr>
<tr>
<td>Mr. Conover</td>
<td>193</td>
</tr>
<tr>
<td>Mr. Dunham</td>
<td>193</td>
</tr>
<tr>
<td>Mr. Charles White</td>
<td>194</td>
</tr>
<tr>
<td>Ms. Guerrero</td>
<td>196</td>
</tr>
<tr>
<td>Mr. McCarthy</td>
<td>198</td>
</tr>
<tr>
<td>Ms. Helfrich</td>
<td>199</td>
</tr>
<tr>
<td>Mr. Kotlier</td>
<td>201</td>
</tr>
<tr>
<td>Ms. Whittick</td>
<td>203</td>
</tr>
<tr>
<td>Ms. Hernandez</td>
<td>204</td>
</tr>
<tr>
<td>Item 19-12-4 (continued)</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Mr. Saadat</td>
<td>206</td>
</tr>
<tr>
<td>Ms. Greenwald</td>
<td>207</td>
</tr>
<tr>
<td>Ms. Brown</td>
<td>208</td>
</tr>
<tr>
<td>Mr. Katz</td>
<td>209</td>
</tr>
<tr>
<td>Ms. Kim</td>
<td>212</td>
</tr>
<tr>
<td>Ms. Tovar</td>
<td>213</td>
</tr>
<tr>
<td>Ms. Verduzco</td>
<td>214</td>
</tr>
<tr>
<td>Dr. Horton</td>
<td>216</td>
</tr>
<tr>
<td>Mr. Barrett</td>
<td>218</td>
</tr>
<tr>
<td>Mr. Kenny</td>
<td>219</td>
</tr>
<tr>
<td>Mr. Costantino</td>
<td>220</td>
</tr>
<tr>
<td>Ms. Navarro</td>
<td>221</td>
</tr>
<tr>
<td>Mr. Lawson</td>
<td>223</td>
</tr>
<tr>
<td>Dr. Phadke</td>
<td>224</td>
</tr>
<tr>
<td>Mr. Cherin</td>
<td>226</td>
</tr>
<tr>
<td>Ms. Cremers</td>
<td>227</td>
</tr>
<tr>
<td>Ms. Aguayo</td>
<td>229</td>
</tr>
<tr>
<td>Mr. Evan Edgar</td>
<td>231</td>
</tr>
<tr>
<td>Mr. De La Cruz</td>
<td>232</td>
</tr>
<tr>
<td>Ms. Katherine Garcia</td>
<td>234</td>
</tr>
<tr>
<td>Mr. O'Dea</td>
<td>235</td>
</tr>
<tr>
<td>Ms. Flores</td>
<td>236</td>
</tr>
<tr>
<td>Mr. Flores</td>
<td>237</td>
</tr>
<tr>
<td>Ms. Rodarte</td>
<td>238</td>
</tr>
<tr>
<td>Ms. Ulloa</td>
<td>239</td>
</tr>
<tr>
<td>Ms. Roman</td>
<td>240</td>
</tr>
<tr>
<td>Ms. Trujillo</td>
<td>241</td>
</tr>
<tr>
<td>Ms. Chavez</td>
<td>243</td>
</tr>
<tr>
<td>Mr. Rivera</td>
<td>244</td>
</tr>
<tr>
<td>Ms. Mendez</td>
<td>245</td>
</tr>
<tr>
<td>Ms. Angulo</td>
<td>246</td>
</tr>
<tr>
<td>Ms. Vidaurre</td>
<td>248</td>
</tr>
<tr>
<td>Mr. Allen Hernandez</td>
<td>250</td>
</tr>
<tr>
<td>Mr. Sakaguchi</td>
<td>252</td>
</tr>
<tr>
<td>Ms. Pinto-Cabrera</td>
<td>254</td>
</tr>
<tr>
<td>Mr. Maggay</td>
<td>256</td>
</tr>
<tr>
<td>Ms. Cebreros</td>
<td>258</td>
</tr>
<tr>
<td>Ms. Vargas</td>
<td>259</td>
</tr>
<tr>
<td>Mr. Harper</td>
<td>261</td>
</tr>
<tr>
<td>Mr. Tunnell</td>
<td>262</td>
</tr>
<tr>
<td>Ms. Blanco</td>
<td>264</td>
</tr>
<tr>
<td>Ms. Sandoval</td>
<td>265</td>
</tr>
<tr>
<td>Mr. Miguel Hernandez</td>
<td>265</td>
</tr>
<tr>
<td>Mr. Valenzuela</td>
<td>267</td>
</tr>
<tr>
<td>Mr. Olmedo</td>
<td>269</td>
</tr>
<tr>
<td>Item 19-12-4 (continued)</td>
<td>Page</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Ms. Xi</td>
<td>270</td>
</tr>
<tr>
<td>Mr. Shimoda</td>
<td>271</td>
</tr>
<tr>
<td>Mr. Cort</td>
<td>274</td>
</tr>
<tr>
<td>Ms. Alexander</td>
<td>276</td>
</tr>
<tr>
<td>Ms. Sean Edgar</td>
<td>278</td>
</tr>
<tr>
<td>Ms. Tutt</td>
<td>280</td>
</tr>
<tr>
<td>Ms. Azamian</td>
<td>281</td>
</tr>
<tr>
<td>Ms. Perez</td>
<td>283</td>
</tr>
<tr>
<td>Mr. Macias</td>
<td>284</td>
</tr>
<tr>
<td>Ms. Jordan</td>
<td>284</td>
</tr>
<tr>
<td>Mr. Magavern</td>
<td>287</td>
</tr>
<tr>
<td>Ms. Bekemohammadi</td>
<td>293</td>
</tr>
<tr>
<td>Mr. Appel</td>
<td>294</td>
</tr>
<tr>
<td>Ms. Hoang</td>
<td>296</td>
</tr>
<tr>
<td>Mr. Vallecillo</td>
<td>298</td>
</tr>
<tr>
<td>Mr. Diaz</td>
<td>300</td>
</tr>
<tr>
<td>Ms. Kimberly Garcia</td>
<td>301</td>
</tr>
<tr>
<td>Ms. Pacheco</td>
<td>303</td>
</tr>
<tr>
<td>Mr. Ochoa</td>
<td>305</td>
</tr>
<tr>
<td>Ms. Ponce</td>
<td>306</td>
</tr>
<tr>
<td>Ms. Cristel Gonzalez</td>
<td>307</td>
</tr>
<tr>
<td>Ms. Yesenia Gonzalez</td>
<td>309</td>
</tr>
<tr>
<td>Ms. Herrejon</td>
<td>310</td>
</tr>
<tr>
<td>Mr. Aronin</td>
<td>312</td>
</tr>
<tr>
<td>Ms. Kolpitske</td>
<td>314</td>
</tr>
<tr>
<td>Board Discussion and Q&amp;A</td>
<td>316</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item 19-12-5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair Nichols</td>
<td>372</td>
</tr>
<tr>
<td>Executive Officer Corey</td>
<td>372</td>
</tr>
<tr>
<td>Staff Presentation</td>
<td>373</td>
</tr>
<tr>
<td>Mr. Messner</td>
<td>378</td>
</tr>
<tr>
<td>Mr. Barrett</td>
<td>380</td>
</tr>
<tr>
<td>Motion</td>
<td>382</td>
</tr>
<tr>
<td>Vote</td>
<td>382</td>
</tr>
</tbody>
</table>

Public Comment            | 383  |
Adjournment                | 383  |
Reporter's Certificate     | 384  |
PROCEEDINGS
VICE CHAIR BERG: Good morning. If I can encourage everyone to take their seats, please.

Well good morning, everyone and Happy December. Happy Holidays. It's so hard to believe that in a very short period of time, we are going to be welcoming in 2020. So -- and I started on the Board in 2004 and we were talking about all of these implementation dates and I was thinking, wow, that sounds so far away and here we are.

So welcome, we have a very busy two-day Board meeting. We're excited for today. In a lot of ways it's a landmark. And so we're very pleased that you're going to be here with us.

So with that, I'd like to open the December 12th, 2019 public meeting of the California Air Resource Board and we'll start out with our Pledge of Allegiance.

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

VICE CHAIR BERG: And if we can have the Clerk of the Board call the roll, please.

BOARD CLERK CARLOS: Dr. Balmes?
BOARD MEMBER BALMES: Here.

BOARD CLERK CARLOS: Mr. De La Torre?
BOARD MEMBER DE LA TORRE: Here.

BOARD CLERK CARLOS: Mr. Eisenhut?
BOARD MEMBER EISENHUT: Here.
BOARD CLERK CARLOS: Supervisor Fletcher?
Senator Florez?
Assembly Member Garcia?
Supervisor Gioia?
BOARD MEMBER GIOIA: Here.
BOARD CLERK CARLOS: Ms. Mitchell?
BOARD MEMBER MITCHELL: Here.
BOARD CLERK CARLOS: Senator Monning?
BOARD MEMBER MONNING: Here.
BOARD CLERK CARLOS: Mrs. Riordan?
BOARD MEMBER RIORIAN: Here.
BOARD CLERK CARLOS: Supervisor Serna?
Dr. Sherriffs?
BOARD MEMBER SHERIFFS: Here.
BOARD CLERK CARLOS: Professor Sperling?
BOARD MEMBER SPERLING: Here.
BOARD CLERK CARLOS: Ms. Takvorian?
Vice Chair Berg?
VICE CHAIR BERG: Here.
BOARD CLERK CARLOS: Chair Nichols?
Madam Vice Chair, we have a quorum.
VICE CHAIR BERG: Thank you very much.
Chair Nichols is on her way. She has landed and
in the car. And she will be joining us very momentarily.
But I didn't want our participants to get concerned that she would -- that something came up and she wouldn't be here. She will definitely be here.

And until that, I will be filling in to get us kicked off today, because we do have a full agenda.

So starting with our few announcements before we get started. For safety reasons, please note the emergency exits in the rear of the room and through the lobby. In the event of a fire alarm, we are required to evacuate this room and immediately go down the stairs to the left of the elevator and out the building. When the all-clear signal is given, we will return and resume our hearing.

We'd like to let you know that anyone who wishes to testify should fill out a request-to-speak card available in the lobby outside the Board room.

Please return it to the Board assistant or the Board Clerk prior to the commencement of the item.

Also, speakers be aware that the Board will impose a three-minute time limit. And depending on the item, we have the ability to look at how many people will be speaking. And if we need to adjust that, we will do so before an item starts.

Please state your first and last name when you come up to the podium. We will be using both podiums here
to my right and to my left. And just for those of us, this is still a little bit new to us, there's actually buttons on those speaker -- on the podiums that rise and has it adjust to your height. So you might want to try that cool little feature.

Please put your testimony into your own words. It's easier for the Board to follow if you go straight to your point, and remember that we do have your written testimony as well.

So with that, I might mention -- we'll mention this again, but there is a display outside of all sorts of electric trucks of all classes. And it's right out in front on 10 Street and a few on "I". And they're going to be there all through lunch. We really encourage you to stop and see these new technologies and chat with people. It's -- I've already been down there. And it's -- they've got some really interesting trucks of all categories.

So with that, I think we'll go ahead and move to our first item. Our first item is the only item on our consent calendar. And it is Agenda Item 19-12-1 Proposed 2019 Amendments to the Area Designations for State Ambient Air Quality Standards.

Were there any comments received on this item during public comment period?

BOARD CLERK CARLOS: No.
VICE CHAIR BERG: We have considered the comments and that were received prior and have determined that they are non-substantive and thus proceeding with this item on consent calendar.

I'd like to ask my fellow Board members if anybody would like to take this off of consent?

BOARD MEMBER RIORDAN: Madam Chairman, I'd just like to move the item, which is Resolution 19-30.

VICE CHAIR BERG: That's great. I'll close the record and then entertain a second.

BOARD MEMBER Balmes: Second.

VICE CHAIR BERG: All in favor?

(Unanimous aye vote.)

(Chair Nichols, Board Members Fletcher, Florez, Serna, Takvorian not present.)

VICE CHAIR BERG: Any opposed?

Any abstentions?

Motion passes.

So we'll go ahead and get started with our first public item. The next item for our consideration is proposal that would establish greenhouse gas standards for the California Public Utilities Commission's Fuel Cells Net Energy Metering Program, also known as the Fuel Cell NEM Program.

The Fuel Cell NEM Program was the -- was first
established by the Legislature in 2003 and is overseen by the CPUC. And it is implemented by three investor-owned electric utilities. Assembly Bill 1214 established the Fuel Cell NEM Program to, among other goals, encourage substantive private investment in these energy resources and reduce costs for these electricity suppliers. The proposed regulation before us today was prepared in response to Assembly Bill 1637, which extended the Fuel Cell NEM Program through 2021. It requires CARB to set greenhouse gas emission standards for the Fuel Cell NEM Program and those standards must ensure that fuel cells that receive the benefit under the CPUC Fuel Cell NEM Program reduces greenhouse gas emissions relative to the electrical grid resource that it displaces by the fuel cell.

That's a mouthful.

(Vice Chair Berg: In addition, Assembly Bill 1637 requires the standard to be updated every three years with applicable standards for each intermediate year. This is an -- it is important to note that the fuel cells do play an important role supplying energy and have the benefit of no combustion processes that it would result in local air impacts.

Finally, in context of the fire danger that the
state has been facing and the associated public safety power shutoffs that are impacting hundreds of thousands of household, businesses, hospitals, and schools, I would note that fuel cells can generate power when the electricity grid is shut down, and do so without associated criteria and toxic pollutants emitted by diesel generators.

Mr. Corey, would you please introduce this item?

EXECUTIVE OFFICER COREY: Yes. Thanks, Vice Chair Berg.

The proposed regulation before you, as you noted, addresses the requirements specified in Assembly Bill 1637 that CARB develop greenhouse gas emission standards for the California Public Utilities Commission's Fuel Cell Net Energy Metering Program, or NEM Program.

Staff has been working with the California Energy Commission, California Public Utilities Commission, and stakeholders to evaluate options for calculating the fuel cell NEM GHG emission standards. The proposed regulation conforms with statutory requirements. And staff believes the proposal presented today uses the best methodology to achieve the goals of the bill.

Adoption of the proposed regulation would set Fuel Cell NEM GHG emissions standards through 2022 and establish a process for updating the emission standards
every three years beginning in 2022. The standards are based on data that reflect operation of the grid and decrease over time to reflect California's expected GHG emission reductions in the electricity sector.

    Now, I'd like to have Carey Bylin of our Industrial Strategies Division to begin the staff presentation.

    Carey.

    (Thereupon an overhead presentation was presented as follows.)

    ISD ENERGY SECTION MANAGER BYLIN: Thank you, Mr. Corey, and good morning. Today, I'll provide background on fuel cells and the Fuel Cell Net Energy Metering, or NEM, Program, discuss the mandates set by AB 1637 and our process to develop greenhouse gas emission standards to comply with that mandate, and close with a summary and recommendations to the Board.

    --o0o--

    ISD ENERGY SECTION MANAGER BYLIN: The Fuel Cell NEM Program was created through AB 1214 in 2003 to encourage substantial private investment in fuel cells. Per AB 1214, customer generators that installed qualifying fuel cells by January 1st, 2006 could receive program benefits that included generation rate credits and avoided non-bypassable utility charges for onsite electricity
generation. The program was and still is overseen by the California Public Utilities Commission, CPUC, and is administered by the major investor-owned electric utilities, Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric.

Since AB 1214 was signed into law, various legislative bills have extended and expanded the program. AB 67 was passed in 2005 and extended the Fuel Cell NEM Program to fuel cells installed by January 1st of 2010.

In 2009, AB 1551 extended the program an additional four years to cover fuel cells installed by January 1st, 2014. In 2012, AB 2165 extended the program for another year and expanded the eligible generating capacity from about 122 megawatts to 500 megawatts.

In addition, for the first time, qualifying fuel cells were required to meet a greenhouse gas emissions standard.

And finally, AB 1637 became law in 2016 extending the CPUC's Fuel Cell NEM Program tariff to fuel cells in operation before the end of 2021 and expanding the size of the fuel cell installation that could qualify. It also directed CARB to develop Fuel Cell NEM GHG emission standards.

We are here today with a proposal for those Fuel Cell NEM GHG emission standards. The CPUC will continue
to implement the standards.

--o0o--

ISD ENERGY SECTION MANAGER BYLIN: Before going into further details on the Fuel Cell NEM Program, I will give some brief background about the fuel cell technology. Fuel cells use an electrochemical process to convert fuel into electricity. Because the process occurs at temperatures that are lower than combustion temperatures, there are significantly lower criteria pollutants, such as nitrogen oxides, or NOx. Fuel cells can also have higher efficiencies than combustion technology, meaning more electricity is produced from an equivalent amount of fuel, resulting in lower fuel requirements.

It has been found that fuel cells emit about 75 to 90 percent less NOx and about 75 to 80 percent less particulate matter than other technologies. In other words, fuel cells provide a significant benefit for air quality relative to even the cleanest natural gas generator.

Finally, when renewable hydrogen is used as a fuel source, only water is emitted from the conversion process.

--o0o--

ISD ENERGY SECTION MANAGER BYLIN: To be eligible
for CPUC's Fuel Cell NEM Program, an individual fuel cell resource can be up to five megawatts. There is a minimum efficiency requirement of 60 percent. And eligible fuel cells must meet the applicable criteria pollutant emission standards set by CARB's Distributed Generation Certification Program.

The benefits authorized by AB 1637 can be applied to up to 500 megawatts of fuel cell resources statewide. The pie chart shows the nearly 81,000 megawatts of in-state generation capacity in 2018, which includes biomass, geothermal, hydroelectric, natural gas-fired, nuclear, and renewable power plants.

The additional 500 megawatts of fuel cell generation allowed by AB 1637 is added to show its effect on the system overall. Five hundred megawatts is equal to less than one percent of the total 2018 in-state generation capacity.

Per the air quality benefits mentioned on the previous slide, generating electricity from 500 megawatts of fuel cells can result in up to 200,000 pounds of avoided NOx emissions per year, when compared to the cleanest natural gas powered generator. Air quality benefits would increase even further, if the fuel cell were to replace dirtier electricity generation.

As mentioned, AB 2165 required that all
qualifying fuel cells meet GHG emission standards for the first time, and mandated the use of the GHG emission standards developed for the CPUC's Self Generation Incentive Program, or SGIP.

Then, in 2016, AB 1637 directed CARB to develop new GHG standards for CPUC's Fuel Cell NEM Program.

---o0o---

ISD ENERGY SECTION MANAGER BYLIN: AB 1637 directs CARB to establish annual GHG emission standards that reduce greenhouse gas emissions compared to the electrical grid resources, including renewable resources, that the fuel cell electrical generation resource displaces, accounting for both procurement and operation of the electrical grid.

CARB is to establish the schedule of GHG emission standards and update the standards every three years with applicable standards for each intervening year.

---o0o---

ISD ENERGY SECTION MANAGER BYLIN: I have mentioned that prior to AB 1637, the Fuel Cell NEM Program relied on SGIP GHG emission standards. Because of this, CARB staff has received feedback that compares the proposed Fuel Cell NEM GHG emission standards to SGIP standards. The language in AB 1637 itself does not state or imply any connection between Fuel Cell NEM GHG emission
standards and those set by SGIP and they are different programs with different mandates, scope, and approach.

In terms of the statutory mandate for setting the applicable GHG emission standards, the SGIP statutory requirement is very general, linked to the reductions in the California Global Warming Solutions Act of 2006, or AB 32 - specifically that California reduce GHG emissions to 1990 levels by 2020.

In comparison, AB 1637 gives CARB very specific direction to set the Fuel Cell NEM GHG standards relative to the electrical grid resource that is displaced by the participating fuel cell.

In terms of the technologies eligible to receive benefits under the programs, SGIP covers numerous distributed generation technologies, such as wind turbines, internal combustion engines, microturbines, energy storage, and fuel cells. The Fuel Cell NEM Program only applies to fuel cells.

Application of the GHG standards is also different. Compliance with SGIP standards is based on a single determination of eligibility based on first-year and ten-year average GHG emission standards. And the ten-year standard is larger than the first-year standard because of an expected and normal decline in efficiency that some technologies experience over time.
This is quite different from the Fuel Cell NEM Program and the standards, which, according to our proposal, will decline by at least two and a half percent every year and for which eligibility must be reverified annually.

This year-over-year two and a half percent decline aligns with the 2030 integrated resources planning GHG targets for the electricity sector overall. These planning targets were established -- were required by SB 350 and take into account the 2030 RPS target set by SB 100.

Importantly, while SGIP allows increases in GHG emissions from the eligible technology over time, the proposed Fuel Sell NEM GHG emission standard requires lower GHG emissions year on year. Finally, SGIP has a renewable fuel requirement of 50 percent in 2019, which goes to 100 percent in 2020. Because of the renewable fuel requirement, the SGIP program essentially moves from having a GHG requirement to a biofuel requirement.

This means that beginning in 2020, no technologies that operate on natural gas will be eligible for SGIP. There is no renewable fuel requirement in the Fuel Cell NEM Program, and by implication fuel cells operating on natural gas can qualify for the program.

However, the declining standard means that over
time fuel cells must switch renewable fuel or otherwise make significant efficiency improvements to continue to be eligible for the Fuel Cell NEM Program.

--o0o--

ISD ENERGY SECTION MANAGER BYLIN: Now, I'd like to give an overview of the process leading up to the proposed regulation. Between 2017 and 2019, CARB staff held three workshops and one working group meeting to discuss the Fuel Cell NEM standards. These informal pre-rulemaking discussions provided staff with useful information that was considered during the development of the proposed regulation.

Throughout the process, CARB staff proposed and considered five different options for determining the Fuel Cell NEM GHG emission standards. One conclusion that came from the workshops and the discussions with State agencies and to which stakeholders generally agreed is that the electrical grid resources most likely to be displaced by fuel cells is the marginal generator.

Data on the operation of California's electrical grid indicate that, for 2017, natural gas power plants are the marginal generator more than 98 percent of the time, and renewable power plants are the marginal generator the rest of the time.

--o0o--
ISD ENERGY SECTION MANAGER BYLIN: Though AB 1637 does not provide any statutory requirements related to average grid emissions from all of the generating resources used in the state, some stakeholders have suggested the average grid GHG emissions are a relevant benchmark. Therefore, with this slide, we will explain average grid GHG emissions and how they are different from the marginal generator GHG emissions.

The average GHG emission rate for California electricity generation accounts for emissions from all power plants that operated during the year. The pie chart shows the mix of power generation capacity that is included in calculating California's average GHG emission rate. And it includes fossil fuel, nuclear, hydroelectric, and renewable generation.

Marginal generators are a subset of all electricity generation in California. And whether they run or not depends on electricity demand. They are the last power plant that is activated to meet an incremental change in electricity demand.

Electricity grid operations in California are structured such that the cleanest and lowest-cost power is usually dispatched first. The marginal power plants are always the most expensive available power plant and also tend to be the most GHG intensive.
Only the GHG emissions from the marginal plants are used to calculate the marginal GHG emission rate. This graphic illustrates the concept of the marginal generator. The electricity demand is at this level, and as mentioned, the cheapest and usually cleanest power plants will be dispatched first. As the electricity demand increases, the more costly and usually more polluting plants come online until the electricity demand is met.

The last power plant, which is dispatched to meet electricity demand is the marginal generator and it is represented here by the black rectangle. When a one megawatt fuel cell is installed, that marginal generator doesn't need to be dispatched.

Natural gas power plants are almost always the last plants dispatched to serve electricity loads, because they have the greatest ability to increase and decrease output in response to the needs of the electrical grid.

We want to note that the idea of a marginal generator is not a new one. It has been used for about a decade in the Mandatory Greenhouse Gas Reporting Regulation, the Greenhouse Gas Inventory for California, and the Cap-and-Trade Program. It is presented in the form of the unspecified electricity import emission factor, which has a calculated value of 428 kilograms of
greenhouse gases per megawatt hour. This number represents the average GHG efficiency of a natural combined cycle plant -- combined cycle plant operating within the broader western electrical grid.

---o0o---

ISD ENERGY SECTION MANAGER BYLIN: This slide will show another way to consider the difference between the average and marginal GHG emission rates. All emission rates are noted in kilograms of carbon dioxide equivalent per megawatt hour.

One of the least efficient natural gas power plants, the so-called peaker plant, has an average 2017 emission rate of 560 kilograms. In the bucket shown on the right, this plant is represented by the black rectangle at the top.

For 2017, the average marginal GHG emission rate for all natural gas plants in California was 414 kilograms. This represents emission rates of both peaker plant and the more efficient natural gas combined cycle power plants weighted by the number of hours that each operates.

Here, we visually represent this by showing the relatively small bucket with peaker plants on the margin and the much larger buck with the cleaner natural gas combined cycle plants, which are represented in gray also
on the margin.

The proposed 2017 Fuel Cell NEM standards take into account the amount of time that natural gas generators and renewable generators were on the margin in 2017, and the calculated standard is 409 kilograms.

This calculation is represented with the buckets that show when peaker plants are on the margin, natural gas combined cycle plants are on the margin, plus a smaller bucket that represents the 110 hours that renewables were on the margin in 2017.

We presented for comparison the 2017 average GHG emission rate for all power plants operating in California, and this value is 228 kilograms. Once again, this pie chart shows the power generation capacity mix that is used to calculate the average GHG emission rate. The mix includes biomass, geothermal, hydroelectric, natural gas-fired, nuclear, and renewable power plants.

--o0o--

ISD ENERGY SECTION MANAGER BYLIN: This slide shows the proposed and potential GHG emission standards for the Fuel Cell NEM Program over a ten-year period. The proposal sets the 2017 standard at 409 -- 409 kilograms and cleans at a minimum rate of two and a half percent per year, reducing to 360 kilograms. And again, that's per megawatt hour in 2022.
The two and a half percent reduction aligns with the 2030 GHG emissions planning target for the electricity sector, that was calculated by CARB in response to SB 350 and that reflects the more recent 2030 Renewables Portfolio Standard requirements set by SB 100.

This decline ensures that fuel cells are reducing GHG emissions in line with the GHG emission planning targets that CARB has set for the electricity sector.

For 2023, and every three years through -- every three years after, through 2047, the standard will be recalculated using the latest available data. The method for calculating the standard takes into account the average marginal natural gas generator GHG emission rate for California using public data collected by the CEC, then adjust that emission rate by the number of hours that renewables are the marginal generator, based on public data from the California Independent System Operator. Finally, the standard will be reduced by two and a half percent each year.

If any calculated standard is higher than the prior year's standard, the standard will instead be set by reducing the prior year's standard by two and a half percent. This methodology ensures that Fuel Cell NEM GHG emission standards continue to decrease over time.

--o0o--
ISD ENERGY SECTION MANAGER BYLIN: The proposal before the Board today starts with actual data, which therefore reflects actual emissions based on the operation of the electricity grid. The method incorporates renewables in two ways. Renewables procurement is accounted for by considering the amount of time that renewables are on the margin. Also, reducing the GHG emission standards annually by two and a half percent aligns with the 2030 GHG emission planning targets for the electricity sector, which corresponds to the 2030 renewables portfolio standard requirements set by the Legislature. And operations of the grid continue to be reflected in future updates of the standard, which will rely on the most recently available public data that reflect actual grid operations.

--o0o--

ISD ENERGY SECTION MANAGER BYLIN: In summary, the proposed Fuel Cell NEM -- NEM standards meets -- meet the mandate specified in AB 1637. They encourage near-term availability and deployment of fuel cells, and promote greenhouse gas emission reductions and local air quality benefits.

The near-term availability of fuel cells is an important feature of this proposed regulation, as only fuel cells installed by the end of 2021 are eligible for
the Fuel Cell NEM Program benefits.

These fuel cells could help with the immediate need to -- could help with the immediate need to address the electricity disruptions that occur during the Public Safety Power Shutoff events. Further, they could be used in place of diesel generators, thereby avoiding the public health risk caused by diesel particulate matter.

The standard also declines consistently, promoting replacement of fossil fuels with renewable gas over time in line with the 2017 Scoping Plan Update, which stated the need to move away from natural gas toward cleaner fuels. According to our estimates, some fuel cells will have to begin using biogas in 2025 to be able to meet the proposed standards.

Finally, the proposal aligns with other State policies to achieve legislatively mandated climate goals and a cleaner electrical grid.

--o0o--

ISD ENERGY SECTION MANAGER BYLIN: For these reasons, staff recommends that the Board approve the proposed regulation.

CHAIR NICHOLS: Thank you. Sorry. I walked in after the beginning of your presentation, but I did have an opportunity to review this material, as well as some of the papers that were submitted on this issue last night.
And I've had a couple of calls over the last few weeks about this issue. Who would have thought that something called Fuel Cell Net Energy Metering would engender as much excitement as this has.

(Laughter.)

CHAIR NICHOLS: But I do want to underscore that this is really very important and I'd like to sort of give you an opportunity, either you or one of your colleagues, to explain why this matters, why are we here, and why is this so important. I know the Legislature told us to do it, but beyond that.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA:

Good morning, Chair Nichols, Board members. I can take an attempt to under -- to describe why we think this is important.

So we have two -- two things that we're planning for. The immediate need is the power shutoffs, and the immediate need is to make sure that there's reliable energy available when we have a grid that's in flux and looking to become more resilient. But we also have long-term planning for climate targets and air quality targets.

And in both of these, fuel cells have an important role that they can play. So as we think about a horizon for funding, which 2021, and we think about
funding to get some of this long-term technology deployed today, fuel cells meet that requirement. And so setting a standard that not only makes it possible to deploy fuel cells, in the near term, but also makes sure that they're available for the long term for our long-term goals.

And the standard itself reflects the best science, the best data. It represents almost two or three years of technical work and technical discussions that have happened. We understand that there are concerns that this somehow locks in natural gas assets into the system. We don't believe it does.

The declining standard incentivizes renewable biogas use or greater efficiency in fuel cells themselves, or it requires us to think about getting renewable hydrogen into the natural gas infrastructure and decarbonizing the natural gas system, which is a long-term goal for the State of California.

And for all those reasons, we do think that this is a good technology to try and get deployed to meet multiple objectives.

CHAIR NICHOLS: And not to telegraph my thinking too far in advance, but is there anything sacred about the slope of the reduction that you have put out there, the two and a half? I know you said it's consistent with the 2017 Scoping Plan, but 2017 isn't the last scoping plan
INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: The two and a half percent also represents the linear decline in SB 100, which set the RPS at 100 -- or 60 percent in 2030, and that was passed in 2018.

And so we do have a decline that represents recently legislation on how the grid should become more cleaner over time. Certainly, that's one factor that we looked at. There are other slopes that could be looked at when we think about other variables, but we wanted to align with existing statutory mandates for the overall grid.

CHAIR NICHOLS: Yeah, and that's a very reasonable principle. But let's say this Board decided that they wanted to push faster, farther, that would not be -- would not undermine the successful implementation of the program. It would just get us more renewable hydrogen faster presumably.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: That's correct. The way that we looked at the analysis, what we see is either the technology has to significantly become more efficient year over year, or we're integrating renewables whether it's hydrogen or renewable gas towards the middle of the next decade. An increase in slope would make sure that -- that renewable
integration happens sooner than what the schedule has right now.

CHAIR NICHOLS: Okay. Thank you.

With that, without further ado, we do have a list of people who have signed up to testify. So let's begin.

BOARD MEMBER SPERLING: Chair Nichols?

CHAIR NICHOLS: Yes.

BOARD MEMBER SPERLING: Can I just ask one clarifying question?

CHAIR NICHOLS: Yes, you may.

BOARD MEMBER SPERLING: I don't think you said anything about replacing diesel generators until the very end. My understanding, following this industry over decades, is that they are more expensive and you only use them if there's some unusual reason. And that unusual reason usually is because you need a reliable backup, like at a hospital, or, for instance, in some of these places that are vulnerable to cutoffs.

So the marginal generator it seems to me is more likely to be a diesel generator than a natural gas power plant, is that not right?

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: So in looking at the way the legislation is written and the words that were looked at by our attorney several times to make sure we got this absolutely right, the legislation is
relative to the overall grid and what is on the margin of
the overall grid.

In terms of the application, yes, they could
replace diesel generators, which means that you'll get --
which means you're actually getting a much higher benefit
for PM when you put in a fuel cell versus some of other
kind of technology. But the mandate was to think about
the overall grid. So we tried to stick to that piece of
it.

BOARD MEMBER SPERLING: Well, not just -- just to
not telegraph too much what I think --

(Laughter.)

BOARD MEMBER SPERLING: -- is that these are
providing a huge benefit and they're not -- they're never
going to play a major role, because they're always going
to be more expensive. So let's think about how to
accomplish the goal of motivating investment and
innovation.

CHAIR NICHOLS: Okay. Without further ado, let's
begin the witness list.

Mr. Mair.

MR. MAIR: Good morning, Chair, Vice Chair, and
Board members. My name is Christopher Mair and I work for
Assembly Member Evan Low. He wishes he could be here
today, but had a prior commitment and asked me to read the
following statement on the item currently before the Board.

In 2016, I authored Assembly Bill 1637, which extended, expanded, and modified the Fuel Cell Net Energy Metering Program, which is implemented by the CPUC and is intended to encourage substantial private investment in these energy resources in California, in recognition of the multiple benefits associated with this technology.

Not only can fuel cells reduce greenhouse gas emissions, fuel cells are a non-combustion technology, so they emit significantly less particulate matter and oxides of nitrogen. As this Board knows well, these criteria pollutants are public health threats that California is obligated to reduce under both federal and State law.

AB 1637 requires the Board to adopt an annually declining standard for Fuel Cell Net Energy Metering to ensure that fuel cells reduce greenhouse gas emissions compared to the electrical grid resources, including renewable resources that the fuel cell electrical generation resources -- resource displaces, accounting for both procurement and operation of the electrical grid.

My legislation was intended to ensure that fuel cells are cleaner than the energy that they displace. And that is what the staff proposal accomplishes. Moreover, given their air quality benefits, fuel cells provide a
benefit to communities and ratepayers beyond the greenhouse gas reductions.

For these reasons, I am in strong support of the proposed standard before you today.

I would also like to address claims that have been made that the Legislature intended that this standard to be set so strictly that fuel cells would essentially have to operate in a carbon neutral fashion, a hundred percent renewable gas, in order to qualify for the cell -- for the Fuel Cell Net Energy Metering benefits.

I think all of us would like to see fuel cells be carbon neutral eventually, but that is not achievable by the industry as a whole today, which is why such a requirement was not included in my legislation.

The reason the bill called for an increasingly stringent standard was to provide for fuel cells to transition to renewable gas as its fuel and eventually renewable hydrogen.

I am pleased to see that the Board has faithfully proposed a standard consistent with both the unambiguous language my bill put into statute and the obvious intent of the Legislature. The proposed standard will help ensure that the air quality and climate change benefits that fuel cells offer can be realized by displacing more polluting resources through the encouragement of growth
and innovation within the California fuel cell industry.

In the new normal of Public Safety Power Shutoffs and wildfires, this standard will give California additional clean options that to keep their lights on. For these reasons, I respectfully encourage the Board to approve the proposed standard without modification.

Thank you.

CHAIR NICHOLS: Thank you.

DR. FINE: Good morning, Chair Nichols, members of the Board. My name is Philip Fine. I'm a Deputy Executive Officer -- oh, sorry. I'll start again.

Good morning, Chair Nichols, members of the Board. I'm Philip Fine. I'm a Deputy Executive Officer at the South Coast Air Quality Management District.

Thank you for the opportunity to testify in support of the proposed fuel cell GHG regulation. My comments are on behalf of both the South Coast AQMD, as well as the California Air Pollution Control Officers Association, or CAPCOA.

As you know, our region, along with many other areas of the state face a daunting challenge in meeting upcoming federal air quality standards, requiring aggressive reductions in NOx emissions. Fuel cells can help by displacing diesel generators used for emergency or...
portable power applications, engines that are a significant source of NOx, PM, and toxic emissions.

Concern around public health impacts from diesel generator emissions has been brought to the fore in the wake of the numerous Public Safety Power Shutoffs, also known as PSPS events, that have occurred in this state since the start of the fire seasons.

This Fuel Cell NEM will encourage the use of cleaner technologies in lieu of diesel fire engines in our response to those emergencies. As they are deployed, we agree with CARB staff that reductions in GHG criteria and toxic emissions will be realized. In addition to helping us move towards improving regional air quality, fuel cells align well with other strategies that districts and community groups have identified in progressing towards the community health goals of AB 617.

Eventually, as fuel cells are able to transition to renewable natural gas and hydrogen, they will provide significant GHG emission benefits. Because fuel cells are much more efficient and cleaner than gas turbines or internal combustion engines at producing electricity, we believe they could also play a key role in the State's need to address renewable integration challenges.

We believe that the Fuel Cell NEM is a step in the right direction in ensuring cleaner technologies are
deployed to address the state's overall electricity
cclimate and air quality needs.

Finally, speaking solely on behalf of South Coast
AQMD, where we have the worst ground level ozone pollution
in the country, we cannot afford to leave a technology
with significantly lower criteria pollutant emissions out
of our overall attainment strategy. An overly stringent
standard that restricts the use of fuel cells could
further perpetuate the use of diesel engines for backup
and portable power applications, counter to both air
quality and GHG emission goals.

In summary, both CAPCOA and South Coast AQMD
staff support this proposed regulation that will encourage
additional deployment of fuel cells and ask that you adopt
it.

Thank you.

CHAIR NICHOLS: Thank you.

MR. TANG: Hi. Good morning, Chair Nichols and
members of the Board. My name is Mark Tang, and I'm a
manager at the Bay Area Air Quality Management District.
And I'm here to express the Air District's support of the
proposed Fuel Cell Net Energy Metering Greenhouse Gas
Emissions Standards Regulation.

Fuel cells are critical to displacing diesel
generators and meeting California's air quality carbon
reduction and resilient energy objectives. With increasing extreme wildfire events and grid outages, diesel generator use is rising in the Bay Area.

The increasing prolonged use of combustion based generators in the Bay Area is threatening our air clean and greenhouse gas reduction goals. Non-combustion based fuel cells can provide uninterruptible clean power during outages producing virtually no criteria air pollutants.

Further, co-locating fuel cell systems with battery storage and local renewable energy generation, also known as microgrids, displaces fossil fuel based energy generation, improving air quality in our rural, vulnerable, and disadvantaged communities, and supports the goals of AB 617.

Finally, the Air District believes non-combustion fuel cells are an important component to meeting California's zero-emission objectives and we encourage you to adopt this rule today.

Thank you.

MS. JENSEN: Good morning, Chair Nichols, Vice Chair, and members of the Board. My name is Courtney Jensen and I'm with TechNet who represents the leading technology and innovation companies.

We support ARB's proposed Greenhouse Gas Standard for Fuel Cell Net Energy Metering projects. It is a
rigorous data-driven standard that will give our members the policies certain to continue investing in fuel cell projects that reduce GHG's, improve air quality, and provide unparalleled resiliency.

In recent years, California has taken major policy steps toward achieving its air quality goals. But all of this progress could be threatened by California's new normal of Public Safety Power Shutoffs, wildfires, and extreme heat.

Many of our members and their customers were negatively impacted by the unprecedented PSPS events that occurred this October. Non-combustion fuel cells provide a unique way to solve these challenges. This innovative technology is a key option for our members, who want to move beyond traditional diesel generators, while reducing GHGs and improve air quality.

We commend ARB for developing an accurate, continually improving GHG standard that will give our members the confidence to invest in fuel cell projects to power their operations moving forward. And we ask that the Board approve this rule.

Thank you.

MS. QUIROZ: Good morning, Chair and members. Thank you for the opportunity to provide comment to you today. My name is Priscilla Quiroz. And I'm here today
representing the Advanced Energy Economy, AEE.

AEE is a national association of business leaders who are making the energy system more secure, clean, and affordable. AEE supported AB 1637, which extend the Fuel Cell Net Energy Metering Program and specified CARB's pivotal role in helping foster this technology by creating an accurate greenhouse gas emissions standard.

AEE is similarly supportive of the data-driven technology sound methodology that CARB has developed in the proposed regulations. It will reduce GHGs, improve air quality, and provide clear guidance to California customers who wish to choose fuel cells instead of diesel generators for their clean energy, resiliency, and sustainable needs.

As the State confronts the reliability and resiliency challenges of heightened wildfire and climate risk, AEE believes this GHG methodology is another key to enabling technology solutions that will help -- that will lead to clean resilient, and secure, and affordable energy future. This proposed regulation is well crafted and will result in overall benefits to the State's emission reduction, economic prosperity, and innovation goals.

Thank you.

MR. CORT: Good morning. Paul Cort with Earthjustice. Earthjustice today recommends that the
proposed standards be rejected or at least revised to include a steeper rate of decline. And this is not fuels cells versus no fuel cells. This is about what kind of fuel cells we want to subsidize.

The proposed standard is significantly weaker than an analogous standard -- fuel cell standard adopted by the Public Utilities Commission over two years ago. And while CARB's standard declines over time, the decline rate is so slow that the CARB standard would not catch up to the PUC standard until 2026.

Because CARB's standard is so lax, it will allow the most inefficient and polluting fuel cells to operate off fossil fuels and still qualify for public subsidies. The pollution from these technologies and their inconsistency with -- inconsistency with greenhouse gas reduction goals are why places like the City of Santa Clara has banned the use of some of these fuel cells.

CARB's standards should not support these inefficient technologies. And I haven't heard anything in the staff justification that says setting a higher standard would somehow preclude the use of these fuel cells that are more efficient.

Thank you.

MR. McCARTHY: Good morning, Chair Nichols and Board members. My name is Steve McCarthy. I'm with the
California Retailers Association.

And I just wanted to briefly state on behalf of our retail members our support for the proposed standard for Fuel Cell Net Energy Metering standards. These standards will help our retail members -- provide our retail members with much needed options. And I wanted to echo the comments particularly earlier with regard to Public Safety Power Shutoffs. This is a challenge for our members and the standards will help us move forward in that area.

Thank you.

MR. BARAD: Good morning, Chair and members. Daniel Barad on behalf of Sierra Club California. We'd like to align our comments with those made by Earthjustice. The proposed Fuel Cell Net Energy Metering Standard is not strong enough. We would like for the Board to reject the measure as proposed. But at minimum, the Board should direct staff to create a standard decline rate that is faster and therefore more in line with the State's climate goals.

Thank you.

MR. WIRAATMADJA: Good morning, Madam Chair and members. Vincent Wiraatmadja with the Weideman Group, here on behalf of the California Hydrogen Business Council. CHBC is an organization that represents over a
hundred companies involved in the hydrogen industry,
ranking from producers to end users and is in strong
support of the staff proposal. We appreciate staff's very
deliberate and data-driven process and thank them for all
their work.

As staff noted, the declining standard will cause
fuel cells to become cleaner over time. And through the
use of -- through the use of cleaner fuels, including
hydrogen.

As fuel cells see greater deployment, hydrogen
can be used to decarbonize the gas system and support
making fuel cells cleaner, as staff noted in their
comments. This will be especially critical as the state
grapples with Public Safety Power Shutoffs and seeks to
find ways to mitigate the use of diesel generators, while
still providing safe and reliable power for the state's
residents impacted by PSPS.

Fuel cell NEM will ensure that these advanced
clean energy generation technologies will continue to
provide air quality benefits and GHG reductions. The
hydrogen industry stands ready to help in this effort and
strongly supports the standards.

Thank you.

MR. YOUNG: Thank you, Chair and members for the
opportunity to be heard. My name is Josiah Young. I
represent the Bioenergy Association of California, known as BAC, B-A-C. BAC represents more than 70 public agencies, local governments, utilities, and private companies working to convert organic waste to energy to help the state meet its climate, clean energy, and air quality goals.

BAC does support this proposed Fuel Cell Net Energy Metering Regulations. The reason behind that, that we want to point out is that California has a lot of in-state biogas potential from diverted organic waste sources, dairy waste, wastewater, biogas, landfill gas, agricultural, and forest waste. So using in-state biogas in fuel cells will help reduce the short-lived climate pollutants emissions and air pollution, while providing important benefits for the grid that solar, wind, and batteries can not alone provide.

Thank you.

MR. QUESADA: Good morning, Chair Nichols, ARB Board, and staff. Thank you very much for hearing me out today.

I'm going to be a little bit different than a lot of the other people you've heard today, because, for one, I actually have a fuel cell installed at my business. Two, at age five, I was diagnosed with asthma, severe asthma. And anybody that has ever experienced a severe
asthma attack knows the trauma of not being able to take your breath for granted.

My name is PJ Quesada. I'm the Vice President of Ramar Foods, and third-generation family business based in Pittsburg, California. We have offices also in Huntington Park, California. We're known throughout the Filipino community as the makers of the delicious purple ice cream. Some people know it as Ube. We're also --

(Laughter.)

MR. QUESADA: Okay. Selfless plug.

We also make the most Lumpia out of anyone on this side of the planet.

(Laughter.)

MR. QUESADA: I'm quite proud of that. Now, all this food is frozen. And the whole industry is trying to move away from preservatives. So naturally temperature is what we use to keep our products safe and delicious throughout the supply chain. And powering refrigeration is probably the most capital intensive type of industry you can hope -- can you hope to even get into. I think the oil and gas industry is the only one that's more capital intensive than frozen food.

That being said, in 2013, we made the decision to install a 200 kilowatt fuel cell onsite that was actually itself made here in the Bay Area -- well, here in
California.

And since it's installation, we've avoided over a million pounds -- or almost a million pounds of CO2 from being released in the atmosphere. At the same time, we're sending a clear message to our employees, our City of Pittsburg, and our community, and our competitors that we take this type of thing seriously.

Important also, in addition to the clean air standards that this helps enforce, there's actually a very compelling economic reason for businesses like mine. We're a small business, about 200 employees in California. We need more reasons for businesses like mine to get on board with the clean energy future and enable us to do it without making us uncompetitive, because California is not a cheap state to run a business and every little bit helps. These standards will help the cost of renewable fuels come down, because the -- when we re-upgraded our fuel cell system earlier this year -- basically, we're now in round two we like it so much -- we found that the cost of the equipment is now approaching a competitive cost against other onsite generation like cogen.

So I believe that this standard will help support the installation of more of this technology and will help drive down the cost of biofuels moving forward.

Thank you very much for your time.
MS. GRIZARD: Good morning, Chair and Board Members. Erin Grizard with Bloom Energy. Thank you so much for your time on this agenda item.

First, thank you to the staff. We appreciate the staff's three-year commitment of time hard work and subject matter expertise that has led to a thorough, complete, and robust record. We must also acknowledge the considerable contributions of the CEC and CAISO expertise developing the methodology that is before you today.

Given the in-depth analysis taken in developing this standard, we support the staff proposal for four key reasons. First, ARB meticulously evaluated multiple methodologies. The standard declines over time and will be reevaluated in 2023. The declining standard will drive the adoption of renewable fuel from biogas.

The various comments and positions raised by parties have been exhaustively analyzed over a three-year process. The ARB and CEC staffs' expertise and detailed public processes should give the Board confidence in adopting this regulation today. The fact that the rules must be revisited in 2023 will provide ample opportunity to account for the evolving nature of California's complicated energy system.

Adoption of the GHG standard today will further enumerate State policies, including many mentioned today,
SB 100, SB 350, AB 617, SB 1383, and others. Fuel cells are an alternative to combustion and diesel for customers during PSPS and other climate change events.

The fact of the matter is that we need real pragmatic solutions to both the cause and consequences of climate change. Without fuel cells, California hospitals, business, and manufacturers are forced to choose between losing power for days and using a polluting diesel generator. This is a terrible decision.

Thanks to the staff's work, this standard gives them another critical option to both keep their operation running and reduce GHGs. This standard will also support the development of real -- resilient microgrids. So far in 2019, Bloom systems have avoided 645 outages for our customers, the longest of which was over five days.

In California, we have 89 customer microgrids in operation and 26 of those microgrids are in the service areas subject to PSPS. Finally, fuel cells provide a pathway to 2045 carbon and criteria air pollution reduction goals with renewable fuels including biogas and hydrogen. Earlier this year, Bloom announced a partnership with CalBio that would result in our non-combustion fuel cells generating power from dairy methane that will charge zero-emission electric vehicles. This standard is a key ingredient to facilitating more of
these projects.

In the face of increasing disruptions to California's aging electricity grid, this standard provides a data-driven, continually updated performance standard that incentivizes innovation for a technology that is foundational to meeting California's ambitious methane reduction, air quality, clean energy, and environmental goals.

For these reasons, we ask for you to support the staff proposal.

Thank you.

DR. BROUWER: I was asked to try this button on the side here.

(Laughter.)

DR. BROUWER: So I'm going to try it.

Wow. Pretty cool. It goes up and it goes down. We had a gentleman earlier that needed it to go up quite a bit. He was tall.

Hey, there we go.

Good morning, Chair Nichols and the rest of the Board members. My name is Jack Brouwer. I'm a professor of mechanical and aerospace engineering at the University of California, Irvine.

And I have been fortunate to work with a very talented group of graduate students over the last 22
years, essentially to study the methods by which we can get to zero emissions in our society. And as a result, we have used various methodologies for determining how can we actually reduce emissions, both greenhouse gas emissions and criteria pollutant emissions so that we can get to totally zero by our -- by 2050 or sooner than 2050.

Because of that, we have looked at this analysis that the CARB staff has come up with and have compared it to our own analysis methodologies and understand it to be the technically accurate methodology for determining whether or not any technology would reduce emissions compared to the grid. And this marginal emissions analysis is the appropriate technically accurate way to do it.

So we know by looking at these numbers then, if fuel cells are installed and meet these standards, they will reduce greenhouse gas emissions.

In addition, I'm speaking in support of the declining schedule of emissions reductions. These emission reductions are consistent with California policy and will enable us to get to our policy goals of zero emissions by the 2045 goal that is established in law today, so -- and finally, the air quality benefits that these stationary fuel cells will also provide us in the end are very important to consider. It's not only air...
quality benefits that are in comparison to the grid, which
they will do as well, but they are also in comparison to
diesel gen sets.

So Professor Sperling is exactly correct in
noting that displacing dirty combustion-based back-up
power is one of the most important contributions that
these fuel cells systems will make.

So thank you for the opportunity to speak.

CHAIR NICHOLS: We have a question.

BOARD MEMBER BALMES: Yes. Thank you for the
presentation Professor Brouwer.

DR. BROUWER: Yes.

BOARD MEMBER BALMES: The question I have is
related to what you just brought up in terms of Dr.
Sperling's comment earlier.

DR. BROUWER: Yeah.

BOARD MEMBER BALMES: Can you give me an idea
about how many diesel gen sets there are out now that
would be replaced by fuel cells, you know, just roughly
speaking?

DR. BROUWER: So if -- the law calls for, I
think, 500 megawatts of installations. Typical
installations are order of magnitude 200 kilowatts or so.
If you -- I can't do the math very well in my head here,
but that sounds to me like about a thousand diesel
generators or so that could be displaced by this law.

BOARD MEMBER BALMES: Okay. And do you know roughly how many of those diesel generators are out there now providing this marginal power, roughly speaking?

DR. BROUWER: I don't the number that -- of diesel generators that are out there now.

BOARD MEMBER BALMES: Okay. Thank you.

CHAIR NICHOLS: Ms. Mitchell.

BOARD MEMBER MITCHELL: Yes. Thank you, Professor Brouwer for coming today.

My question is kind of broader than diesel generators. Although, we recognize these are a big source of emissions in our area. But we have looked at fuel cells as being -- having a future in microgrids --

DR. BROUWER: Yes.

BOARD MEMBER MITCHELL: -- to provide power to neighborhoods and to smaller areas. I wonder if you could just talk about that a little bit. It's a matter of education I think.

DR. BROUWER: Thank you for that question. Yes. Today fuel cells are being installed in other jurisdictions, for example, in the east coast, in Japan, in Korea in microgrids that are enabling them to serve multiple customers, so to actually serve senior centers, public health facilities like hospitals, together with
police departments and fire stations. And they're enabled in these microgrids to not only provide lower emissions and higher efficiency power, but also to ride through grid outages.

And they've proven this in many different circumstances. The presentation that we submitted together with our comments shows these examples of resilience that has been introduced by stationary fuel cell systems in these applications.

And these zero-emissions goals that we have as a state, I have not found another technology, other than hydrogen and fuel cells, that can complement solar energy storage, wind, okay, and give us zero emissions throughout society.

So we not only need them in the immediate short-term for PSPS events and things like this, but we also need them for those zero-emissions long-term goals, because they're the only zero-emissions technology that can, for example, operate for weeks on end, right, when the grid goes down.

And there are examples of weeks of outages that microgrids containing fuel cells, but also containing solar and batteries, okay, have been able to ride through.

BOARD MEMBER MITCHELL: And so one of the advantages that I've seen in microgrids is that as you put
that power source closer to the users of that power, you
can eliminate a lot of distribution wires. And that --

DR. BROUWER: Yes.

BOARD MEMBER MITCHELL: -- that is one of the
problems we're not having with our electrical grid system.

DR. BROUWER: Yes.

BOARD MEMBER MITCHELL: The distribution wires
being sources of the wildfires that we're seeing.

DR. BROUWER: Yes. Very interesting point. In
New York, for example, the Brooklyn/Queens Demand Response
Demand Management Program is a utility program that
enabled utilities to invest in local generation, including
solar, and batteries, and fuel cell technology to avert
their need to invest otherwise in grid infrastructure to
meet that same growing demand. So they did exactly that
in this demand response program in Brooklyn. They are
doing it in other places too, in Connecticut, for example.

So instead of investing in utility
infrastructure, like upgrading power lines, upgrading
transformers, and substations, and things like this, you
can install solar, install storage, and install stationary
fuel cells to otherwise -- to meet that demand in a
different way. And in a way that ends up being more
resilient and can avert then also the stress on the system
associated with wildfires in the state.
BOARD MEMBER MITCHELL: Great. Thank you for that explanation and for the work that you're doing in that area. We appreciate our academics and all that they do to help us move forward.

Thank you.

DR. BROUWER: Thank you.

CHAIR NICHOLS: Before you leave, I also want to -- excuse me -- extend your time a little bit here using you as maybe a foil, but hopefully as a relatively independent analyst. So my feelings get hurt on behalf of the ARB when people say that our standards are weaker than somebody else's. And that has been alleged about our standard here for Net Energy Metering versus the standard adopted by the Public Utilities Commission, which was admittedly under a different statute. But still, I'd like to get you to take a look at this. You said that you thought our methodology was good, maybe even the best. But I want a better understanding of why you think that the marginal approach that the staff is proposing here is the right way to go.

DR. BROUWER: Yes. So the difference between the Fuel Cell Net Energy Metering Program and the Self Generation Incentive Program of the PUC, there are many differences. And I thought that the staff presentation slide - I think it was slide number four. Not sure --
staff presentation slide, which had four major points of
difference elucidated that quite well.

    And just -- so let me just make a couple of
points of difference. The SGIP is a -- an incentive
program, not a tariff program. And it included many
different technologies, not just fuel cells. And it
established a one-time number of GHG emissions rate, for
which the technologies -- technologies must meet to
qualify and then allowed those systems to be used
throughout their entire life. So it was a one-time number
to cover the entire lifetime of operation. So the number
had to be lower than current emissions. It had to be
something that accounted for the lifetime of the
operation.

    The current standard that CARB is setting is
actually, I think, more strict than the SGIP standard,
because it has this declining schedule and the need to
every three years check it against the data. So you can
always go back and say now we need to make it even more
strict, and always assure that GHG emissions are being
reduced, so...

    CHAIR NICHOLS: Okay.

    DR. BROUWER: Does that help or is it -- a little
bit more?

    CHAIR NICHOLS: Well, no, I mean, as I looked at
it, it just seemed to me that we were comparing apples and oranges, to some extent, but also that by using the average grid as sort of a baseline, that the PUC approach artificially frankly made their rule look better. I can't think of a better way to say it.

DR. BROUWER: Yeah, because the number is lower, it looked better --

CHAIR NICHOLS: Yes, right.

DR. BROUWER: -- but it's a lifetime number.

CHAIR NICHOLS: Yeah.

DR. BROUWER: And as a result, I think it doesn't reduce GHG as much in reality.

CHAIR NICHOLS: Okay. Thank you for that. Hopefully, that's helpful.

Mr. White, who I think has a different perspective here.

MR. JOHN WHITE: Thank you, Madam Chair. I'm John White with the Center for Energy Efficiency and Renewable Technologies.

And I wanted to provide a little historical context for how we got here. The Self Generation Incentive Program began in the aftermath of 2000/2001 energy crisis, when we were trying to promote generation. One of the things over time that ARB and we have worked on is to gradually strengthen and stiffen the
requirements governing self-generation, so that we cannot have high emissions. We don't have diesel generators and we want to push the standards forward.

I think what's important about this rule, however, and it's especially important, given the behavior and actions of the Public Utilities Commission, is that I'm here to tell you I have some -- with some background and analysis that the grid is not as clean as some folks think it is. And in fact, there's some evidence it's going the other direction.

The Public Utilities Commission failed to anticipate for some reason the retirement of the once-through cooling plants. And so now, we're seeing an application to extend the deadline. And those coastal boilers are not natural gas combined cycles. They're not clean peakers. They're very, very dirty.

And so I think what's on the margin, given where we're headed, we're likely to see the margin be getting dirtier in the next few years.

Secondly, there's other things that are counterintuitive going on with some of these incentive programs. The PUC had a study done of the SGIP program and found that the battery storage systems that were being installed under the incentive, and over time SGIP has migrated away from fuel cells to battery storage as
getting most of the money.

But it turns out the way these batteries were being deployed had more to do with saving the customers money than saving greenhouse gases emissions. And, in fact, some of these projects are increasing greenhouse gas emissions. So what we know about fuel cells is that they're steady state, that they run all the time, and they have zero criteria emissions. And the danger that this delay has caused -- first of all, we really miss Mike Tollstrup, okay, who I worked with over the years to guide and strengthen this program.

So we've had three years of uncertainty overlaying this program and it's been very difficult for people to sell units not knowing what these standards were going to be. So we're glad to get this done. I think there's still some things you might want to look at, including counting the heat that's displaced and not just the electricity, which is an issue for some of the technologies.

But I would urge you to use this experience and the conversation we've had today, to stay on top of what's actually happening on the grid. You know, we want to see what the actual emissions are, not what the model says, okay? Because in the case of the integrated resource plan reference plan at the PUC, the actual emissions were
higher than the assumed emissions in the model, because
the power plants are running differently.

The other thing, in 2030, we actually have an
increase in criteria pollutants. So I would urge the
staff to stay on this issue, keep working it, and
understand how clean is the grid and how do we make it
cleaner.

Thank you.

CHAIR NICHOLS: Thank you.

MR. CARMICHAEL: Good morning, Chair Nichols,

members of the Board. Tim Carmichael with Southern
California Gas Company. We support the staff proposal. I
want to echo the comments of Professor Brouwer, and the
Hydrogen Business Council and won't repeat their points,
which we agree with.

Supporting the adoption of the proposal before
you will facilitate the adoption of microgrids that can
provide resilience and reliability to utility customers in
general, not just during power safety shutoffs. I think
many of you know that our company several years ago
established a renewable gas team and then just last we
established a hydrogen team.

We are bullish on renewable gas, and hydrogen,
and have made public commitments to investing and
expanding our use to decarbonize our system over time. We
really believe in that potential. And fuel cells fit right into that longer term vision.

There's opportunities today, as several people, and including your staff, have highlighted, but we see more opportunity in the future.

We have -- consistent with that, we have announced I believe the strongest commitment to renewable gas usage of any utility in the country. We support the strengthening of these -- the proposal before you over time. But I want to caution you as you deliberate on this, we have a challenge in pushing so hard in California sometimes that we don't fully appreciate how much work is being done in this very moment to deploy successful low-emission reduction technologies.

And sometimes, if we set our immediate standard so stringently, it actually works against us getting the best available deployed today. And I just -- we are committed to reductions over time, as I think everyone that's testified today is. But I caution you on when we -- there's examples. When we go too far too soon, we work against the investments and the deployment that we all want to see happen right away.

And there's great promise for this program and for this technology. And we're very supportive and very much appreciate all the staff time on this program.
Thank you.

CHAIR NICHOLS: Thank you.

MR. JACKSON: Good morning, Chair Nichols, Members of the Board. Alex Jackson on behalf of NRDC. And we are here regretfully in opposition today to the proposed standard for the simple reason that it would enable the substantial public subsidy of electricity generation from a fossil fuel for years to come.

And I think I -- you know, I take issue with some of some the framing here today that this is, you know, not a referendum on fuel cells and their application, their potential benefits for air quality or wildfire resilience. This is about what degree of emissions performance we're going to ask of our fuel cell projects to meet to enjoy a public subsidy that will be paid for by other ratepayers. And we think we should ask our incentive programs to set a higher bar and speed that transition to lower carbon fuels.

And I feel like -- I was reflecting on how we got here today, because so much of the discussion seems like we're being boxed on a methodological approach. And just to clarify, per our comments, we agree it's a marginal test. No one is suggesting it should be an average test. We disagree on how staff has applied that marginal test. But naturally -- or not naturally, but I should say I was
thinking back to my high school physics teacher, Mr. Saxby, that -- that was naturally.

(Laughter.)

MR. JACKSON: He taught us that, you know, we should be applying these detailed formulas that try to solve these complex problems. But also before we submit and answer, step back and assess how reasonable it looks in context.

And the context here is greenhouse gas emissions performance. And we came to call that lesson from Mr. Saxby, the Saxby step. And I think in my view, staff has lost sight of that step here, because it is not reasonable to end with a standard in 2019 that is 20 percent higher than what the PUC employed for SGIP, when the Legislature gave ARB this job precisely to set a more stringent one.

It is not reasonable when cities like Santa Clara are banning the interconnection of gas powered fuel cells, because their increased usage runs counter to our clean energy goals. And this proposal would subsidize them. And it is not reasonable when recent gas power plants permitted by the CEC, which we treat as major carbon polluters, under Cap-and-Trade emit greenhouse gases at a lower rate than what's being proposed here for a subsidy.

And finally, it is not reasonable when, at multiple points, in developing this methodology, staff
chose not to use other data-driven approaches that could have set a higher bar by more accurately accounting for the impact on reduced renewable procurement, assessing when renewables are on the margin, and accounting for methane leakage in the distribution system.

But here we are, and I'm mindful this Board has other bigger fish to fry. So at a minimum, I'd like to endorse the suggestion from Chair Nichols that staff at least set a more steeper decline rate than the proposed two and a half percent. I'd offer that our greenhouse gas emissions statute should be the appropriate benchmark. This is an emission reduction performance standard after all. So looking at our SB 32 goals would perhaps get us to that shared vision we have of running our fuel cells off lower carbon fuels and off of natural gas.

Thank you.

CHAIR NICHOLS: Thank you.

BOARD MEMBER TAKVORIAN: May I ask a question of this witness?

CHAIR NICHOLS: Oh, sorry. Mr -- yes, Mr. Jackson.

BOARD MEMBER TAKVORIAN: Thank you. There seems to be -- one of the core questions is is this rule suggesting a standard that is less stringent than the PUC standard? And the prior witness spoke to that. So it
seems to me from your letter and from your testimony that you all have looked at that fairly extensively. So could you respond to that same question?

MR. JACKSON: Yes. And I think it is a different program. And the legislation was clearly moving, you know, this task to ARB from the PUC. I mean, our view of the legislative history, and it is in the Committee analysis, one of them, is that the intent was to set a standard that was more stringent than SGIP. Now, this is an annual standard. You have to meet it annually to qualify for the tariff.

But in our view, that means it's more important to get a good standard, because there's real questions about verification. You know, how are you going to enforce that annual requirement? It has to be more than just customer attestation.

So it is different programs, but we think the comparison is germane. It's apt. That was definitely part of the legislative discussion. We agree it is a marginal test. That's what we should be evaluating here. You know, what is the emissions performance of the resource on the margin that this is displacing?

But we know that as we add more renewables to the grid, our grid is getting cleaner. That marginal equation is going to change, and we should be assessing the other
impacts per our comment letter on reduce renewables procurement, to the extent these are behind the meter resources. That means it's fewer retail sales utilities are providing. And there's also methane leakage for the distribution system. Given the fact that these are behind the meter again, they don't connect at the higher transmission level like gas plants.

So we just -- we were a little mystified that at multiple points along the way, the statute afforded staff discretion to set a higher standard, still using a data-driven approach. But we ended up with standard that we felt starts too high and declines too slowly, and is not going to move us to that lower carbon fuel future that we want fast enough.

Thank you.

BOARD MEMBER TAKVORIAN: Thank you.

VICE CHAIR BERG: Could I just ask one follow-up question? First of all, I really enjoyed my meeting with you. So thank you for that.

MR. JACKSON: Thank you. Likewise.

VICE CHAIR BERG: But I just want to make sure that I understand that the PUC started out with the average generation, is that correct?

MR. JACKSON: I believe so, but I'm not -- I was not part of the SGIP proceeding, so I'm not fluid entirely
on how they set their standard.

VICE CHAIR BERG: I don't know quite how to reconcile if the average generation is 228 and we're starting out at 409. You know, if we started at 228, how would we be looking on this? I don't -- I believe that the marginal generation is the right place to start.

MR. JACKSON: Right.

BOARD MEMBER TAKVORIAN: But I'm just trying to reconcile this -- this argument between what the PUC has done and what we have done. Can you give me an insight on that basis?

MR. JACKSON: Yeah, I think -- to be clear, I mean, we agree with staff. We should be looking at the marginal emissions test. So I think SGIP is kind of context and it's relevant for the legislative history in our view, because that was very much part of the discussion and why this task was given to RAB and not the PUC.

But in our view, assessing the marginal emissions rate the way staff did the test, they only looked at renewables on the margin - this is going to get, you know, very technical - when CAISO day ahead prices are negative, which is, you know, only 110 hours a year. And I think as other commenters have explained, our understanding of that is going to get much more refined in the years ahead. But
we're concerned this essentially locks in that methodology. It's just picking a two and a half percent reduction rate from a fairly high number.

And it's just a question I think for this Board of -- from a policy standpoint, what sort of -- it's about, you know, speed. It's about how quickly do we want this standard to move us towards renewable feedstocks, knowing again that this isn't about whether people are going to fall -- install fuel cells. It's about to enjoy a subsidy in the form of a NEM tariff what emissions performance should we demand of those projects?

VICE CHAIR BERG: Thank you very much.

CHAIR NICHOLS: Okay. That does conclude our list of witnesses. So I think we can close the record at this point and proceed to Board discussion and vote.

So, I guess though I should offer the staff at least an opportunity to respond to any of the points that you think need to be responded to at this stage.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA:

Thank you, Chair Nichols. I think what we're hearing is that the marginal test is the correct test. That there is a distinct difference between what the SGIP program required and what the new legislation required. And we heard testimony from a representative from the author of the bill's office talk about what they intended
with the language and what they intended as the outcome.

The staff methodology is data driven. And it allows for reevaluation based on real-world data every three years. And there is a minimum -- at least a minimum decline of 2.5 percent for the efficiency gain for greenhouse gases year over year.

So it's very distinctly different than SGIP. It's looking at very different factors. And so we do believe that the methodology and the way that we've set the values is in compliance. I think the question here is, you know, looking at the data, and where we ended up with the standard, and the rate of decline, there was some discretion, for example, on the rate of decline.

But in terms of where we started, we do believe that that is the appropriate place, given where the data led us to.

CHAIR NICHOLS: Okay. Well, do I have a motion and a second on the resolution?

BOARD MEMBER RIORDAN: I would move approval Madam Chairman of the resolution.

BOARD MEMBER SPERLING: Second.

CHAIR NICHOLS: And we have a second.

Is there further discussion here?

Yes, starting with Dr. Sperling, I guess, and then with Mr. De La Torre. And welcome back, Mr. Serna.
It's good to see you.

BOARD MEMBER SERNA: Good to be seen.

(Laughter.)

BOARD MEMBER SPERLING: I support the proposal, because, you know, to use any other number is arbitrary. You know, they did a good -- a good analysis. If anything, it's very conservative in terms of, you know, using the legally required marginal analysis.

But the real-world analysis, it would look much more -- even much more beneficial. Fuel cells are a tiny part of the electricity supply. It's hugely important for places that need back-up -- reliable back-up for places where there's been wildfires. I see no reason to tamper with it anymore. I think it's solid and I support it as is.

CHAIR NICHOLS: Okay. Thank you.

Mr. De La Torre.

BOARD MEMBER DE LA TORRE: Yeah. I have two comments. One I'm really troubled by this constant reference to diesel generation and the comparison between fuel cells, what we're talking about here, distributed generation, as John mentioned steady state, meaning it's on all the time. That is not PSPS, an emergency, there's a power shutoff, and your plug in a diesel generator to have electricity.
It's two completely different things. And so we -- in a lot of the analysis and a lot of the comments that we've had, there's this fluidity between the two. And they're two different things. And so it troubles me that we keep mixing the two. Let's talk about the merits of fuel cells, which I'm a big believer in and the marginal -- staff and I had a whole discussion about the marginal thing. I get it that the marginal is the right approach.

I did want to ask on -- in our briefing -- in my briefing, I was told that this formula using marginal and then some version of this formula is what we use for Cap-and-Trade, LCFS, et cetera, can you clarify that -- that what you -- what you did here for this purpose is similar or exactly the same as what we've done in other areas here at CARB?

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA:

Yes, of course. So, you're correct, when we talked in the briefing, I did mention that the concept of marginal generation has been used for almost a decade in existing ARB programs. The way that the methodology was first developed was it was developed in a public process with CEC, with CPUC. And it was part of a discussion in the Western Climate Initiative with the states in the west and some of the provinces.
So the methodology and the approach to how calculate marginal was very thoroughly vetted. And it's been used in ARB programs for our greenhouse gas inventory, which we use to track progress or AB 32 targets. And it's part of our mandatory reporting regulation and it helps to assign a compliance obligation in the Cap-and-Trade Program.

BOARD MEMBER DE LA TORRE: So the formula that some people were in favor of and some were against in today's commentary, the formula we're using in this program is the same as the formula we've used in those others settings?

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: That's right. I think what some of the speakers here were asking for is that we consider additional factors on top of that formula to try and bring the numbers down, but the core formula are the same.

BOARD MEMBER DE LA TORRE: Yeah. And so -- so, to me, that's -- that's the point. And maybe it's what the Chair was getting at earlier, is that this agency has been using this formula for a decade at least, right? I mean, if we're going back to WCI. And so if we're using it in all those other settings, it only makes sense to carry it over, measure for these purposes using the same formula, and then using that number, whatever the number
It turns out that in this case, we are having to compare it to SGIP and a number that is, I don't know, 70 points less than ours to start. So that's -- you know, it's important.

CHAIR NICHOLS: It's a factoid.

BOARD MEMBER DE LA TORRE: It's important to consider it, but I think it would be horribly inconsistent of our entity to change it just because there's some other number floating around out there. I'm more comfortable, whether I like it or not, whatever the result is, I'm more comfortable sticking to the consistency of what we've done here over time in other areas than I am re-jiggering the formula to get a better outcome.

That being said, I completely agree that we need to have a steeper downward slope. I think we do need to push toward renewable and get that going. But in the meantime I'll double back to where I started. I really want to stop talking about this as a substitute for one-time generation, because -- I know this, because I asked -- a few months ago someone asked me about using fuel cell generators for portable purposes and they were told it didn't exist.

And so unless you can carry around a huge hydrogen tank with you, you can't do it. And so, you
know -- anyway, that's where all of my frustration comes from is I just had this conversation a few months ago, and I was told it didn't exist and then now we're being told, oh, they're completely -- you can swap one for the other. No, you can't.

BOARD MEMBER BALMES: Chair --
CHAIR NICHOLS: Well, I think there's -- excuse me, actually, I was going to call on myself.
BOARD MEMBER DE LA TORRE: Yes, so that was my comment. Thank you.

(Laughter.)

CHAIR NICHOLS: If I may. Thank you. So two things. I mean, I think there's a couple of elephants in the room here, which are sort of being not quite addressed fully. So one is the reality that our current system is not as resilient as it should be and that we've suffered major periods of outages as a result of fires primarily, and that there appears to be -- although, I don't have any numbers, but just looking at advertisements that people have sent, sort of two different responses going on.

One is, you know, an effort to sell diesel generators. And we have been asked on occasion and have, in fact, responded by making it easier for people to use diesel generators, because they're going to be out not just for an hour or two and not just people who, you know,
rely on them for home oxygen, but, you know, in much
larger scale. So the microgrid point that Ms. Mitchell
brought up was a very -- very germane to this discussion.

And the other is the fact that we now -- it's
quite obvious that we have to be pushing for further
cleaner combustion of -- including of natural
gas, because it is, while cleaner than coal and fuel oil,
not as good as we need it to be, either for air or for
house gas purposes.

And so anytime anything comes before this Board,
that's all going to be kind of in the background of are we
doing everything we could do be doing? Are we pushing as
far and as fast as we -- as we need to be?

I think that the staff has done a good job of
getting us to this point. Don't forget these rules take a
long time to develop. You know, so it feels like
technology and events are pushing faster sometimes than
our regulatory activities are. But at the same time, we
have this need to adopt something and move on, because, in
fact, what we're doing now is actually making it harder
for people who want to decide to use fuel cells to make
that decision. I mean, that's -- we're stall -- the
market is relatively stalled, because of our failure to
act up until now.

So kind of balancing those things back and forth
is why I end up deciding to support the proposal as it is
taking some comfort in the fact that there's a commitment
here to review it, and it will necessarily have to be
reviewed within a three-year period, which is, you know,
pretty short by government standards, I guess.

Now, Dr. Balmes.

BOARD MEMBER BALMES: Well, you actually made
comments that were similar to mine. I just wanted to ask
staff to clarify what I've just learned from Mr. De La
Torre, is that true that these are running all the time as
opposed to back-up? Because we have been or some of us
have been misled in that regard.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: In
some instances, the application is running all the time.
So when there is a power outage, the fuel cell output can
be increased so you don't have to look for other auxiliary
power.

BOARD MEMBER BALMES: Okay. So I also applaud
the staff for, I think, using an appropriate methodology.
And actually even those people who want a stricter
standard are agreeing that the methodology is appropriate
today, so that's good.

And I agree with Mr. De La Torre that we should
try to be consistent when possible. But I also agree with
him that I would like to see a steeper decline. I'm
comforted, as Chair Nichols mentioned, that we are going to be reviewing. But I would -- I'd rather set the bar higher to start with, in terms of the annual decline.

CHAIR NICHOLS: Well, any change in the rule would require a delay for sure, and that would be a problem.

BOARD MEMBER BALMES: I know we've already had a lot of delay.

CHAIR NICHOLS: We've already had a lot of delays. That's really what's weighing on me.

Yes, Dr. Sherriffs.

BOARD MEMBER SHERRIFFS: Thank you and thanks to the staff, and stakeholders, and the advocates for the time they've put into this and for the testimony today. As I hear this discussion and I'm always reminded about the terrible, I guess I'll call it, irony of smelling and seeing emissions from diesel back-up on a health campus of all places. And that really informs my thinking as we're doing this.

So again, I really appreciate -- you know, this is only a small piece of the emissions pie, the greenhouse gas emissions, but every bit counts. And also many of these emissions are in highly impacted neighborhoods, businesses, hospitals. So it is very important and has been expressed we need to be thinking about more ways that
we can support moving forward. But it's clear this --
this work that we're doing here today doesn't just support
fuel cell technology, but really drives technology, and
drives renewable fuels, lower polluting fuels. So overall
is very, very worthwhile.

    Thank you.

and then Ms. Takvorian.

VICE CHAIR BERG: Could I just ask for a
clarification on timing, which might help us all. So when
we're looking at this rule, my understanding is that these
are for units that are put in by 2021.

    INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA:
    That is correct.

VICE CHAIR BERG: And that in 2022 this
legislation will need to be reauthorized?

    INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: To
be eligible for additional funding for other fuel cells
after 2021, that's correct.

VICE CHAIR BERG: And then when would we actually
do a three-year review?

    INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: So
in the methodology, in the regulation itself, it has the
formula to do that three-year update automatically with
the data that's available.
VICE CHAIR BERG: But when would be the first -- it would be three years from now or -- I'm confused on the fact --

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: 2022.

VICE CHAIR BERG: -- that we're backdated.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: Right. So the methodology sets the schedule for two -- for the first year and the next three years. In 2022, we would use the existing formula in the regulation with updated data to figure out what the next three years should look like. But fuel cells, to be eligible for funding, have to get into the program by 2022, even though the methodology will continue to be updated and those fuel cells that get in before 2012 have to continue to meet the ongoing stringent requirements, no new full cells would be able to come into the program after 2022.

VICE CHAIR BERG: So if we were to, in that review, make a -- reduce the emissions by increasing the amount per year, it would apply to the units that are already on the ground.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: That's exactly right. And if those existing units that are on the ground that get funding in the next few years in the near term can't meet that more stringent
requirement, they would no longer be eligible for funding.

VICE CHAIR BERG: Okay.

BOARD MEMBER TAKVORIAN: This could still be on
the ground.

VICE CHAIR BERG: But they can -- they can get
built anyway. Nothing prevents them from being built.

BOARD MEMBER TAKVORIAN: Right. But they've been
subsidized to begin with. And so they're still operating,
is that correct? So they -- the assumption is they would
still be operating.

CHIEF COUNSEL PETER: Diane, you need to use your
microphone.

BOARD MEMBER TAKVORIAN: I have it on.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: Can
you repeat the question.

BOARD MEMBER TAKVORIAN: Oh, I'm sorry. So the
question is they would still be operating. They might
have received the subsidy under the initial rule. And
then if they didn't comply any more, they wouldn't be
receiving the subsidy, but they would be still operating.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA:
That's correct. And that's --

BOARD MEMBER TAKVORIAN: So the pollution would
continue. The money might stop, but the pollution would
continue, is that right?
INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: So there's no criteria pollutants or insignificantly reduced criteria pollutants from fuel cells. So the air quality benefits would continue for any fuel cells that are out there. And if there are fuel cells that don't want to have the funding or that already exist today, those also will continue to exist. What we're talking about is addressing a market barrier, so that there can be further deployment of a technology that benefits air quality and actually fits in a long-term greenhouse gas landscape for the state.

I think the concern is -- I spoke to this early, which was about locking in natural gas. Because the rate of decline is guaranteed to be at least 2.5 percent each year, these fuel cells that get that funding up front would have to continue to become much more efficient or switch fuels to renewable hydrogen or biogas.

BOARD MEMBER TAKVORIAN: Okay. Thank you. That's helpful.

CHAIR NICHOLS: Further comments, yes?

BOARD MEMBER TAKVORIAN: Yeah. I just wanted to -- appreciate the Chair's expression of the elephants or other large animals in the room --

(Laughter.)

BOARD MEMBER TAKVORIAN: -- and say that the
problem I have is that I -- I guess my question is given
the chorus of opposition that seems to be really related
to the steepness of the decline, what was the -- what was
the barrier to putting in a steeper decline in this rule?
Because that seems like that would have solved a lot of
the concerns that people have expressed?

CHAIR NICHOLS: We could go to Mr. Jackson's
suggestion, since he was the last speaker, and
specifically after opposing everything said but he'd be
happier if we were to just go from two and a half to three
presumably or three and a half.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: In
conversations that we've had in stakeholder groups,
including with NRDC, there was some discretion in how we
set the decline. We had the decline of 2.5 percent to SB
100, which has an overall average grid decline in terms of
becoming cleaner of 2.5 percent by 2030 -- year over year,
2.5 percent by 2030. There are certainly other statutes
that we could tie the decline to, and so there was some
discretion there.

BOARD MEMBER TAKVORIAN: So if I'm understanding
you, there's not a barrier to creating a steeper decline
now or sooner than three years from now when the review
would occur?

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA:
That's correct.

VICE CHAIR BERG: And that includes an investment? You don't -- you didn't hear from the stakeholders that that might deter, you know, in a -- in a meaningful way? I'm not talking about a small way, because I do agree that we do need to be protective, but I would appreciate if you had any comments on the investment side.

INDUSTRIAL STRATEGIES DIVISION CHIEF SAHOTA: And that's -- that's a great question, because the way the standard is set right now with the 2.5 percent, we believe that multiple manufacturers can qualify and continue to become more efficient over time. If we start to set a much steeper decline -- and that will be subjective depending on which stakeholder you talk to. If we set too steep of a decline, you're only going to be able to have some limited amount of manufacturers be able to keep up with the efficiency gains that will be mandated by the stat -- by the standard -- year-over-year standard.

And so it's a balancing act of not setting a standard that was so tight that only one manufacturer could meet it, but also trying to make sure that we set a standard that was tied to the overall grid.

CHAIR NICHOLS: But in any event, we really haven't had a chance to examine what the number ought to
be. And therefore, we couldn't do it today no matter what, I think. It would be inappropriate to just throw out a number. So we would have to direct the staff to start working on something and bring it back sooner than you originally had intended. And I do think that's a good idea. I think we're all feeling the need to move further faster.

So I think the question for you, Ms. Sahota or Mr. Corey would be how -- how quickly could we actually ask you to bring that back.

EXECUTIVE OFFICER COREY: We could, as part of 15 day changes, receive direction from this Board to work on, through a public process, a more stringent decline curve. And because of the not environmental conse -- basically, the Board could vote on the measure today, direct us, by virtue of the 15-day process, to focus on a steeper decline curve and delegate that action to the Executive Officer.

CHAIR NICHOLS: I'm seeing enough head nodding around here to think that that would be a good -- I see -- I see one shaking head, but I see quite a few heads nodding.

BOARD MEMBER SPERLING: I would add -- so if that were going to be done, I would say -- I mean, the improvement is really tiny that we're talking about by
having a little steeper curve. And so the comparison
should be, okay, you gain a little bit of improvement, but
at what cost, in the sense of, is this -- as kind of
Regina was starting to say -- Rajinder was starting to
say, you know, is this going to reduce the investment in
new fuel cells. And these fuel cells are much better than
what they're replacing, so...

CHAIR NICHOLS: I agree with you, but I think
that consistency here also includes consistency with the
kind of deadlines that we're pushing for everywhere else
in our program, which is it is at a cost for sure. But at
the same time, there's also the sense of urgency about
trying to get to the -- get to the goals.

Did you have a hand up? Yes, Mr. Monning.

BOARD MEMBER MONNING: Yes. Thank you, Madam
Chair. I also just want to thank the staff for the
briefing I was provided in the preparation. And I think
this level of conversation now is exactly how the Board is
established to think down the road.

I do want to just, as a Senate representative
here, underscore the letter dated December 9th signed by
the author of SB 1637 Evan Low, and as presented today by
his representative Mr. Mair, also signed by senators Beall
and Leyva, and Assembly Members Irwin, Talamantes, and
Mullin supporting the proposed standard before us today
and finding it consistent with the goals and objectives of AB 1637. I just want that to be before the Board as you prepare to vote today.

I'd also just underscore, I appreciate the comments of my good friend Mr. De La Torre on the somewhat apple and oranges comparison of diesel and standards on fuel cell technology. I do think it's important though to underscore, as the good doctor indicated, some of the back-up energy that does rely on diesel that can be supplemented by fuel cell from a public health point of view is a safer alternative.

And to the extent that these standards allow for the adaptation that continues to rely upon fuel cell as an alternative to diesel, there's a public health benefit there. And I think we should keep that in mind.

And appreciate the opportunity to share those thoughts. Thank you.

CHAIR NICHOLS: Thank you.

Well, so where we are now is we have the motion on the table and we're considering the possibility of adding some language in the 15-day notice that would bring it back faster for a -- it would bring it back for a faster review of the rate of decline and what's feasible.

I appreciate Professor Sperling's comment. And I don't want to dictate what the answer so that question is,
but I do want to examine the question, because I think it's important, not only for the -- for the witnesses who spoke on that matter, but also in my own head, I just -- I don't find consistency with the 2017 Scoping Plan in and of itself an adequate answer to how quickly we should be moving towards renewable fuels here.

So I'm going to propose then that we add that language for the 15 days, but otherwise bring it back for a vote. Yeah. I don't know if we need anything formal to indicate that or if we just give you direction?

BOARD MEMBER BALMES: To totally agree and I'd be willing to --

CHAIR NICHOLS: Okay. So do you feel --

BOARD MEMBER BALMES: -- support that motion.

CHAIR NICHOLS: Do you feel we need to put a formal motion in on that or is staff able to proceed?

CHIEF COUNSEL PETER: I think the staff can proceed with the direction from the Board.

CHAIR NICHOLS: Okay. So we're all set.

All right then, without further do, I'm going to call for a vote.

All in favor of the resolution with the direction to staff please say aye?

(Unanimous aye vote.)

(Supervisor Fletcher not present.)
CHAIR NICHOLS: Opposed?
Any abstentions?
Thank you. Thanks very much. This was a really good discussion and appreciate it.
We will move on to the next item then, which is the South Coast 8-hour ozone SIP update.
And congratulations.
All right. Staff, are we ready to move on to the next item?
This is an update. And it's based on the fact that in March of 2017, the Board adopted the South Coast 2016 Air Quality Management Plan that included an attainment demonstration for the 80 parts per billion 8-hour ozone standard. The attainment demonstration relied on emissions reductions from future advanced technology measures as allowed by section 182(e)(5) of the Federal Clean Air Act.
The South Coast 8-hour ozone SIP update before the Board today includes a Contingency Measure Plan that lays out an aggressive approach to achieving the final increment of reductions needed to attain the ozone standard.
Mr. Corey, will you please introduce the item.
EXECUTIVE OFFICER COREY: Yes. Thanks, Chair Nichols.
Invoking section 182(e)(5) of the Act as part of the 2016 Air Quality Management Plan brought with it a commitment to submit a report to U.S. EPA three years ahead of the attainment date or by January 1, 2020. The report must demonstrate the emission reductions assumed from the advanced technology measures in the plan will be met in 2023 or the State has adopted contingency measures capable of delivering the remaining emissions that the advanced technology measures have not yet achieved.

Earlier this month, the South Coast Air Quality Management District adopted the contingency measure plan, planning for attainment of the 1997 8-hour ozone standard. The District's Clean Air Act section 182(e)(5) Contingency Measure Plan documents California's progress toward implementation of the 2016 Air Quality Management Plan. In addition, the Contingency Measure Plan lays out a strategy to achieve the remaining emission reductions through newly identified emission reduction strategies, CARB innovative new measures, additional incentive funding to transition to the cleanest available technologies, and/or funding to achieve the required reductions from sources under federal jurisdiction.

Scott Sking -- rather Scott King in the Air Quality Planning and Science Division will give the staff presentation.
Scott.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST KING: Yes. Thank you, Mr. Corey. Chair Nichols and members of the Board, today staff is presenting an update to the South Coast State Implementation Plan for the 80 parts per billion 8-hour ozone standard.

--o0o--

AIR POLLUTION SPECIALIST KING: As you may remember in 2017, the Board adopted -- oh, sorry. All right Hear me better now?

As you may remember in 2017, the Board adopted the South Coast 2016 Air Quality Management Plan, or AQMP, which included CARB's mobile source reduction commitment contained in the 2016 State SIP Strategy. The AQMP also included an update to the 80 parts per billion ozone attainment demonstration for 2023.

This attainment demonstration primarily relied on NOx reductions from State mobile and District stationery measures, but also required advanced technology measures that are allowed for extreme ozone nonattainment areas under the federal Clean Air Act.

When utilizing advanced technology measures to demonstrated attainment, the State must submit contingency
measures three years prior to the attainment year that are sufficient to provide for any of the remaining reductions needed. Today's item addresses this requirement.

But before going into the details, let's look at the ozone air quality in the South Coast.

--o0o--

AIR POLLUTION SPECIALIST KING: Ozone levels in the South Coast have decreased since the 80 parts per billion ozone standard was established in 1997. But, there still remains a significant challenge to meet this standard. These bars shows ozone levels in 1997 and today relative to the standard that must be attained by 2023. As you can see, ozone levels have decreased in the South Coast by almost 30 percent since 1997.

This improvement in ozone air quality has been achieved through State and District rules targeting oxides of nitrogen, or NOx, and reactive organic gases, or ROG. Air quality modeling now shows that NOx reductions in particular are key to meeting the ozone standard, therefore our control strategy focuses primarily on reducing NOx emissions.

--o0o--

AIR POLLUTION SPECIALIST KING: This chart shows that due to CARB rules, NOx emissions in the South Coast since 2000 have been reduced by - there we go - 90 percent
from light-duty vehicles, 80 percent from heavy-duty trucks, 70 percent from off-road equipment, and similar reductions have been achieved from sources under District authority, such as factories.

--o0o--

AIR POLLUTION SPECIALIST KING: However, NOx from sources solely under federal responsibility, that is planes, trains, and ships, have been reduced by less than 16 percent. In fact, NOx emissions from many federal -- federally regulated categories have been growing steadily higher in the last ten years. I will talk more about these sources later in the presentation.

Let's now talk about the magnitude of the emission reductions needed to meet the 80 parts per billion ozone standard.

--o0o--

AIR POLLUTION SPECIALIST KING: This bar graph depicts the NOx emission -- NOx reductions that have been achieved since 1997 when the NOx levels in the South Coast were well over 1,100 tons per day. Since that time, the State and District have developed and implemented several ozone SIPs that have provided significant NOx and ROG emission reductions in the South Coast. The 2016 AQMP determined that NOx emissions needed to be lowered from 522 tons per day of NOx in 2012, the top of the yellow
box, to 141 tons per day in 2023, or the top of the green box.

CARB and District actions -- CARB and District actions have collectively reduced NOx emissions in 2023 by 76 percent as shown in the gray and yellow boxes, which aren't there any more.

(Laughter.)

AIR POLLUTION SPECIALIST KING: Programs included in the 2007 AQMP will remove about 620 tons per day of NOx by 2023, while programs included in the 2016 AQMP will reduce an additional 280 tons per day of NOx.

The blue area - which is still there. Good - represents the reductions to be provided by advanced technology measures under section 182(e)(5) of the Act. The 100 tons -- the 108 tons per day of reductions from these measures represent less than 15 percent of the total reductions from 1997 and the final increment of NOx reductions needed to achieve the ozone standard.

--o0o--

AIR POLLUTION SPECIALIST KING: While today's submittal addresses emission reductions needed from those measures we could not define in the 2016 AQMP, that is the advanced technology measures, first I'd like to quickly walk through the progress we have made on the defined measures in the 2016 AQMP.
Since the 2016 AQMP was adopted, CARB has been working to implement the defined measures from the State SIP Strategy aggregate commitment. Rules, such as the Ocean-Going Vessel at Berth Regulation that you heard last week, the On-Road Heavy-Duty Incentive measure, and the Zero-Emission Airport Shuttle Regulation will provide NOx reductions in 2023.

Other rules adopted since 2017 set the stage for additional reductions, such as the Zero-Emission Powertrain Certification Regulation and the Electric Vehicle Supply Equipment Standard. These rules passed in June of this year, are instrumental in preparing the infrastructure, consumer protections, and consumer confidence that will be needed to provide widespread conversion to low-emission vehicles. Later today, you will also hear about the Advanced Clean Trucks Regulation, another element in our overall emission reductions strategy.

--o0o--

AIR POLLUTION SPECIALIST KING: I will now shift my focus to the contingency very strategy. To provide the reductions that utilized -- that utilized the advanced technology provision, the District and CARB have jointly developed this SIP update, adopted by the District last week. It lays out an aggressive strategy of regulations
that go beyond what was in the 2016 AQMP, potential areas for new regulations and incentives, and the need for reasonably available federal actions to achieve the emission reductions to meet the 80 parts per billion ozone standard in the South Coast.

I will now walk through the elements of the proposed contingency strategy.

--o0o--

AIR POLLUTION SPECIALIST KING: This table breaks down the different elements in the South Coast Contingency Measure Plan that are needed to achieve the 108 tons per day of NOx reductions. These include:

- New CARB and District emission reduction strategies that have been developed since the 2016 AQMP;
- Additional incentive funding to transition to the cleanest technologies;
- And, addressing the reductions needed from the federal government.

Let's now discuss each of these elements.

--o0o--

AIR POLLUTION SPECIALIST KING: Consistent with California's practice of continuing to look for new emission reduction opportunities, CARB and District staff have identified the strategies shown here that go beyond the 2016 AQMP.
On the right, you can see several new District measures that have already been adopted and provide NOx reductions. These include new District rules needed to speed the sunset of the RECLAIM program, a memorandum of understanding with several airports, the deployment of Metrolink Tier 4 locomotives, as well as an upcoming Ports MOU.

CARB has also adopted new rules providing additional NOx reductions in -- by 2023. Our actions achieving these include recent amendments to the Low Carbon Fuel Standard and the Portable Engines Registration Program. In addition, CARB will be considering a Heavy-Duty Truck Inspection and Maintenance Program and also CARB is developing new innovative measures that represent a new commitment in 2023 of three tons per day of NOx reductions.

In total, these measures are expected to provide 25 tons per day of NOx reductions in 2023. And CARB and District staff are continuing to identify additional opportunities for emission reductions.

The next slide provides a little more detail on the proposed new CARB measures.

--o0o--

AIR POLLUTION SPECIALIST KING: In developing the proposed new measures listed here, staff have -- staff
have looked at all sectors of the economy. Some of the measures shown will be transformative, providing not only criteria pollution reductions, but also climate change benefits.

The proposed new measures include:

A new statewide locomotive regulation that will provide criteria, toxics, and greenhouse gas reductions. We had our second workshop on concepts to reduce emissions from locomotives and railyards yesterday in San Bernardino;

Establishing more stringent off-road diesel engine standards. CARB staff see that tech -- the technology is currently available to lower emissions from these sources;

Also requiring state contractors to use the cleanest equipment available and State agencies to only purchase clean vehicles and equipment. A first step was made by the Governor's landmark Executive Order requiring State agencies and departments to review and update overall operations, transportation investments, and the use of the State's purchasing power to advance climate goals;

We can also get reductions from the Scoping Plan measures that switch California to 100 percent clean energy for residential and commercial water heating, space
sheeting, and air conditioning appliances;

    Also, from lowering VMT with reductions in
single-occupancy vehicle travel, and by integrating
transportation with land conservation strategies;

    Finally, where we put transportation and housing
also imposes and often reinforces long-standing racial and
economic injustices by placing a disproportionate burden
on low-income residents, who end up paying the highest
proportion of their wages for housing and commuting. CARB
believes opportunities exist in cooperation with local
governments to improve mobility options within the
transportation sector, while also reducing emissions to
help with attaining the ozone standard in the South Coast.

    Collectively, these new measures are expected to
provide three tons per day NOx reductions in the South
Coast in 2023.

    --o0o--

    AIR POLLUTION SPECIALIST KING: These innovative
measures are transformational and take time to implement,
but reductions are also needed now. The proposed
contingency strategy seeks to expand incentive funding.
Incentive programs are extremely effective in accelerating
the introduction of clean vehicles into California's on-
and off-road fleets in the near term, and represent the
best opportunity to get emission reductions by 2023.
Recent legislation that provided continued incentive funding include AB 1274, annual smog abatement fees that increase funding to the Carl Moyer Program. This bill is anticipated to increase funding by about 25 to 30 million annually for the South Coast.

Moving forward, the District plans to advocate for additional funding, including pursuing the ability to place a sales tax ballot measure for investment in clean air. This will allow the people of the South Coast region to decide for themselves whether they want to invest in clean air and address climate change. The District is also looking into more Greenhouse Gas Reduction Funds and a statewide bond to fund clean vehicles.

In total, this money could achieve 15 tons per day of NOx reductions in 2023.

---

AIR POLLUTION SPECIALIST KING: I'm going to go into a little more detail on the next strategy, as California and the District adopt the most stringent rules in the nation and seek to transform California's vehicle fleet, federal sources are expected to become the dominant source of NOx emissions from mobile sources in the South Coast. This graph shows that the federal government is not -- has not come close to lowering the level of emissions from the sources they oversee, when compared to
the reductions from the State sources.

If the federal government does not step up, emissions from federal sources will surpass those emissions regulated by the State in 2030, a fact that would have been shocking just a couple decades ago. Federal action is critical to provide NOx reductions from aircraft, ocean-going vessels, locomotives, and interstate trucks.

--o0o--

AIR POLLUTION SPECIALIST KING: Therefore, emissions from sources under federal responsibility must be reduced. CARB has identified actions utilizing currently available technology that will lower emission -- lower emissions from sources where the federal government has a strong oversight role. These reductions are achievable and, as a partner in protecting the health of the citizens of the South Coast, the federal government needs to take action.

The measures shown here envision the cleanest available large commercial transportation sources in California, such as Tier 4 locomotives, low-NOx heavy-duty trucks, Tier 3 ocean-going vessels, and cleaner aircraft. An alternative to direct federal regulations of these sources is for the federal government to provide funding to the State and District to achieve comparable
reductions.

--o0o--

AIR POLLUTION SPECIALIST KING: Asking for federal help is not new. For more than ten years, California has requested the federal government do their job in reducing emissions from federally regulated sources. For example, on April 13th, 2017, CARB petitioned EPA to exercise its authority to adopt more stringent emission standard for locomotives.

On June 2nd, 2016, the District and ten other State and local environmental agencies petitioned EPA to undertake rulemaking to lower the on-road heavy-duty engine emission standard for NOx.

On June 3rd 2016, the San Joaquin Valley Air Pollution Control District submitted a request that EPA undertake rulemaking to establish new national standards for heavy-duty trucks and locomotives.

And on November 28th, 2007, CARB submitted the 2007 State Strategy that included measures to provide reductions from federally regulated ship main engines and boilers, line-haul locomotives, and commercial harbor craft. Had EPA acted on the 2007 SIP measure for federal sources in a timely manner, these measures would have lowered NOx emissions in the South Coast by over 60 tons per day in 2023.
AIR POLLUTION SPECIALIST KING: To meet the 80 parts per billion ozone standard in the South Coast, all levels of government must do their part. The ozone SIP Update serves as a call to action. But for this to happen, we need cooperation from EPA and we need the federal government to act quickly.

By approving this plan, we will send a clear message that federal action is needed for us to meet the ozone standard in the South Coast. This update is approvable, but EPA could object to assumptions for federal actions to reduce emissions.

In any event, we are committed to working with the District to pursue all feasible measures for achieving attainment of the ozone standard in the South Coast, and reducing the reliance on federal action.

AIR POLLUTION SPECIALIST KING: Going forward, staff -- CARB staff will begin the development of identified new measures. We will continue our public process to identify additional emit -- additional emission reduction strategies. And CARB staff will work with EPA and partner with other states to realize federal actions needed to get the necessary reductions from these sources.
AIR POLLUTION SPECIALIST KING: CARB staff recommends that the Board adopt the ozone SIP Update with a commitment for reducing -- for reductions from the new measure -- sorry, measures and submitted to EPA as a revision to the California SIP.

Staff also recommends the Board direct staff to bring additional emission reductions to the Board for consideration by mid-2020.

Thank you for your patience and we would be happy to answer any questions.

CHAIR NICHOLS: Thank you. I think we can proceed to the testimony starting with the South Coast AQMD representative.

You could lower that. We now know you can also lower the whole thing, if you want to.

MS. REES: Very fancy.

CHAIR NICHOLS: For those of us who are somewhat vertically challenged.

There we go. Great.

MS. REES: In some cases, very vertically challenged.

Good morning, Chair Nichols and members of the Board. My name is Sarah Rees, Assistant Deputy Executive Officer for the South Coast Air Quality Management District.
Thank you for the opportunity to comment on South Coast's 8-Hour Ozone State Implementation Plan Update. This update has been developed by South Coast AQMD and California Air Resources Board staff through our public processes and is a joint strategy by both agencies to address the Clean Air Act contingency measure requirements for the 1997 8-hour ozone standard.

South Coast AQMD appreciates the efforts by CARB staff in working with us and we fully support the adoption of the proposed SIP update. As described by staff, South Coast AQMD and CARB staff have identified additional measures and incentive funds to achieve emission reductions as part of the contingency measure plan.

However, a substantial portion of the needed emission reductions from sources are subject to federal regulatory authority. While we will continue to work with CARB to ensure that sources subject to State and local regulatory authority are addressed to the maximum extent feasible, federal action is absolutely critical for meeting the standard. It's important to reiterate that federal air quality regulations for sources such as ocean-going vessels, aircraft, locomotives have not kept pace with other sources subject to CARB and/or South Coast AQMD authority, resulting in a substantial contribution of these sources to our attainment challenge.
Without significant reductions from sources under federal authority, it will not be possible to attain the 8-hour ozone standard by 2023. To the extent that EPA fails to act on federal sources that are beyond California's regulatory control, the funding needed to achieve the necessary reductions dramatically exceeds current and projected resources.

In summary, all levels of government need to take aggressive action for reducing emissions under their respective authorities to achieve the standard by 2023 through both regulatory and incentive measures. The South Coast AQMD governing board approved this contingency measure plan last Friday and we are fully committed to do our part to work collaboratively with CARB and EPA on implementation of this plan.

We strongly support the proposed 8-hour ozone SIP updates and urge you to adopt it without delay for submission to EPA.

Thank you.

CHAIR NICHOLS: Thank you.

MS. HSU: Chair Nichols and members of the Board, my name is Regina Hsu and I'm an attorney with Earthjustice.

We appreciate the inclusion of additional measures in the draft final contingency measure plan. But
unfortunately, this plan still does too little to assure
the public that we will actually meet the federal clean
air standards.

   As the Board is well affair, the South Coast air
basin has some of the dirtiest air in the nation and has
failed to meet a single ozone standard since the standards
were first issued in 1979.

   To meet the 2023 deadline, CARB and the South
Coast AQMD need to include more commitments to additional
reduction. We ask that CARB -- we ask that CARB, one,
commit to more reductions, two, identify actual
enforceable measures for these commitments - excuse me -
three, quantify the reductions from these measures, and
finally, push the South Coast AQMD to include more
commitments to reductions in all sectors.

   ARB, as the agency with authority over 46 percent
of NOx emissions, needs to do more. We recommend that ARB
identify enforceable measures to achieve reductions from
mobile sources. There are more opportunities in this
respect.

   We also recommend that ARB specify how these
measures will achieve reductions. Some of the commitments
in the plan are unclear, specifically the Innovative New
Measures Commitment, which seems like another black box
strategy.
ARB should set -- should set out regulatory measures with sufficient detail about how they will achieve quantifiable reductions. We also suggest that ARB strengthen regulations with emission reduction commitments, such as the Advanced Clean Trucks Rule.

For example, the San Pedro Bay ports would need 17,000 zero-emission drayage trucks to meet their emission reduction commitments in the Clean Air Action Plan. The Advanced Clean Truck Rule, as it stands, would require manufacturers to sell no more than 9,000 trucks by 2030.

Finally, ARB should push South Coast AQMD to include more commitments to reductions in all sectors. And this includes strengthening their regulations, targeting compliances in the commercial and residential sector, and implementing zero-emission requirements in the industrial sector with the Best Available Retrofit Control Rules.

We're running out of time and paying for the failed black box strategy every day with our health. We need a stronger plan and we're relying on ARB and the South Coast AQMD to finally get us to meet the federal clean air standards.

Thank you.

MR. MAGAVERN: Good morning.

Is this microphone on?
VICE CHAIR BERG: It will be.
You had it.
CHAIR NICHOLS: It looked like it had a green light at moment there.
VICE CHAIR BERG: There you do.
MR. MAGAVERN: Okay. It's on now. All right.
CHAIR NICHOLS: Yes.
MR. MAGAVERN: Good morning, Madam Chair and Board members. Bill Magavern with the Coalition for Clean Air.

This is an urgent matter, because the South Coast Air Basin still has the worst smog in the entire nation. And, in fact, the South Coast is where Professor Arie Haagen-Smit first identified what causes smog and led actually to the creation of this Board and to Congress given California our unique Clean Air Act authority to set stricter mobile standards than the federal.

It was the smog in the Los Angeles area that also led to the creation of the Coalition for Clean Air. That was in 1971. And over that time, this Board and the South Coast Air Quality Management District have taken many major steps to clean up the air, often breaking new ground with the measures they've adopted.

The federal government has sometimes helped. Although, at this point, the federal government is
actually trying to make our air dirtier.

Unfortunately, after all the work that's been done, we're still here in 2019. We are not on track to having healthy air in the South Coast Air Basin. It's been three years since the SIP was approved and we unfortunately have got more obstruction from U.S. EPA headquarters. And we also do not have the incentive dollars that were projected in that SIP materializing, not from the federal government. There's a fair amount that has been contributed by the State government, but not nearly as much as was anticipated by that plan.

So we now call on both this Board and the Air District to do more. There are a variety measures. Just to name a few, the District needs to swiftly wrap-up the failed RECLAIM Program and follow the AB 617 requirements for Best Available Retrofit Control Technology for stationary sources. It needs to have strong facility based measures. And this Board, among other measures, needs to adopt a strong Advanced Clean Truck Standard with instructions later today.

We support the innovative measures proposed, but they are vague right now. We'd like to see more definition. And even those will not be enough. So ten groups sent a letter to Mr. Corey. He has responded. We appreciate that. We have a meeting scheduled for early
next year. And what we ask the Board to do actually is what the staff have asked you to do, which is to direct the staff to conduct a public process early next year and return to the Board with SIP amendments that will provide significant additional reductions in NOx.

And I would add if anybody from the Governor's office is listening, or CalEPA, the Governor could really help by appointing someone with strong public health credentials to be on the governing board of the South Coast Air Quality Management District. His appointment has been vacant now for most of this year.

Thank you.

CHAIR NICHOLS: Thank you.

MR. BARRETT: Good morning. I'm Will Barrett with the American Lung Association California. Thank you for the discussion today and the presentation on the update.

Despite decades of really strong progress in cleaning up the air in the South Coast, our annual State of the Air Report continues to show the South Coast region as the most polluted by ozone in the United States. For 19 to 20 years, the South Coast has been number one on our list of most ozone polluted. Bakersfield nudge them out one year. But unfortunately, for the 20-year history of our report, we've been able to document the challenges as
you all are fully aware of.

    We know that attainment of the standards means real relief to children, seniors, people living with asthma, COPD, and other chronic health issues, respiratory issues, cardiovascular issues. And we know that too many people on too many days are breathing unhealthy air and impacting their health.

    Clearly, all parties, the District, the CARB Board, U.S. EPA all have more work to do and must step up their efforts with additional measures, additional strategies, and clear commitments to really ensuring that our attainment does get on track, on schedule.

    We echo our colleagues who just spoke for Coalition for Clean Air and Earthjustice in urging greater attention to ensuring enforceable emission reductions and carefully tracking incentive dollars and commitments expected through those incentive dollars, knowing that we have an ongoing challenge in meeting those incentive goals through the State budget and other resources.

    And especially, we'd like to see on going tracking and development of new measures to make sure that as those incentive dollars may not show up, that we're backfilling and making sure that we're getting firm commitments and enforceable measures going forward.

    So we do appreciate as others have mentioned the
ongoing commitment to coming back soon with new measures in the next year. We look forward to participating with that process with you, and with the District, and other stakeholders. And again, really urge the Board to take as strong an action as possible to get us on track to attainment with our Air District and U.S. EPA partners needing to do their parts as well.

Thank you very much.

CHAIR NICHOLS: Thank you. I believe that concludes the list of witnesses who’ve signed up to speak on this item.

Again, this is a timely action here, because we are required to submit this report to EPA. And I think that the staff presentation did a good job of laying out the really dramatic actions that have been taking place in the South Coast and at CARB. I don't think we have any criticism at this point, which is somewhat unusual.

But given the back-and-forth history over so many years, I don't think we are here to say that we think that South Coast has left any stone unturned in their efforts to try to meet these standards. And I think ourselves are feeling like we're, you know, pushing wherever we can. There are some things that clearly have not accomplished all that we would like to.

We would like to be able to turnover the whole
vehicle fleet faster than we have or at the moment at least see as being possible. But on the other hand, we've got some items coming up which will help in that regard. And I do think that we can feel proud about the fact that despite the lack of action on the federal -- so-called federal sources, all those categories that we don't -- we're not able to directly control, that we've achieved results even in those categories through other measures that we've -- that we have taken, including spending of very large amounts of money to try to make the improvements happen.

But we also are not there yet and we certainly can't say that, you know, we shouldn't keep looking hard for additional measures that can be implemented locally. I'd also like to suggest that both AQMD and ARB staff have a history of having worked at the technical level with ARB on emissions control measures in the past. And that in addition to saying, federal government you should do this, we should be in a position to also say we'll assist. We actually could help to provide some of the analysis, some of the testing, some of the -- some of the hard work that goes into adopting new standard.

But this report will go forward assuming we -- we vote to do that. And we have no idea what the response will be, but we can guess that it will not be -- will not
be favorable immediately. So in a sense, I suppose we can anticipate a continued -- a continued impasse with our federal partners here. But I think we should -- we have to do it anyway, so we might as well just get on with it.

    Yes, Dr. Balmes.

BOARD MEMBER BALMES: Well, I just want to sort of echo your comments. I appreciate all that the South Coast Air Quality Management District has done over the years. I've been studying ozone my almost entire academic professional career and I know very directly about the health effects. I used to experience the substernal chest discomfort when I used to job on smoggy days down in L.A.

    So -- and I also appreciate the staff's presentation. And I really appreciate the recommendation to direct us to -- direct you --

    (Laughter.)

BOARD MEMBER BALMES: -- to consider additional emissions reduction measures, which I know we're pushing the envelope on, as suggested by Chair Nichols. But I do think it's important, because we have kind of leveled off with regard to ozone concentrations in the South Coast. And again, that's no criticism of the South Coast.

    I go around the nation saying how proud I am of how ozone has been reduced in the South Coast, because you know when I lived there in the eighties, it was, you know,
bad then. And that was way better than it had been, you
know, two decades earlier.

So I just want to say that this is very important
work. As hard as it is to squeeze out more ways to reduce
ozone, it is a pollutant that, as Mr. Magavern said, it's
the pollutant that really got this Board started. So I
just want to say that this is an important public health
effort.

CHAIR NICHOLS: Thank you. Other -- yes, Ms.
Berg.

VICE CHAIR BERG: And just piggybacking on, maybe
we really could also focus on the 617 communities, because
maybe that's an area where we could just have them come --
close the gap of the pollution. So that would be my
recommendation as well.

BOARD MEMBER BALMES: May I just?

CHAIR NICHOLS: Yes.

BOARD MEMBER BALMES: One caveat to that is, as I
think most everybody knows, ozone is a regional pollutant.
And so while I'm very supportive of anything to reduce
pollutant concentrations in AB 617 communities, the
efforts to affect ozone concentrations are really -- have
to be regional.

VICE CHAIR BERG: They have to be regional, even
with the NOx, huh?
BOARD MEMBER BALMES: Yeah.

VICE CHAIR BERG: Okay. Thank you for that.

CHAIR NICHOLS: All right. If there are no additional questions then --

BOARD MEMBER MITCHELL: Madam Chair, I would like to comment --

CHAIR NICHOLS: There are. Yes.

BOARD MEMBER MITCHELL: -- since it's my district, if I may.

I want to thank staff for all the work you do, and for such good collaboration with the South Coast District. Obviously, there's, you know, work to be done. And we are working very diligently trying to find incentive monies to help accelerate the turnover of the fleet. And that's -- that's one very key thing for South Coast District.

The other thing is to accelerate, to the extent we can, the stringency of our regulations in mobile sources, so that we get those -- those cleaner trucks and cleaner mobile sources as soon as we can, and also to look for what additional measures we might be able to implement, as was suggested here, over the next, you know, few months and years.

I think we need to do a deep dive on what is going to be actually needed for the South Coast, and this
will go for San Joaquin as well, to meet the ozone requirements by the deadline? What are those specific parts of the scenario that we can target, so that we can concentrate on those and perhaps reach the target? It's really precarious now I think that -- whether we will be able to reach the target by 2023.

    NOx reductions are critical. We know that. We've been talking about that for a long time. And so we do need to be looking at that as well, what other measures going to do to reduce the NOx emissions?

    But I think what is really -- should be commended here is the strong relationship between CARB staff and AQMD staff, and how well they've been working together to reach our common goals, because it is a combination of mobile sources and stationary sources. And we've done a good job, I think, in the recent past of working together to bring those two elements together to get the reductions that we need.

    So thank you for all the work you've done.

There's more to do. Let's have hope and pray for this.

    Thank you.

CHAIR NICHOLS: Yes. Dr. Sherriffs.

BOARD MEMBER SHERIFFS: Maybe -- can you hear me?

    Good.
Maybe it's no coincidence I'm next to you, San Joaquin Valley here, because indeed we're absolutely in the same boat or is it the same bathtub, or the same beaker, same -- same trouble, same challenges. And incentive money is obviously very important. And I think we need to keep in mind to keep that it's not a zero sum game. I get a dollar. You don't get a dollar. We're really in this together, have to be working together for this.

It's -- in terms of collaboration, yeah, I think looking to other air districts, particularly San Joaquin working together on these, looking to CAPCOA for. And a reminder in terms of collaboration. If we are not able to get the federal government to step up and make improvements for what they have responsibility for, it will be falling on the businesses in our communities first, which will be a much more expensive place to find those reductions.

So collaboration very important. Thank you.

CHAIR NICHOLS: Additional thought here on the NOx issue. I've interrupted what was about to be a motion, but I did want to just add in response to Ms. Berg's earlier comment about focusing on 617 communities, that while it's true that ozone is the pollutant that we're talking about here, and it is a regional pollutant,
the limiting factor as we understand it is NOx. And the NOx has other impacts in the immediate area around it, so -- and sources of NOx tend to also be sources of other pollutants including toxics as well.

So I don't want to just dismiss the notion that there should be a -- kind of a focused look at where we could get more bang for the buck by looking at those places where we have the hot spots and seeing whether there's additional measures beyond what we've been talking about before.

I do think that that's a useful direction when we come back to looking at more actions that are needed.

And with that, I will entertain a motion.


BOARD MEMBER BALMES: Second.

CHAIR NICHOLS: The motion has been moved and seconded.

All in favor please say aye?

(Unanimous aye vote.)

(Supervisor Fletcher not present.)

CHAIR NICHOLS: Opposed?

None.

No abstentions, I believe.

All right. So thank you all and we'll be back on this next year for sure.
We have a very, very challenging schedule today, and a lot of things to pack in. But I think we need a break both for the reporter and for everybody else. And it just needs to be a shortened one. I want to also remind people, as I think was announced at the outset of this meeting, that there's a display of clean trucks that have been brought in for us to look at in conjunction with the Advanced Clean Truck rule that we're going to be working on.

So I am going to ask that we take a half hour break at this point, before we take up the ACT rule, and let anybody who's thinking of coming over know that we won't be starting until -- until that point.

And for those of us who are going to try to grab lunch, we can either do it during the break or without having to, you know, break up the hearing, people can adjourn for a few minutes and go grab some lunch later, if they want to. But I do think we should just be in recess between now and 12:05. And we'll see everybody back here then.

Thank you.

(Off record: 11:35 a.m.)

(Thereupon a lunch break was taken.)
AFTERNOON SESSION

(On record: 12:06 p.m.)

CHAIR NICHOLS: Good afternoon, ladies and gentlemen. It is afternoon and we're going to resume the hearing. The Board members who are not sitting up here on the dais are in the back room where they can hear and actually see the presentation. A couple of people are downstairs still I think looking at the cool trucks that were brought in. But if they miss some of the staff presentation, I know that they have had an opportunity to review it.

So I'm going to get us started here.

The next item on the agenda is the Proposed Advanced Clean Truck Regulation. And before I describe what it is, I want to say that this is, as far as I can tell, the first ever in the world effort to mandate the construction and deployment of zero-emission vehicles in the heavy-duty sector.

This is emerging as one of, if not, the largest targets of opportunity, also largest areas of concern for us as we strive to meet our health-based standards, as we try to improve, in particular, the health outcomes in some of the poorest communities in the state that also happen to be adjacent to ports and railyards. And it's a -- and it is also an area where clearly not just California, but
the world is in need of a major technology upgrade.

So this proposed regulation will do two things. First of all, manufacturers will required to sell medium- and heavy-duty zero-emission vehicles, or ZEVs, as a percent of sales. And second, large entities, including major retailers, restaurants[SIC] chains, and government agencies would have a one-time reporting requirement to inform us about how their facilities actually use these kinds of vehicles, so that we're in a better position to develop the next phase of this regulation and to understand the impacts of the regulations.

This is obviously a complex and highly important industry that we're talking about. So we're going -- this is only the beginning of our efforts here. It's part of a comprehensive strategy to address emissions from motor vehicles and is focused on accelerating a market. And there is a market element that will be important in this as well.

Exhaust from mobile sources and the fossil fuels that power them are the largest contributors to the formation of ozone, and greenhouse gases, and toxic diesel particulate matter. We've made significant progress in addressing these issues, but more still needs to be done to address California's particular circumstances. And by you unique circumstances, I think that largely refers to
our role in the logistics world nationally and
internationally, and the important role that movement of
goods plays in our economy, as well as the impact on our
communities.

California has been supporting transportation
electrification already in a number of ways. Our
Governor -- several governors have issued specific
executive orders directing State agencies to enact
policies to reduce emissions, including direction to
accelerate zero emission vehicle adoption and achieve
carbon neutrality by 2045.

This proposal will send a clear market signal for
wide-scale electrification of trucks and buses, and build
upon Board decisions to adopt the Innovative Clean Transit
Regulation, and the Zero-Emission Airport Shuttle
Regulation, both of which this Board has previously
enacted, which already are planning or will projected[SIC]
to achieve a zero-emission complete fleet by 2040 for the
buses and for 2035 actually by the airport shuttle.

So we've already put down a pretty important
marker here in this space. We also have engaged a
tremendous amount of activity on the part of local
governments, utilities, fleet owners, and others who are
looking at ways that they themselves can be more actively
involved in the transition to electrification.
So a lot is underway already. This is very important, and as far as we know, absolutely groundbreaking piece, because it focuses on the production of the vehicles to make sure that they will be there.

So without further ado, Mr. Corey, would you please introduce this item?

BOARD MEMBER SPERLING: Chair Nichols, could I --
CHAIR NICHOLS: I'm sorry. Yes.

BOARD MEMBER SPERLING: Chair Nichols, could I just add -- this is Dan down here.

CHAIR NICHOLS: I see you.

BOARD MEMBER SPERLING: I just wanted to reinforce what you just said. You know, I've just been in Europe for a few months. And I've been spending time talking to the European Union, European Commission, some of the NGOs there, and they are looking very carefully at this. You know, Chair Nichols, what you were saying, this is one of the most important things, you know, -- innovative and important things we've done. And there's a lot of people watching what we do on this, because we are -- this is global leadership right here.

CHAIR NICHOLS: Thank you.

BOARD MEMBER SPERLING: And they're very -- and they're very enthusiastic about figuring out how to follow us.
CHAIR NICHOLS: Great. I think we're all probably feeling like the end of the year is driving, to some extent, our activities here, just in the sense that we see -- feel time speeding up and we know that action is needed. But, of course, it has to be done in a considered and careful way. And we want to make sure that the suite of different rules that we're working on work together and reinforce each other.

So we will be asking questions, I'm sure, as we hear from the witnesses on all sides of this. We understand that, you know, members of the community, environmental organizations want us to do more faster. Members of industry are concerned that we might be going too fast and we might be demanding things that are not feasible or potentially. And we have seen this happen in the past forcing the introduction of technologies that aren't ready for prime time, and that aren't successful with their intended purchasers.

So this is not -- this not a no-brainer by any manner of means. In fact, it's a big brainer. It requires us to really use our intellectual abilities and our technical knowledge to make a wise set of regulations here.

This is the first of what will inevitably be two hearings. We have a requirement to listen, and to take
testimony, and to reflect upon it, but we will not be
actually adopting anything here today, until we've had a
chance to look at the potential for -- for amendments. So
without any further preamble on my part, let's turn to the
staff.

Mr. Corey.

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

And as you noted, maximizing the use of zero-emission
technologies is necessary component -- a necessary
component to effectively address California's air quality
and climate protection goals. As part of our State
Implementation Plan, Sustainable Freight Strategy, and
Scoping Plan, we concluded that zero-emission medium- and
heavy-duty vehicles were needed everywhere feasible to
meet air quality standards and meet our sustainability
targets.

The current zero-emission truck market is mostly
served by small manufacturers and up-fitters. It's
necessary to accelerate the market to meet our goals by
bringing all manufacturers into the zero-emission vehicle
market and to instill confidence that early adopters of
zero-emission technology will be backed with long-term
market support.

Zero-emission trucks provide immediate heath
benefits to local communities, are more energy efficient
than conventional trucks, and significantly reduce
petroleum and other fossil fuel use. Accelerating the
zero-emission trucks everywhere feasible is a key strategy
in the State's efforts to reduce emissions from the
transportation sector.

The proposed manufacturer ZEV sales requirement
is structured to be consistent with product planning
schedules with the goal of making successful and orderly
transition to a self-sustaining market.

Large entities and the fleets they work with will
be required to complete a report, which would provide
information needed to craft future fleet rules with
appropriate flexibilities, while ensuring a level playing
field. But ultimately, the combined strategy of the
proposed manufacturer requirement and future fleet rules
will be a key part of making substantial progress towards
achieving a zero-emission future.

I'll now ask Paul Arneja of the Mobile Source
Control Division to begin the staff presentation.

Paul.

(Thereupon an overhead presentation was
presented as follows.)

AIR RESOURCES ENGINEER ARNEJA: Thank you, Mr.
Corey. And good morning, Chair Nichols and members of the
Board.
Today, I will be going over the proposed Advanced Clean Trucks Regulation. This is the first of two Board hearings on this item. The staff will be returning next year with a final proposal that the Board will be voting on.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: In today's presentation, I will give an introduction to the heavy-duty zero-emission market, provide an overview of the proposed manufacturer zero-emission vehicle sales requirement, and the large entity reporting, and highlight the next steps in this regulatory process.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: California has set aggressive climate and public health goals. Widespread electrification in all sectors is a core component to meeting these ambitious targets.

The proposed rule will foster and accelerate the first wave of zero-emission trucks in California. The proposed rule will support our stated goal of transitioning the pickup and delivery sector to 100 percent zero-emission by 2040. It will also support the efforts by the Port of Los Angeles and the Port of Long Beach in their goal of 100 percent zero-emission drayage trucks by 2035, as well as ensure that zero-emission
trucks will be available for state fleets to meet the purchase requirements as required by state law.

Finally, the proposed rule will meet and exceed the SIP obligation for a Last Mile Delivery Rule and will result in both criteria pollutant and greenhouse gas benefits.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: The Advanced Clean Trucks Rule is part of a suite of regulations designed to spur adoption of zero-emission technologies in medium-duty, heavy-duty, and the off-road sectors. The proposed rule builds on other zero-emission regulations approved over this past year, including those that apply to transit buses and airport shuttles.

Today's proposal will be followed by future zero-emission fleet rules that we're planning to bring for your consideration in 2022. This new set of zero-emission fleet rules is expected to provide -- to set approximate targets for a wide range of trucks types and fleets, including last mile delivery applications and drayage truck fleets.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: The medium- and heavy-duty truck sector is a diverse set of vehicles in a wide variety of applications. The zero-emission truck and
bus market in particular has seen significant growth and
development over the past few years. This image shows the
types of zero-emission vehicles that are commercially
available today.

These zero-emission vehicles are offered
primarily by a variety of smaller companies, many of them
being start-ups without an established dealership network
and limited manufacturing capability. While the number of
models and configurations continues to grow, they do not
yet cover the breadth of the medium- and heavy-duty
market.

Major manufacturers are generally not offering
commercially available vehicles yet. Most traditional
manufacturers have zero-emission truck demonstrations
underway and nearly all of them have announced plans to
have commercially available zero-emission vehicles in the
next few years if demonstrations are successful.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: In addition to
manufacturers, major part suppliers are entering the
zero-emission truck market. These companies are creating
integrated solutions for electrified powertrains, e-axles,
and other components in a zero-emission supply chain.

Many of these companies are building on their
established relationships with truck manufacturers to
develop the next generation of solutions for these vehicles. Demonstrations are underway with plans for full commercialization shortly.

Vehicle service providers and rental fleets are also entering the zero-emission vehicle market to provide service, distribution, technician training, and leasing solutions for zero-emission products. These companies and others perform a key role in establishing a maintenance and support network that will instill confidence in these early adopter fleets.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: There are a number of elements that need to come together to enable a large-scale transformation to zero-emission technology for trucks. In particular, infrastructure to support vehicle deployments will be a critical issue moving forward. We are committed to work to address these areas, but it will take partnerships among various groups to accelerate progress.

To accomplish this, we are working with our sister agencies, including the California Energy Commission and Public Utilities Commission, alongside municipalities, utilities, industry and other states, as will be discussed following this presentation.

The proposed rule is one piece of this broader
overall strategy.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: Next, I will be walking through staff's proposal for the Advanced Clean Trucks Regulation.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: The proposal has two main components: a manufacturer zero-emission vehicle sales requirement and a reporting requirement for large entities. The first part is a requirement for manufacturers to sell zero-emission vehicles as a portion of their annual sales. The second is a requirement for businesses and other large entities to complete a one-time reporting to help support future fleet requirements. The information collected will be critical in developing future fleet rules.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: This slide describes the proposed manufacturer zero-emission vehicle sales requirement. Manufacturers who sell greater than 500 medium- or heavy-duty vehicles into California would be required to sell zero-emission vehicles according to the percentages displayed in the table.

The middle category, Class 4 through 8, has the highest requirements, going as high as 50 percent of
electric sales by 2030, as our assessment shows that a portion of these vehicles have characteristics that are suited for electrification. This class includes delivery vans, refuse trucks, school buses, and utility trucks. Many of these vehicles are expected to operate locally and return to a central location where infrastructure can be installed.

For the Class 2b to 3 category, a higher proportion of these vehicles are owned by small fleets which have less operational flexibility. In addition, fewer of these vehicles are expected to return to a central location where infrastructure can be installed.

Pickup truck sales in this category would not be counted until the 2027 model career. These vehicles are primarily purchased for their towing and payload capabilities, which are more challenging to electrify than other vehicles in this category. Half of these pickups are purchased by individuals for personal use for towing trailers, RVs, boats, and horse trailers that cannot be done by light-duty pickups.

For the Class 7 to 8 tractor category, early applications are likely to be in drayage and shorter haul and not in long-haul applications that require a public fueling or recharging network to be developed.
In addition, these vehicles are often loaded to their weight limit, meaning the weight considerations in these vehicles are more important.

The regulation would also require Zero-Emission Powertrain Certification procedures, where applicable in order to earn zero-emission vehicle credits. It also includes a number of flexibility provisions that I will describe on the next two slides.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: The proposed regulation uses a credit and deficit system to provide flexibility to manufacturers. Vehicles sold into California generate credits -- deficits, and zero-emission vehicle sales generate credits. Credits have a finite lifetime of five years.

As shown, heavier vehicles have higher emissions and generate more deficits, but also earn more cred -- ZEV credits than lighter vehicles. This approach maintains overall emission benefits, but also -- but allows manufacturers to produce more zero-emission vehicles in one category than another.

However, there is one exception to ensure that over-the-road tractors are produced. Tractors have higher miles and emissions, but have additional challenges to electrify than other truck types. Manufacturers may only
use credits from zero-emission tractor sales to offset the tractor deficits to ensure that zero-emission tractors are produced. Manufacturers may bank and trade their credits. These provisions as a whole are designed to give manufacturers flexibility while maintaining emission benefits.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: Now, I will describe the credits for hybrid electric vehicles with all-electric range. These near-zero-emission vehicle sales can earn credit based on their all-electric range. The credit reach is the maximum of 75 percent of an equivalent zero-emission vehicle at 75 miles of all-electric range. The minimum all-electric range requirement is consistent with existing California Phase 2 Greenhouse Gas Regulation. Manufacturers can use these credits to meet up to half of their annual deficit. This allows flexibility while ensuring zero-emission vehicle production.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: This slide covers a few details on how the proposed rule interacts with other existing regulations. The light-duty Advanced Clean Cars Rule contains a provision allowing Class 2b and 3 zero-emission vehicles to earn credits. Therefore,
manufacturers would need to identify whether zero-emission vehicle sales in this category would be counted towards the Advanced Clean Cars Rule or the proposed Advanced Clean Trucks Rule to avoid double counting.

We are proposing to allow zero-emission vehicle sales to count towards the Phase 2 Greenhouse Gas Regulation and this regulation at the same time.

The manufacturer's annual sales numbers, zero-emission vehicle sales numbers and credit balances will be published annually similar to what is done in the light-duty Advanced Clean Cars Rule. Transit buses are not included in this regulation.

And lastly, staff is coordinating on the development of today's proposed rule and the forthcoming low-NOx omnibus rulemaking effort expected early next year. Both of these regulations will affect heavy-duty manufacturers and staff is evaluating the cross section of these separate but related regulations.

---

AIR RESOURCES ENGINEER ARNEJA: Now, I will summarize the expected benefits to Californians associated with the zero-emission vehicle sales requirement.

These include:

Health benefits from reduced exposure to criteria pollutants, especially in disadvantaged communities where
these heavier vehicles often operate within; climate
benefits from reduced greenhouse gas emissions; the
creation of green high-quality jobs from zero-emission
truck manufacturers, suppliers, as well as infrastructure
installation and support; a reduction in energy usage and
petroleum dependence; establishing a solid foundation to
foster heavy-duty zero-emission truck development; and
other societal benefits, such as or including reduced
exposure to hazardous fumes and materials.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: Related to what
was discussed earlier at today's Board hearing, the
proposed rule is anticipated to achieve criteria emission
reductions for both oxides of nitrogen and particulate
matter. The proposed rule is anticipated to achieve five
tons per day of NOx reductions by 2031. This is five
times the SIP goal and a critical component of meeting
South Coast's 2031 ozone attainment standard.

These criteria emission benefits are projected to
result in reduced asthma rates, reduced hospitalizations,
reduced emergency room visits, and a reduction in
premature mortality.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: Supporting the
2017 Climate Change Scoping Plan, the proposed rule will
also achieve reductions in greenhouse gases beyond what would be achieved by the Phase 2 Greenhouse Gas Regulation. The proposed rule is expected to result in a reduction of 11.2 million metric -- million metric tons of effective carbon dioxide by 2040.

This comes from a combination of upstream and downstream emission reductions. Zero-emission vehicles generate zero tailpipe emissions. And in addition, the production and distribution of electricity and hydrogen produces lower greenhouse gas emissions than the production and distribution of gasoline and diesel.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: Staff is recommending the following 15-day changes to the manufacturer sales requirement. These include the following:

Matching how credit life is defined in the Phase 2 Greenhouse Gas Regulation, where the life is measured from the end of the model year and not the beginning; creating a provision to allow flexibility aimed at manufacturers who produce a small number of tractors to use non-tractor credits to meet their requirements; clarifying that the deficit make-up period is one year; updating language to close a potential loophole to prevent double counting of plug-in hybrid vehicles; and adjusting
the credit retirement order to avoid unintended
consequences; and other minor clarifying updates.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: I will now move
on to the proposed large entity reporting requirement.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: This is a
one-time reporting requirement designed to gather
information from a cross-section of large entities to
answer questions that will support future zero-emission
fleet rules.

The regulated entities include:

Any business that made more than 50 million in
annual revenue and operates a facility in California,
whether or not they own vehicles; any fleet that owns 100
or more vehicles and operates a facility in California;
any broker that directs 100 or more vehicles in
California; and government agencies, including State
agencies, federal agencies, and local municipalities.

Staff estimates roughly 12,000 entities will be
subject to the reporting requirement.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: These tables
highlight the information that the regulated entities
would be required to report. Information can be broken up
into four categories.

First, entities would give some general information on their type of business, number of vehicle-related subhaulers, and the location of their California facilities.

Second, entities would group their facilities into ten categories - stores, truck yards, warehouses, and so on - and answer questions about each group. These questions include how many facilities there are, whether they receive items using their own trucks or by outsourcing, and whether the company as a whole manages vehicle contracts or each individual facility.

Third, the entity would pick one representative facility for each of the ten categories and give more detailed information on its size, the number of truck trips it receives during one typical week, and a number of suppliers.

Last, the entity would report the number of vehicles at each facility as well as the existing infrastructure at the site and describe the operational characteristics of similar vehicles.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: The information collected though the large entity reporting would be used to support future zero-emission fleet regulations.
First, the information will help determine which regulatory strategies make the most sense for different sectors and vehicle types. Questions are designed to explore different regulatory frameworks, like fleet purchase requirements or other ideas, such as requiring larger entities to hire fleets that use zero-emission trucks or establishing zero-emission zones, where only fleets with zero-emission trucks could operate.

Next, by better understanding how different fleets meet their transportation needs, we will be in a better position to ensure that we maintain a level playing field between different types of fleets. Specifically, better understanding how large and small fleets operate their trucks will be key in ensuring that our future zero-emission fleet rules do not disproportionately impact smaller fleets. We also want to make sure that large fleets that own their own trucks are treated equally as those that outsource their transportation needs.

Information about where fleet's vehicles are located will help the California utilities and our sister agencies plan infrastructure to support an expanding zero-emission vehicle market.

Lastly, vehicle usage information will help identify fleet operational needs and how to match these needs with commercially available zero-emission vehicles.
AIR RESOURCES ENGINEER ARNEJA: On the large entity reporting requirement, staff is proposing three primarily 15-day changes.

First, we are considering options to soften or waive certain reporting requirements if enough regulated entities report before 2021.

Second, we would add guide posts to clarify that one week of truck trip data collection is sufficient, how a representative week can be determined, and other changes to improve clarity and minimize concerns about inadequate reporting.

Third, we -- additional updates to clarify staff's intent in response to comments received.

AIR RESOURCES ENGINEER ARNEJA: This slide outlines the timeline for this rule and future zero-emission fleet actions. This upcoming February, we will hold a kick-off workshop to begin development of zero-emission fleet rules. Around May, we plan to return for the second Advanced Clean Trucks Board hearing, which you will be voting on.

In April 2021, we will be receiving the information reported from entities operating in California. This will be used to support development of
the zero-emission vehicle fleet rule.

In 2022, we plan to return with a proposed zero-emission fleet rule that will drive fleet purchase of zero-emission vehicles in California.

Both the manufacturer sales requirement and the fleet purchase requirement will launch at the same time in 2024.

--o0o--

AIR RESOURCES ENGINEER ARNEJA: Staff recommends that the Board adopt the proposed resolution directing staff to return next year with the final proposed rule. In addition, staff will return as expeditiously as possible with a Zero-Emission Fleet Rule no later than 2022 with implementation beginning in 2024.

Thank you for your time today. This concludes staff's presentation. However, we have one guest speaker. I would like to introduce Dr. Paul Miller, Executive Director of the Northeast States for Coordinated Air Use Management, or NESCAUM.

CHAIR NICHOLS: We're awaiting his arrival here. Has he disappeared?

BOARD MEMBER RIORDAN: We have his slides.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI: We seem to have lost Paul.

(Laughter.)
MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:

Perhaps, we could come back to him when we can
track him down. He was here earlier.

CHAIR NICHOLS: Well, why don't we proceed. We
have, as of this moment, 101 people who have signed up to
testify on this item. I am going to start off with a
two-minute time limit for speakers and we may well go to
one, particularly if people begin to repeat themselves or
the testimony is just the same.

So I think hopefully we'll be able to get through
it. It's not that we don't want to hear from you, but we
physically can't always hear from people. And when you're
saying the same things, it oftentimes doesn't actually add
to the effectiveness of the message. So with that, I am
going to start off, however, with one of our two-minute
presenters, Mr. Miyasato from the South Coast AQMD.

DR. MIYASATO: Good afternoon, Madam Chair --

CHAIR NICHOLS: Hi.

DR. MIYASATO: -- members of the Board. Give a
shout-out to Judy Mitchell our board member. I'm Matt
Miyasato, the Deputy Executive Officer for Science and
Technology Advancement at the South Coast Air Quality
Management District. That's a long way of saying I'm the
chief technology guy at the nation's largest air district.

As you heard from the last item, the South Coast
basin suffers from the worst ozone pollution in the nation. And you also noticed that we are -- we are not able to regulate our federal or State sources. And so what we -- most of our pollution comes from mobile sources. And, in particular, heavy-duty trucks is our number one NOx emitter in the basin.

And so in order for us to meet not only the 2023 standard that you just heard about, but the 2031 standard for ozone attainment, we need very strong regulations. And our concern with the ACT is it's not going to get us there. Even when you take ACT, the Advanced Clean Truck, in concert with our omnibus low NOx rulemaking that you're undergoing that staff talked about, we don't see how we get the number of trucks turned over in the amount of time that we have, even between now and 2031.

We are concerned that by the time we have to show attainment, that most of the trucks will still be diesel. They'll be 0.2 gram diesel -- 0.2 gram NOx diesel trucks that are still on the road.

And so what we're urging you to do is have your staff work with our staff to determine what is that fleet makeup and what does that rollout look like, because we think what you're going to determine is what we found in our 2016 AQMP is that we're going to need a very, very strong incentive program and to force commer -- to replace
trucks today with commercialized technologies that are available, for instance, the ultra low natural gas. And with that kind of suite of different technologies and the rollout, we think that we can then work with you to ensure that the 17 and half million residents in the South Coast Basin will be guaranteed clean air.

So with that, I thank you.

CHAIR NICHOLS: Than you.

MR. TANG: Good afternoon, Chair Nichols and members of the Board. My name is Mark Tang and I'm a manager at the Bay Area Air Quality Management District. And I'm here to express the Air District's support of the proposed Advanced Clean Trucks Regulation and to provide additional suggestions on how we believe it may be strengthened. We share similar concerns to the South Coast Air Quality Management District. And we do recommend that increasing the 15 percent zero-emission vehicle sales requirements is important for Class 2b, 3, and 7 and 8 tractor groups.

In the Bay Area, diesel particulate matter disproportionately impacts low income and communities of color. This is especially true of communities located along Bay Area highways.

For example, medium- and heavy-duty truck
emissions contribute over 40 percent of diesel particulate matter, impacting our West Oakland AB 617 communities. Therefore, zero-emission truck standards and quicker fleet turnover are a key component to reducing both those emissions and associated health risks. So we believe more aggressive zero-emission vehicle adoption is needed to reduce those localized health risks.

Additionally, the Air District believes that the currently proposed sales requirements will not be sufficient to achieve California's clean air goals. And while technologies and infrastructure may not be available today, zero-emission truck technology and infrastructure is rapidly improving and becoming more readily available.

So we would therefore respectfully request that the sales targets in this rule be periodically reviewed, over time and strengthened to reflect the increasing availability of zero-emission vehicle technologies and infrastructure.

Thank you.

CHAIR NICHOLS: Thank you.

MR. LEWIS: Good afternoon, Board Members. My name is Mike Lewis and I'm the representative of the Construction Industry Air Quality Coalition. It's made up of the largest construction associations in California. Our estimate is that we have about 75,000 trucks that
would be affected by this.

We are not a last mile delivery service, as they talk about and is part of the motivation for this rule. The issues that we have with this proposal are we outlined in a couple of comment letters, but I'd like to highlight a couple of them.

First of all, we don't think there's been enough outreach to the people who going to be required to report under this provision. And I think there's thousands and thousands of businesses who have no idea that they're going to be required to report.

We think the questions are very intrusive. I brought copies of the questionnaire that was handed to us in August. And since that time, more items have been added to it, but I would ask you to take a look at it and decide for yourself whether or not all of this information is necessary and whether it's useful. I'd also suggest that you give a copy of it to the staff and have them fill it out for this building and time how long it takes them, and how much it costs you, and then turn it over to your enforcement people when they're done and ask them whether it's correct and whether or not they're entitled to some fine for not having filled out the information correctly.

I think it's a foregone conclusion that you're going to mandate that everybody go electric, whether
that's an appropriate technology for the various applications that we have, as your staff outlined, for the extent of this fleet.

But I think the problem is is what you say it costs and what it really costs are two different things. And we've already got some pretty crushing requirements in our industry for the off-road and the portable equipment, as well as the trucks that we -- that we operate today.

Part of the problem with this questionnaire is it never asks the question, if you had to do this, how would you do it, how long would it take you, and how much would it cost you? You're going to apparently take all this data and you're going to jump those conclusions yourself. And I don't think that that's the appropriate way to get to the information that you want.

We've suggested, as have others, that you bifurcate this process, that you pull out this reporting requirement and spend a little more time or a lot more time with those who would be required to respond and get it right, and maybe look at other ways to collect this data, other than throwing out a net and seeing what you catch.

CHAIR NICHOLS: So I'm going to ask you, if you're willing, on behalf of your industry, your members to assist in helping to design a questionnaire that will
get us the information that we need, because we
obviously -- I think it's obvious that we need the
information. Maybe you don't think we even need it. But
assuming we're going to proceed some way or another to do
something to promote this kind of transportation that
we're talking about, how can you -- how can you help us do
that the way you think it should be done?

MR. LEWIS: I think we'd be happy to help you do
that. I'm not sure that your staff can define what it is
they need, so they're throwing out a very broad
questionnaire asking for a lot of data. I mean, most of
the businesses in the construction industry, 90 plus
percent of them, are small family-owned businesses. Some
of this data they don't keep. Some of it they're not
going to give you, frankly, because they consider it
proprietary or it has to do with they don't want it to get
in the hands of their competitors.

You have a lot of data available to you from
Caltrans. You share data with Caltrans, which was another
concern about the confidentiality. I mean, the data that
Caltrans doesn't lose, they sell. So what benefit is it
to us to turnover all this information to you and then not
know where it's going to go.

CHAIR NICHOLS: You know, the data has value to
somebody clearly.
MR. LEWIS: But specific -- specific -- let's figure out specifically what you need and why you need it, because I think --

CHAIR NICHOLS: Yeah.

MR. LEWIS: -- I think the sense is is you're going to -- you're going to take all this information and you're going to say, oh, you can afford to do this, if you just ran your business better.

CHAIR NICHOLS: That may be an artifact of, you know, lack of trust here, which I would not -- I would understand, but --

MR. LEWIS: I trust you implicitly.

CHAIR NICHOLS: -- you know, the point is that if we don't have the data, we'll do something that is even worse. So, you know, I think from your perspective, you need to be thinking how you could help us design something that would actually get the information. I think they're pretty clear. Maybe there are too many points of data that people are asking for.

But the basic issue is how do people use their trucks? Where, how, when, how much? Because what's going to happen is we'll adopt a rule and then everybody will be lined up asking for exemptions, or changes, or, you know, different ways of doing it, because we've gotten it wrong, because you didn't really understand how the industry
worked.

And we're not -- you know, we're not your industry, so I'm not defending this proposal particularly. I had the same -- frankly, the same reaction when I first saw it, which is wow, this is a lot. You know, if I -- as a small business, I don't know how I would respond to it either. But, okay, let's figure out how we can get the information then and do it in a better way.

MR. LEWIS: I think we're happy to work with you on that. We have since this process started. And I think we're just a little concerned that much of what we offered up didn't get considered or didn't get included, so...

CHAIR NICHOLS: Thank you. You just happy to be the first one up who made that point, so you got --

MR. LEWIS: Well, I'm sure you're going to hear it again, and again, and again.

CHAIR NICHOLS: You got the opportunity to be asked the questions.

MR. LEWIS: Thank you.

CHAIR NICHOLS: Thank you.

DEPUTY EXECUTIVE OFFICER CLIFF: Chair Nichols?

This is Steve.

CHAIR NICHOLS: Yes.

DEPUTY EXECUTIVE OFFICER CLIFF: Paul Miller is back.
CHAIR NICHOLS: Ah, well.

(Laughter.)

CHAIR NICHOLS: All right. Let's take a brief pause here and then hear from your colleague from NESCAUM. Mr. Miller.

Yes. Sorry. We called this item before you were ready.

MR. MILLER: I'm sorry I wasn't here. This is, for me, quite an entrance. It wasn't planned, but thank you for providing the time --

CHAIR NICHOLS: Well, thanks for coming.

MR. MILLER: -- and I missed my slot.

So. My name is Paul Miller. Apparently, I've been announced already.

(Laughter.)

MR. MILLER: I am the Executive Director with the Northeast States for Coordinated Air Use Management.

And how do I do slides?

Next slide.

--o0o--

CHAIR NICHOLS: You have an assistant working for you.

MR. MILLER: Okay. So NESCAUM is the regional association of state air quality agencies of the eight northeast states, New York, New Jersey, and the six New
England states. Seven of our eight states have adopted the California Low Emission Vehicle Program, including the zero-emission vehicle mandate. We began doing that in the early 1990s. So we've been working closely with California and your efforts for a number of years.

And there's no question that the zero-emission vehicle mandate for light-duty vehicles has been a driver of electrification in our region in the consumer market in our region.

And I'm here today to support our region's strong support for the proposed Advanced Clean Trucks Rule. A strong mandate from California will provide the industry with the certainty it needs to invest in new electric technologies. It will accelerate zero-emission vehicle trucks and buses, not just for California but for us.

And our states are taking significant steps right now to support electrification of the medium- and heavy-duty vehicle sector, providing incentives for investing VW settlement funding into buying electric buses and infrastructure support, as well as electric transit and school buses.

And it's important that we eliminate tailpipe emissions from the sector to meet our climate and air quality goals.

--o0o--
MR. MILLER: So in our region, transportation is about 40 percent -- 42 percent roughly of our overall greenhouse gas emissions. And within the transportation sector, light-duty vehicle is about 54 percent and the medium- and heavy-duty sector about 23 percent. So it's a big segment of our emissions. And that's why we're interested in it, because no single sector, as you know, is going to solve our climate problem.

--o0o--

MR. MILLER: We have made, with the assistance of the California program, a dent in the greenhouse gas emissions from light-duty vehicles over the years. This is a bar chart comparing 1990 to 2015 emissions. What we are seeing on the heavy- and medium-duty side is that emissions are increasing and it's increasing at a faster rate than any other mobile source sector in our region, and we need to get a handle on this.

We project that by 2030 for every two trucks on the road now, we'll have one more truck. So the -- it's only going to increase without addressing the issue.

--o0o--

MR. MILLER: But greenhouse gases aren't our only concern with this sector, mobile sources in general. As I mentioned earlier on, we began adopting the California program and the zero-emission vehicle mandate for air
quality issues. We have a persistent ozone problem. The on-road diesel sector heavy-duty vehicles is the largest source of nitrogen oxides in the northeast region. This is the ozone transport region, which is Northern Virginia up through Maine.

And you can see cross these two years the heavy-duty vehicle diesel sector is our highest sector in 2011 and 2018. And without addressing it, it will continue to be that way.

--o00--

MR. MILLER: And this is our ozone problem. And Los Angeles isn't the only one -- or Southern California, the inland valleys aren't the only one with a high ozone. We have a persistent ozone problem in the northeast. This entire blue shaded area is in violation of the most recent ozone standard, the 2015 standard. And the New York City area just recently got bumped up to a higher classification for the older 2008 standard.

And what's driving that is NOx. This is NOx seen from space. What you can see in the northeast from this image, which is only from September 19th of this year, it's -- a whole lot of NOx along the highway corridors in the northeast. This is what's driving our air quality problem. And it ends the big dot -- well, it doesn't end, but you can see it, kind of like a tadpole. The head is
New York City.

We've been doing field research, field campaigns looking at this ozone problem for the past two years and we know we've got to drive down NOx even more than what we've got on hand to do now.

--o0o--

MR. MILLER: So in reference to electric vehicles, with California as a partner, we signed -- we worked with our states, a number of states, to develop a Governors Memorandum of Understanding on light-duty vehicles. Ten states ultimately have signed on. Created in 2013. This is a multi-state collaborative effort to promote consumer education, outreach, infrastructure development, incentives, working with dealerships and other stakeholders to promote the more rapid introduction of light-duty electric vehicles in our region and across the country.

And with that template, with that experience, we have announced today, once again, with California and a number of other states a similar initiative to also accelerate the more rapid introduction of electric vehicles in the heavy-duty and medium-duty vehicle sector.

The states signing on are California, Connecticut, Maine, Massachusetts, New Jersey, Oregon, Rhode Island, Vermont, as well as the District of
Columbia. And in this partnership, it's a statement of intent, in which we'll be working with these states and other interested states that we expect to join on later to develop a Governors, and a Mayor in that case for D.C., memorandum of understanding to move forward in this particular sector, once again looking at California and its leadership and what you're doing here today.

In this process we expect to have a memorandum of understanding in the next few months and that will lead to the development of an action plan, in which we will work on regional coordination on those similar kind of issues we've been dealing with with light-duty vehicles. And we're going to leverage that experience and pursue this as well.

And so I want to thank you for your leadership in this area and we look forward to continuing our working relationship going forward in this important area.

And I also want to close with the statement, it's a climate issue, but it's also an air quality issue. They both go together.

Thank you.

CHAIR NICHOLS: Thanks. Thanks for making the trip and for all your work to organize your fellow states and the NESCAUM members as well. I think that this will help a lot as we move forward in the discussion about the
market, because where we're going to have to get obviously is to a lot of trucks. So we want to be able to send the message to the manufacturers that if they build them, they will be bought. There will be a place for them to go.

So thanks very much.

MR. MILLER: Thank you.

CHAIR NICHOLS: Okay. Let's get back to our regular order here then. And I'm going to ask people to come down actually in threes. It may help us a little bit here, and to use the two different microphones, because we just are using time just because we -- it takes a little time to move from your chair to the podium. So thank you.

Go ahead.

MR. ASTI: Good afternoon, Chair and Board members. David Asti, Southern California Edison.

I'll be very brief in my comments. The Advanced Clean Truck Rule supports California's critical goals of confronting climate change and improving air quality. SCE supports the ACT rule and stands ready to facilitate the transformation of the transportation sector across all medium- and heavy-duty segments.

We stand ready to help with infrastructure needs and rate designs that support vehicle electrification. SCE is proud to partner with the customers and communities in our service territory to support the transition to
clean transportation. We know there will be challenges ahead from incentive funding to infrastructure, but we view this as a call to action.

The ACT rule is a critical start in the right direction for meaningful momentum in accelerating the transition to zero-emission technologies in the medium- and heavy-duty sector.

Thank you very much.

CHAIR NICHOLS: Thank you. You're on.

MR. BOUWKAMP: It says green light must be on. I don't see a green light.

CHAIR NICHOLS: Don't worry about it. The buzzer will go off or a hook will come down.

MR. BOUWKAMP: Good afternoon, Madam Chair, members of the Board. I'm speaking on behalf of the California Fuel Cell Partnership, a public-private partnership for both government and industry. I have some items to consider in addition to the proposed rule. And those are mostly related to hydrogen fuel cell trucks.

There is currently a lack of dedicated funding for heavy-duty ZEV infrastructure. This will be essential for these vehicles to be operated and to be rolled out. And a lot of effort has to happen in that space. An example is that hydrogen is currently a motor vehicle fuel. Electricity is not yet, but it is in the process of
becoming one.

And there are a significant number of items related to that, such as the sale of the fuel and the measurement of that fuel so consumers get what they are told they would get, and that includes truck -- truck operators that will eventually fuel at truck stops, because it is a public sale -- point of sale.

The next point is that there should be other policies facilitating the rollout of these vehicles, both for infrastructure and vehicles. And the reason I'm saying that is because we do want to incentivize and create certainty for private industry to invest here and not for government to facilitate and fund this whole effort, so eventually it can be a sustainable business solution. Currently, there are insufficient incentives for heavy-duty trucks. This applies both to the trucks and the vehicles. And it's something to consider and to be figured out between the A -- between ARB, California Energy Commission, and the Public Utilities Commission. And this is also to facilitate the rollout and the development of these zero-emission trucks.

One point that I do want to make that often is brought up and most likely will be mentioned again is the renewable content of hydrogen. Our members, as well as those that are participating in the Hydrogen Council, they
have set a goal for 2030 of 100 percent decarbonized hydrogen. That includes renewable hydrogen. And one point for that as well for hydrogen is that hydrogen will facilitate the grids to become more renewable -- to allow more renewable content on it through storage and through using stranded assets in the renewable power generation sector.

Those are all my comments. Thank you for your attention.

CHAIR NICHOLS: Thank you.

MR. HARRIS: All these years, I didn't know this thing went up and down.

(Laughter.)

CHAIR NICHOLS: Hi.

MR. HARRIS: Madam Chair and the Board, thank you for the opportunity to talk today. My name is Frank Harris. I represent the California Municipal Utilities Association. And as the representative from Edison mentioned earlier, California's electric utilities stand behind the State's clean transportation goals.

My members are actively developing programs to promote clean transportation and accelerate electric vehicle adoption. And my members also appreciate the effort to collect information in advance of the rulemaking, as you said earlier, Madam Chair, in the hope
of better informing the final regulation that gets implemented.

Nobody likes another reporting regulation. Some of the information that’s being requested is already being reported in other venues. And we would all like it to just be collected here, so that we don’t have to engage in duplicate reporting. But the initiative to collect more information and better inform the regulation is one that we support.

Where we have concerns is in one element, and that is the request to report information on trucks, fleets over which we have no vision, over which we have no control, that being the trucks that are owned and operated by vendors and other organizations that deliver to our facilities.

It’s interesting. I mean, if you look at the SRIA for any regulation, staff will underestimate the burden. And the regulated community will say it’s going to take a lot more time. But you mentioned oh, my gosh, when you read it, the SRIA indicates that this report can be complied -- complied -- compiled and the regulation can be complied with in four hours.

I don't see how that's possible, particularly when you consider the idea that much of this information we don't already collect. And those vehicles that are
being used by somebody else, we're going to have to go physically observe to be able to answer that.

I'd ask that the Board direct staff to reconsider how to collect that data.

CHAIR NICHOLS: Thank you.

MR. HARRIS: Thank you very much for your time.

CHAIR NICHOLS: Ms. Kanabay.

MS. KANABAY: Chair Nichols and Board members, my name is Kate Kanabay. I'm here today on behalf of Autocar Truck, a small manufacturer of heavy-duty vocational trucks with manufacturing plants in Indiana and Alabama.

On behalf Jim Johnston, President of Autocar, I thank you for the opportunity to speak to you about the ACT regulations and their impact on small business.

Autocar supports the ACT regulation and CARB's efforts to accelerate the development of electric vehicles. Autocar has been a leader in bringing lower emission heavy-duty trucks to market in California.

Today, thousands of Autocar's natural gas trucks are collecting garbage and recycling on California's streets, while running on near-zero engines.

As set forth in our written comments submitted this morning, we are requesting a small change to the regulations with regard to the low-volume exemption. The reason for the change is two-fold. First, it's important
that small businesses have a reasonable sales threshold for becoming subject to the manufacturer's sales requirement.

Second, it is important to incentivize small manufacturers who are in a unique position to drive the vocational market to work to develop electric vocational trucks, while providing an adequate runway for us to invest our limited resources in this development of technology.

We're asking the Board to raise the low-volume threshold from 500 to 1,500 annual sales in California. In our discussions with CARB staff, we learned that the sales data they relied on in setting the threshold was inaccurate. They thought we were coming in below 500. Autocar sells about 3,000 trucks a year. And because we've been ahead of the curve on alternative fuels, we're happy to say that we do average over 500 of those sales in California over the last few years.

But based on the staff report and the reasoning set forth therein Autocar was intended to receive the small business exemption. And in order to fulfill that intention, we need to bump up the sales threshold that will give us the time and the revenue we need to devote the necessary resources to ZEV development.

What happens if we don't get the exemption? We
believe that product lines like refuse trucks, yard tractors, street sweepers, concrete pumpers will remain fueled by diesel and gas. Autocar will be forced to stop selling trucks in California and our competitors will use their credits rather than invest in electrifying these trucks.

We do suggest one other separate reporting requirement for exempt small businesses. Let us share data and progress with you over time to show you how we're utilizing that extra time wisely and we'll work with end users and body companies to provide a viable product.

CHAIR NICHOLS: Thank you. I'm going to ask people to pay attention to the timelines also.

Okay.

MR. GELLER: Good afternoon, Chair Nichols and members of the Board. My name is Michael Geller, Deputy Director for the Manufacturers of Emission Controls Association.

From combustion to electrification, MECA members are focused on delivering all mobility solutions to improve overall emissions footprint of vehicles including battery and fuel cell materials, components for hybrid, as well as all-electric commercial vehicles.

We believe that the targets in this proposal are very aggressive based on experience with the passenger car
ZEV targets. And we are generally supportive of the ACT proposal, but would like to recommend the addition of multiple compliance pathways, which we believe will strengthen the proposal and enhance ZEV penetration.

In those truck sectors with near-term challenges to fully electrify, hybrid electric vehicles can offer significant emission benefits. In addition to the plug-in hybrids that are already in this proposal, MECA recommends CARB allow HEVs in model year 2027 Phase 2 Greenhouse Gas Standard early to be able to earn partial credits that are eligible for a portion of ZEV compliance. China has recently proposed such a parallel technologies pathway approach in its New Energy Vehicle Program.

In the transition to CARB’s goal of a net zero-emission fleet, conventional engines will continue to be built. And if operated on low carbon fuel, these will offer criteria and greenhouse gas reductions. MECA suggests that CARB consider complementary fleet and vehicle sales rules that allow for partial compliance with ZEV mandates via combined vehicle and low carbon fuel approaches, such as ultra low NOx trucks fueled by net zero carbon fuels.

Finally, as the fully electric truck market matures, we support establishing performance standards for these vehicles and components in order to drive continual
improvement and innovation in clean mobility. These can include battery performance standards, such as lifecycle emission reduction goals, range requirements, and short- and long-term deterioration limits.

To conclude, we look forward to working with staff on some of these multiple pathways to help strengthen this rule and ensure that your goals are met in time. It is our belief that parallel technology approaches would not subtract from the proposed ACT, but only expand the pathways toward meeting the State's environmental goals.

CHAIR NICHOLS: Thank you.
MR. GELLER: Thank you.
CHAIR NICHOLS: Okay. Mr. Frank. And will Mr. Pingle, and Ms. Fenton, and Mr. Coates move on down too. Thanks.

DR. FRANK: Good afternoon. Professor Frank. And I retired as a professor at UC Davis some years ago. And I've built the first strong plug-in hybrid electric vehicle, much like just mentioned. The strong means, long range. That means long range electrically. So we could -- we could build vehicles that will get 90 percent -- that will use 90 percent annually electricity and less than ten percent liquid fuel. That liquid fuel, if biofuel, it -- that means you have a zero-emission
vehicle.

So around 2006 I sold the company -- I formed a company Efficient Drivetrains, Inc. And we built trucks of all manners from Class 2 to Class 8, trucks and buses. Our customers were Chinese customers. They were PG&E work trucks and service trucks, school buses and delivery trucks of all manners.

The company was told the Cummins, Inc. just recently. And they have acquired all 45 of my patents belonging to me and EDI.

There are many applications which can be done much better with plug-in electric vehicles, especially in the fleet truck market. Our experience in fleet trucks -- by the way, you don't have zero emissions unless people use these trucks. If you have a fleet of vehicles out there, and it's electric, but it's not plugged in, the customer will -- their drivers will not use it.

So the key is zero-emission miles accumulated on an annual basis.

So I want to say to you --

CHAIR NICHOLS: Your time is up.

DR. FRANK: This is my last sentence here. I want to say to you that I have acquired a lot of experience on these trucks, building them, and having customers -- seeing customers use them.
I would be happy to answer any questions or contribute to this, because I support this idea.

CHAIR NICHOLS: I appreciate your support.

Okay.

DR. FRANK: Thank you.

MR. PINGLE: Hello, all. My name is Ray Pingle and I'm with Sierra Club California. We commend CARB for initiating this critical rulemaking, but believe that the proposed rule needs to be significantly strengthened in two ways.

First, it would only result in four percent of trucks being zero-emission by 2030. This is really only just a drop in the bucket. The rule must be strengthened, so that at least 15 percent of trucks are zero-emission buy 2030.

Second, the rule exempts Class 2b and 3 pickup trucks entirely from any zero-emission requirements until 2027. And yet, these pickup trucks actually represent more than 50 percent of all trucks. The zero-emission requirement for these trucks must begin in 2024. CARB's mission is to reduce health-harming pollution. And finally, we have the cost-effective technology to realize this goal.

A stronger rule, as we proposed, would triple pollution reductions. We have a moral responsibility to
move as quickly as we can to reduce childhood asthma and
save lives, especially in disadvantaged communities.

We have an economic responsibility to move
to a positive
total cost of ownership for many truck applications today.
The proposed rule will result in public health benefits of
$5.5 billion statewide and economic benefits to
California's trucking industry of 4.8 billion through
2040.

These economic savings increase substantially
with a stronger rule. We shouldn't slow down the trucking
industry from being able to realize these savings or
citizens from having healthier lives or lower health care
costs.

The UN is currently meeting in Madrid to try and
save our planet. Scientists now tell us if we don't
reduce our greenhouse gases by at least seven percent a
year for the next ten years, we're likely irretrievably
doomed to catastrophic climate disasters. Each of us owes
it to our children, grandchildren, and future generations
that we will do everything we personally can to leave them
with a livable planet.

One way to keep this commitment is to adopt a
stronger rule.

Thank you very much.

MS. FENTON: Yes. Good afternoon, Madam Chair and Board members.

CHAIR NICHOLS: There you. Yes. Sorry, you have four minutes.

MS. FENTON: Yes. Okay. Thank you.

CHAIR NICHOLS: Um-hmm.

MS. FENTON: My name is Dawn Fenton and I'm with Volvo Group North America. I'm here to say that he Volvo Group believes that electrification of the transportation sector is critical to improving air quality, addressing climate change, and providing a more sustainable and efficient means of goods and people movement.

Through our involvement in the Volvo LIGHTS project, which is funded through California climate investments, we are working with more than a dozen different organizations, partner companies, and agencies to bring 23 battery electric Class 8 trucks into commercial service. And we've committed to have a low-volume market offer of these vehicles before the end of next year.

We have already learned so much through this project, which is providing valuable insight into the challenges and complexity we will all face as we embark on this paradigm shift to electrification of our
transportation sector. Let me be clear, Volvo is committed to bringing battery-electric vehicles to market. And we are aligned with CARB's goals in this regulation.

Our concern is that the Advanced Clean Truck Regulation, as currently drafted, will undermine the realization of these goals and negatively impact California's economic and environmental well-being, as well as our own investments. As a result, we request that the Board direct senior CARB staff to work together with industry and other stakeholders to develop a more focused approach over the coming months to assure that all elements of a successful program are addressed.

Lessons learned from existing commercial pilot projects and these early market segments using ZEV vehicles will build positive experiences and best practices for continued success in subsequent vehicle applications.

We strongly urge that a more holistic approach to financial incentives be developed to minimize obstacles to fleet adoption by consolidating vehicle and infrastructure charging infrastructure incentives into one complete program.

Finally, we support action to wave prohibitions against using incentive funding for regulated purchases in light of the vastly different investment and pay-back
models facing fleets in this new ZEV market.

The Volvo Group has taken a leap of faith by investing hundreds of millions of dollars to bring these zero-emission vehicles to market. We are asking fleets to jump with us. But we both need the supporting winds from CARB to fill our parachutes and create safe landing for all stakeholders.

I'd like to thank the Board for giving me the time today to present our comments.

CHAIR NICHOLS: Thank you.

MS. QUIROZ: Hi. Good afternoon, Board Chair and members. My name is Priscilla Quiroz. And I am here on behalf of the Legislative Task Force of California Chapters of Solid Waste Association of North America, better known as SWANA LTF.

SWANA is an organization of more than 11,000 public and private sector professionals committed to advancing from solid waste management to resource management through their shared emphasis on education, advocacy, and research.

SWANA LTF understands the enormous air quality challenges air districts face in California and the challenging GHG goals developed by CARB that have led to the development and the aggressive transportation and electrification strategy. We support these efforts where
However, SWANA LT F strongly suggests that in many instances a single transportation technology, such as electric-powered EVs rather than a technology-neutral approach, may not be the correct strategy. The solid waste and recycling industry in California is an example where our industry has invested over one billion to develop the use of low carbon renewable gas -- natural gas in the reuse -- refuse and recycling vehicles we use.

Now, our industry is working to make your shit[SIC] -- short-lived climate strategies of organic diversion from stand -- landfills a reality, through the use of ultra low near-zero NOx trucks powered by renewable gas -- biogas generated from the digestion of organics.

However, strategies such as what you see what is before you today counter our efforts. We believe the ACT should recognize the importance of these ultra low NOx technologies through of the use of concepts such as credits to manufacturers of low -- ultra low NOx truck production at least in the short term.

We conclude by asking the Board to broaden the Advanced Truck Regulations to not only encourage electric vehicles, but near-zero ultra low NOx technologies. This builds on the one billion investment our industry has already made in renewable natural gas and is the
cornerstone in helping local air districts meet their challenging attainment deadlines in the critical goals of CARB's short-lived climate strategies.

Thank you.

CHAIR NICHOLS: Thank you.

MS. MITROSKY: Good afternoon. Micah Mitrosky, IBEW Local Union 569 speaking on behalf of over 3,300 electrical workers throughout San Diego and Imperial counties. We stand united with our environmental, community, environmental justice, public health partners, and fellow labor unions urging CARB to strengthen the proposed rule.

The draft proposal falls far short on both what is possible and needed. And we urge CARB to strengthen the proposal by increasing the overall mandates to ensure that by 2030 no less than 15 percent of the medium- and heavy-duty trucks on the road are zero emitting, including Class 2b pickup trucks in the mandates beginning 2024, outlining CARB's longer term objectives for achieving 100 percent zero-emission trucks in various categories and explaining how this phase of the rule is consistent with those objectives in attaining federal and State air quality and greenhouse gas objectives and committing to adopt corresponding fleet purchase requirements in 2021.

In 2011, California passed the 33 percent by 2020
renewable portfolio standard, one of the most ambitious of its time. Today, less than ten years later, not only have the state's clean energy requirements been vastly expanded to 100 percent renewable and carbon-free energy by 2020 -- 2045, but as PV magazine reported in April of this year, for a moment, California was running on 93 percent clean electricity.

This historic renewable energy build-out created millions of hours of union construction work and dramatically decreased technology costs through economies of scale. The same transformative change is possible for transportation, and, in fact, must happen if we are to avert the worst effects of a climate disaster and clean our air.

Electrifying trucks also has -- we urge you to strengthen this rule.

Thank you.

(Laughter.)

CHAIR NICHOLS: Good work. Good work.

Go ahead. I guess they don't flip the sign -- the light on

MS. KROPKE: Hi. Good morning.

They don't have the green light on. Is it -- is it official? Shall I start?

Yes. Okay. Thank you.
CHAIR NICHOLS: Great.

MR. KROPKE: Good morning, Madam Chair -- good afternoon Madam Chair and council members.

CARB's leadership is critical for our businesses, for our job creation, and also for our health. As you know California is one of the largest economies in the world, a state that is a head of many nations, in fact. A stronger rule will create economies of scale for businesses in and related to zero-emission technologies.

By strengthening this rule to 15 percent by 2030, we expand the universe of electrification, which is critical for infrastructural planning purposes.

I am Jennifer Kropke. I am here on behalf of the 12,000 electric workers in Los Angeles County of IBEW, as well as the over 250 electrical contractors. Electrical contractors, I might add, who drive medium-duty trucks to haul all their equipment around in and are so excited for this rule, not only to drive those trucks, but also for the infrastructural planning purposes.

As well, there's an additional workforce development aspect to this that we haven't discussed, but we just touched on. A stronger rule will create apprenticeship-based electrical green job careers to those living and working in our state's worst air quality regions.
So I just want to get this straight. With a minimum 15 percent zero-emission trucks by 2030, you can provide green jobs that pay family-sustaining ages to those living in the worst impacted regions. Gosh, guys. It's very win-win.

We hope you'll strengthen this rule to 15 percent by 2030 and thank you to staff for their considerable time and commitment to such an important issue.

MR. YOW: Thank you and good afternoon, Chair Nichols, Board members, staff. And we'll echo the thanks to your staff as well for all the hard work on this issue. David Yow on behalf of the Port of San Diego.

The Port of San Diego supports the State's vision to reduce emissions of criteria pollutants and greenhouse gas emissions from mobile sources. In the early 2000s, we established a Clean Air Plan to reduce emissions from our maritime sector. And we're one of the first ports in the nation to adopt a Climate Action Plan committing to reduce GHGs. And just like the state, we have seen emissions decrease.

Mobile sources though are one of the largest sources of emissions in our inventory and we do need regulatory help to help achieve even further emission reductions. Port tenants and operators down in San Diego have been on the cutting edge of ZEV demonstrations in the
heavy-duty sector. We have electric drayage trucks and
electric cargo handling equipment operating along the
working waterfront today.

And these demonstrations have been possible
through grant funding - thank you - and been critical to
increase customer confidence that these technologies can
do the job that traditional diesel-powered vehicles can
do.

Just in the interests of time, five quick
suggestions as you move forward. One, looks to the State
agency alignment. The need for consistency across
agencies regarding implementation and funding. Down in
San Diego, a quick example, SDG&E, San Diego Gas and
Electric, that's our utility, is creating a rate for
medium- and heavy-duty vehicles. And time will tell if
that's appropriate and cost competitive.

But we need to ensure that rates and demand
charges help ensure that these technologies are cost
competitive and can help them be adapted quicker.

Two, funding. Resources are necessary. You have
already done a tremendous job, the CEC as well, with
advancing this industry in our state. But we know that
manufacturers are still figuring out how to lower costs
and make things more efficient. So that -- that is a
reason for continued pilots and demonstrations.
And on -- thank you very much.

(Laughter.)

VICE CHAIR BERG: Thank you very much. We do have your written testimony, so we appreciate that.

MR. GRANHOLM: Good afternoon. My name is Ben Granholm with the Western Propane Gas Association. First off, thank you for the opportunity to comment today. WPGA would like to align ourselves with the comments submitted by a coalition of organizations working to clean California's air and help the state meet its greenhouse gas emission goals by working to address heavy-duty truck carbon emissions by including both zero and low NOx truck strategies in the proposed Advanced Clean Trucks Rule.

WPGA, along with many others, are strong supporters of clean energy and believe that low NOx heavy-duty trucks using renewable fuels will be a vital piece to reducing greenhouse gas emissions in the transportation sector, especially over the near term, where heavy-duty zero-emission vehicles remain largely unavailable.

When looking towards the future, the propane industry is investing heavily in renewable propane, which is derived from sustainable sources such as beef tallow or vegetable oil. The carbon intensity for renewable propane is on par with that of electric, and including medium- and
heavy-duty low NOx trucks in the ACT regulation can play an important role by sending a signal to the market of the importance of the in-state production of renewable propane and the continued production of low NOx engines to help reduce greenhouse gas emissions for decades to come.

The use of renewable propane, for example, in near-zero propane trucks significantly reduces carbon emissions and NOx emissions that remain to be an important focus in many areas across California today.

And with that, I would just like to thank you for all of your work in this area, and we look forward to working with you in the future.

Thank you.

VICE CHAIR BERG: Thank you very much.

MS. WILLIAMS: Good afternoon. I'm Joy Williams from Environmental Health Coalition. On behalf of our members, board, and staff, I urge your support of an Advanced Clean Truck Rule that includes the following essential elements:

One, increases the overall mandates to ensure at least 15 percent of medium- and heavy-duty trucks on the road are zero-emission by 2030; includes Class 2b pickup trucks beginning in 2024; three, establishes goals and objectives for achieving 100 percent zero emissions; and four, commits to adopt corresponding fleet purchase
requirements in 2021.

Like many of the groups and individuals here today, EHC works in EJ communities that rank high on CalEnviroScreen, and suffer the health and safety impacts of disproportionate truck traffic. We're already doing everything we can locally to reduce truck impacts. Working with the City of San Diego, the San Diego APCD, and the Port of San Diego, we're working with the city to establish and enforce truck routes.

We're working with the Port to educate truck drivers on the new routes. We're working through AB 617 to incentivize cleaner trucks in our communities, and we're pursuing an effort of three decades to reform the land-use plans in these communities to better separate industrial from residential land uses.

However, local efforts cannot compel a faster industry-wide shift to electric trucks and away from fossil fuels. We do need action at the State level to require zero-emission trucks in California at the earliest possible date.

And so, to close, we ask that you support the Advanced Clean Truck Rule with the higher targets, goals, and mandates for the Class 2b pickups in 2024, and that you move ahead with fleet purchase requirements in 2021.

Thank you.
MR. PORTILLO: Thank you to the Board and staff for all your hard work on this proposal and thank you for allowing me to provide testimony today.

I'm Patricio Portillo with the Natural Resource Defense Council. ATC's goal is to ensure California can meet its State and federally mandated air quality requirements, and cut climate pollution by ensuring a sufficient number of zero-emission trucks are deployed. It's a critical rule, because it addresses the lack of supply.

But the current proposal will not deliver enough zero-emission trucks to meet our targets. The Board should direct staff to increase stringency by raising the sales requirement across all classes -- include all classes beginning in 2024, set a goal for 100 percent zero-emission trucks, and expedite the timeline for the fleet rule.

The Board can justify a stronger rule based on strong initial demand for electric trucks. Studies showing most truck classes are economic today on a total cost of ownership basis supported by State incentives, and the fact that California utilities are making the largest investments globally in medium- and heavy-duty charging infrastructure.

Demand for zero-emission trucks is here today.
Companies are already committed to purchasing electric trucks. And there are hundreds of thousands of zero-emission trucks on pre-order amounting to tens of billions of dollars.

Why are companies shelling out money just to wait in line?

Yesterday, ICF International released a major report finding that the total cost of ownership for most electric truck classes are competitive with diesel today with California's supporting ecosystem. And all will be competitive by 2030 without subsidies. We have provided the Board with a summary for policymakers of the ICF report.

Just today, we heard about a new agreement to work towards truck electrification between California and seven other states, and hopefully more will join. The rest of the country and the world look to ARB to craft policies that slash emissions from transportation, while boosting economic growth.

ARB's policies should set goals for the market based on where it needs to be and not the minimum floor. These are the bold actions ARB must take to protect public health, the climate, and our future.

Thank you.

VICE CHAIR BERG: Thank you.
MR. MANDEL: Good afternoon.

VICE CHAIR BERG: Good afternoon.

MR. MANDEL: I'm Jed Mandel, President of the Truck and Engine Manufacturers Association. All EMA members are investing in developing and marketing zero-emission powertrains and commercial vehicles. As such, we support CARB's efforts to assure the market acceptance of ZEV products.

I do need to note, however, that we have significant and legitimate concerns with the design of the propose ZEV mandate, but not its overall goals. Properly designed, the proposed ZEV volume targets and implementation schedule should be achievable. And we are committed to working with the Board and staff to assure that result.

We have a simple request today, direct the staff to work with us and other interested stakeholders through the 15-day notice process to identify those specific segments of the heavy-duty ind -- heavy-duty market that are more readily amenable to electrification, and that with 100 percent mandates we'll achieve or even overachieve the volumes and time frames that the staff is proposing.

EMA's members have invested billions in developing ZEV technologies for the heavy-duty market. We
support efforts to develop and expand the market for heavy-duty ZEVs. But designing a program based on a naked sales mandate is fundamentally flawed. Trucks are not cars. Our customers invest capital to purchase vehicles that must return a profit. We all know that today ZEVs are more expensive than traditionally fueled vehicles, that an extensive -- that an extensive and costly infrastructure is needed, and that without incentives to offset those differentials, customers either will keep their old products longer or, given the choice, which the proposed rule allows, will buy new diesel-fueled vehicles.

We want the ACT rule to be a success. We want and need the rollout of ZEV technologies to be successful. Our members need to know that they will be able to recoup their investments in developing ZEV technologies.

We believe there is an answer. We believe that the ACT rule should be focused on mandating the use of ZEV technologies in prioritized, specific segments that are more readily suited to that technology -- let me be specific -- even earlier than the staff is proposing. We think that new school buses and municipal fleet step vans could be 100 percent ZEVs in 2023.

That in 2024, a hundred percent of new public utility vehicles and yard tractors can be ZEVs. That in 2025, 100 percent of the new step vans, airport service
vehicles, and non-airport shuttle buses can be ZEVs. And that in 2026, 100 percent of refuse trucks can be ZEVs.

By our estimate, that would result in both earlier introduction and greater number of ZEVs than the current proposal. It also would assure of having a high positive impact on disadvantaged communities.

We also believe that the population of trucks and the implementation dates targeted by the innovation -- Innovative Clean Truck -- Transit Rule, the city buses, and by the zero-emission airport shuttle bus rule can be accelerated. We're actually willing to pull that ahead.

The approach that we are outlining will create significant beachheads for ZEV vehicles in California, earlier and in greater volumes than the approach set forth in the proposed ACT rule. We believe it will create momentum for successfully expanding the acceptance and rollout of ZEV technologies in even greater numbers.

It also will allow interested stakeholders to work together to identify those specific markets in greatest need of incentives and infrastructure development, and therefore to seek the needed funding assistance from the Legislature and other sources in a more targeted fashion.

We are committed to working with staff to identify the further expansion of the ACT rule beyond the
time period that I've outlined. We urge the Board to
direct the staff to proceed with a 15-day notice to
implement the approach we've outlined and to work with us
and other stakeholders to expand the approach beyond the
timeline we've identified.

Thank you very much.

VICE CHAIR BERG: We have one question for you,
but thank you.

BOARD MEMBER TAKVORIAN: Thank you for your
testimony. That sounded like all good news.

MR. MANDEL: It is all good news.

BOARD MEMBER TAKVORIAN: So I'm waiting for the
other shoe to drop about -- so if all those sectors are
ready to go earlier, then what -- what are your
projections? Because you seem to be quite precise about
when you feel like these sectors can come forward, which
is great.

So where -- what do you think the other -- when
do you think the other sectors will be available? Are you
saying that they are further out than staff is projecting
at this point or what -- what are your thoughts about
that?

MR. MANDEL: Our thought is to make this rule as
successful as possible to develop the acceptance in the
marketplace of the technologies that my members have
invested billions in developing. We think with the early introduction and rollout in targeted sectors, we can focus the funding, focus the infrastructure development, and that are most amenable from their operating characteristics to being able to operate on ZEVs will seed the market and will allow us to better focus our efforts to further expand that market beyond 2026.

We're prepared, by the way, to meet immediately with the staff to identify that. We're not saying don't do anything beyond 2026. We were just not prepared today to come forward with greater specifics, but there are more vehicles out there. You heard us already say that rules that you already adopted a year ago on transit buses and airport shuttle buses that have dates that go out, I think, to 2035 if not beyond can be pulled ahead. We want to count those as earlier pull-aheads.

And by the way, we purposely said 2023 for the initial category, because we're sensitive to the South Coast needs in 2023. Otherwise, this rule doesn't really help them for what we heard in the previous agenda item. So there's more that can be done. We don't think it's appropriate for us to unilaterally say this is exactly the rollout beyond that, because it gets more and more challenging beyond these particular segments that I identified initially.
BOARD MEMBER TAKVORIAN: So that's these very helpful. And I guess I'm drawing, but I'll ask you the question.

MR. MANDEL: Sure.

BOARD MEMBER TAKVORIAN: It sounds like, as a result of the adoption of the previous rules, like the Advanced Clean Transit Rule, that that has helped your industry to move forward faster than we even anticipated?

MR. MANDEL: Absolutely. Knowing where the market is for our products helps us. Obviously, there are certain applications that just are not amenable. Driving a truck across country and having it be electrified is a challenge, just because of the infrastructure.

There are other markets like transit buses, like airport shuttle vehicles that are much more amenable. If -- you can help us and we can work with your staff to target those markets. It allows us to focus the investment and allows others to focus the investment.

The concern we have with the design of the existing rule is by just having a blanket percentage, when people can buy less expensive traditionally-fueled vehicles, our customers who need to return a profit will buy those less expensive vehicles, and it creates great uncertainty that won't allow us to target those investments and make this rule a success.
We can't afford to have hiccups in the rollout of electric or hydrogen-fueled vehicles. We want this rule to be successful. We need to recoup those investments. And as we have heard, you, the South Coast, San Joaquin, we all need this rule to be successful.

BOARD MEMBER TAKVORIAN: Thank you so much.
MR. MANDEL: Thank you.
MR. GRAHAM: Thank you, Board members. My name is Bob Graham. I'm speaking in front of you today on behalf of a newly formed coalition of over 20 electric transportation champions with many years of experience, which we are calling the Strong Plug-In Hybrid Vehicle Coalition.

If my senior memory serves me right, the last time I spoke to the CARB Board was in 2001 when I championed plug-in hybrid vehicle technology as a precursor to the light-duty battery electrics. Also, in 2001, I was probably the only person in Washington D.C. on 9/11 arguing that we should be putting lithium ion batteries in electric vehicles, that the technology was ready.

I concluded my career at the DOE as director of EV Everywhere, which was President Obama's signature EV program. My purpose today is two-fold. One, to thank you for your continuing support of light-duty, plug-in
hybrids, especially those with 35 miles of all-electric range. We need more of these stronger PHEVs.

I refer you to CARB's study by UC Davis, which shows the last version of the Chevy Volt achieved 68 percent of annual miles from electricity in real-world driving and equaled approximately 80 of the CO2 reductions achieved by Tesla Model S.

This UC Davis study also found that a large proportion of annual miles were in urban stop-and-go traffic. And that's extremely important when we listen to what we just heard about the vehicles that every day run around airports and deliver products in our communities. This implied that plug-in hybrid vehicle -- plug-in hybrid trucks with large battery packs can similarly electrify those urban stop-and-go miles.

Second, the prime message for today is that our coalition supports the ACT Regulation, especially the progressive sliding scale where a PHEV can earn between 10 and 75 percent of the credit of a battery electric truck.

The Strong PHEV Coalition believes that regulations and incentives, in general, have done -- not done enough to encourage long-range plug-in hybrid cars and trucks that can achieve 90 percent or more annual miles using electricity.

We suggested in our written testimony that you
should consider working with these vehicles that are manufactured vehicles as we just heard and provide real-world actually data to make a difference.

And finally, when we think about fires, there's nothing better than a plug-in hybrid with a large battery that can help export power to those in need.

Thank you.

VICE CHAIR BERG: Thank you.

MR. CAMPBELL: Good afternoon --

VICE CHAIR BERG: Good afternoon.

MR. CAMPBELL: -- Madam Chair, members of the Board. Todd Campbell representing Clean Energy.

I'm here today to say that bold vision for the ACT Rule is necessary. No, it's paramount. In the South Coast and the San Joaquin, every diesel purchased today is a lost opportunity for air quality.

Just last month, ICCT released a study that confirms that CARB staff -- or a fact that CARB staff has known for a very long time, that our 2010 heavy-duty truck standards are being violated. Specifically, diesel are five times higher than their 2010 certification for NOx emissions, nearly a decade after the standard was adopted.

The 2023 federal attainment deadline is nearly upon us and the failure to meet ozone standards will trigger a federal implementation plan that removes local
control, sanctions that include potential loss of DOT funds. By the way, we receive about $19 billion, the largest share in the union, of those fund, and other penalties and restrictions that will impact regional economies.

Clean Energy would like to support this rule, but ask that you include South Coast Air Quality Management District's definition for near-zero, which includes the strictest optional low NOx standards for Class 7 and Class 8 trucks.

It is important to note that ARB staff will not propose this standard manda -- to be mandatory until 2027, eight years from now. Incorporating ultra low NOx trucks into staff's proposed near zero standards means more choice and flexibility for fleet operators, a stronger case that California did everything it could to address the number one source of pollution impacting communities, three, greater certainty to meet ARB's main objective cleaning the air, and four, great confidence to be bolder than staff's Class 7 and Class 8 recommendations today, leading up to the 2030 -- leading up to be -- 2030 to be strengthened.

So we agree with the South Coast's request to have your staff work with them under the 15-day period to further strengthen this rule. Short of that, please
expand your near-zero definition to include the most stringent low NOx standard up until 2027.

Thank you, Madam Chair.

VICE CHAIR BERG: Thank you.

Leah.

MS. SILVERTHORN: Good afternoon, Madam Vice Chair and members. Leah Silverthorn with the California Chamber of Commerce. CalChamber represents the interests of 14,000 businesses both large and small. We, along with a coalition of over 50 organizations, are concerned about the extension of this regulation from a few entities to now directly regulating over 11,000 California businesses.

While we strongly believe that good data makes for good rulemaking, we have both short-term concerns with the reporting requirement and long-term concerns with the end goal of this rule, that is how an end-user purchase will be implemented, given the ambitiousness of the all-electric mandate.

As the end users of these vehicles and those who will ultimately bear those costs, we can state with certainty that this proposal is already on a very, very Ambitious implementation timeline that will have a large financial impact to end users and customers.

With respect to the reporting portion of the rule, it could and should be its own separate rulemaking.
And our request is to -- to the Board is to ask staff to bifurcate this rule and hold a series of workshops to create a workable streamlined data gathering process. At minimum, the current draft has many issues that must be addressed. To that end, we do appreciate staff's commitment and recommendations to narrow the dates upon which businesses will be required to count vehicles, clarify how businesses will choose representative weeks and facilities, and to work to revise unclear definitions.

We also recommend, in order to ensure useful and meaningful data, specifically outlining the likely paths of the Fleet Rule prior to finalizing the data request rule, identifying the specific data gaps to be filled by the rule, narrowing the scope of the data requests to those issues relevant to the subsequent end-user rule - we are more than willing to work with staff to ensure the data collection rules result in high response rates - solicit useful and useable data necessary to create a future rule, considers the availability of infrastructure and does not put an undue burden on entities, many of which have never been regulated by CARB prior to this rule and are not direct sources of GHG emissions.

We request that staff's data evaluation and strategy for implementation of this and future EV rules consider how previously incentivized adoption of...
alternative fuel vehicles have been implemented.

VICE CHAIR BERG: Thank you.

MS. SILVERTHORN: Thank you to both the staff and
the Board for their time spent with us on this issue

VICE CHAIR BERG: Thank you very much.

Good afternoon.

MR. CONOVER: Chair Berg and members, Gary
Conover representing the California Automotive Wholesalers
Association. We're your mom and pop auto parts store,
including the larger membership of Napa, O'Reilly,
AutoZone, et cetera.

We're signatories to the Chamber's newsletter, so
I'm not going to go into depth about what that says,
except to support the bifurcation of the LER from the
manufacturing regulations, and just note that a $37,500
violation notice is very significant to our members.
That, in and itself, should drive CARB to offer up
workshops to our membership. It's obviously a significant
step to collect the data in lieu of the violation.

Thank you.

VICE CHAIR BERG: Thank you.

MR. DUNHAM: Good afternoon and thank you very
much. I'm Ken Dunham. I'm the Executive Director of the
West Coast Lumber Building Material Association. We
represent the independent lumber dealers in the State of
California and some throughout the west here. We agree with the comments that have been collected and circulated by the coalition and coordinated by the California Chamber of Commerce.

I just want to remind you of the practical aspect of a business or an industry that will be affected greatly by this. The lumber industry uses a variety of trucks of all types, of all shapes, of all different capacities. Even your own report reflects the fact that there's challenge for electrical vehicles with large payloads.

We're concerned about the cost, the technical availability, and the feasibility at times in some of this. Just simply here to remind you that we're one of the end recipients of rules like this. And we urge that you consult with the people who will be affected by it and come up with something that is feasible and workable for everybody.

Thank you very much.

VICE CHAIR BERG: Thank you very much.

MR. CHUCK WHITE: Good afternoon, Board Chair and members. My name is Chuck white. I work with Manatt, Phelps & Phillips here in Sacramento. I'm here representing the Western Independent Refiners Association. As a trade association, representing small and independent refineries in the West Coast, WIRA has been an active
participant in CARB rulemakings for many years. And the
Board, this Board, has consistently acknowledged that
small and independent refiners are an important
pro-competitive force in the market for refined
transportation fuels and product.

WIRA recognizes and supports the efforts of CARB
to reduce greenhouse gas and criteria pollution from
transportation vehicles. WIRA remembers are positioning
themselves to increasingly rely on biogenic, low carbon
sources of fuel feedstocks to produce fuels and other
source.

However, we're extremely concerned that the
proposed ACT rule is heading in a California direction to
focus on limited fuel types, electric and hydrogen, for
all vehicles. While CARB has historically been fuel
neutral with respect to looking at GHG emissions through
the Low Carbon Fuel Standard, the ACT with its focus on
only limited fuel types would be a substantial departure
from past CARB policy we believe.

There are -- while there are many opportunities
to reduce greenhouse gas emissions, some of the lowest
greenhouse gas emissions are not from the electricity
sector or hydrogen sector. They're from other sources of
biogenic soil -- fuels, which we would like to be --
remain a possible fuel source going into the -- at least
the near-term future.

We expect a downward trend in all carbon intensity of all fuel types, including electricity and other types of fuels. Until such time as CARB and the manufacturers are able to collaboratively show that goals are achievable at some reasonable point in time, we urge CARB not to shut the door on continued advances in other transportation fuel types.

We know how to support California's transportation fuel needs with substantially reduced emissions. We're not sure that the same level of ability to support that has been demonstrated for zero -- electric heavy-duty vehicles.

So I would -- we're not opposed to the expansion of ZEVs. We would just like to make sure that there's recognition of other fuel types going forward at least for the foreseeable future, until such time as we can really demonstrate zero-emission vehicles can take a significant place in a realistic marketplace.

Thank you.

VICE CHAIR BERG: Thank you very much.

Good afternoon, Erin.

MS. GUERRERO: Good afternoon. Erin Guerrero on behalf of the California Attractions and Parks Association, representing amusement, theme, and water
parks throughout the state.

Very briefly, we echo the comments that have been made by the chamber and just wanted to highlight a couple of points. The current draft we find definitely lacks stakeholder input. We were brought into this -- as businesses that would be part of the large entity reporting, we were brought into the process quite late, so we are hopeful that future drafts will include stipulations that will help in our concerns.

Especially considering the very high -- hefty penalties at stake, we find the regs to be too broad, too vague, and they don't provide enough guidance for compliance. Additionally, staff has grossly underestimated the time and cost that it will take for us to provide the reports.

California's parks are in the business of providing fun and entertainment. Trucking is not a main component of their business model. They lack the infrastructure and the programs that will be required in order to collect and crunch the data that ARB is seeking, especially given the extremely aggressive timelines in the regs. Basically, they're going to have to start collecting this information beginning January 1 under the current draft.

So we appreciate the changes that have been
recommended by staff and we urge you to continue working
with us to ensure that we can comply and provide you with
the data that will actually be useful in your efforts.

    Thank you.

VICE CHAIR BERG: Thank you.

Hi, Steve.

MR. McCARTHY: Good afternoon, Madam Vice Chair
and Board members. I'm Steve McCarthy with the California
Retailers Association. We, too, are part of the coalition
with CalChamber and others requesting that the large
entity reporting requirement be bifurcated from the
manufacturer rule and be studied in a separate process.

    Our retailers are supportive of the underlying
goals to reduce GHG emissions and improve air quality. We
have a number of concerns, however, with the reporting
requirement and would like to have more time to review the
proposed requirements to ensure that definitions are clear
and that expectations are well understood, particularly
with respect to how businesses are to recruit and report
substantial amounts of information we do not currently
have or track.

    For retailers, these reporting requirements do
not occur in a vacuum. We have many reporting
requirements and data demands coming at us at once,
including a packaging initiative for which we are working
with the administration and CalRecycle, as well as a new privacy law coming along very soon, along with its associated regulations. So it is important to us that we get these things right.

So we ask you help in -- your help in separating this requirement for further review.

Thank you.

VICE CHAIR BERG: Thank you.

Jennifer.

MS. HELFRICH: Good afternoon. My name is Jennifer Helfrich. I'm a Senior Manager for California Policy at Ceres. I'm here today representing the BICEP network, a coalition of 55 major corporations committed to advocating for strong climate policy.

I am also here to speak on behalf of the signatories of two letters, which I hope you have in front of you or will soon. One from major companies and the California Health Care Climate Alliance representing 119 hospitals in the state, and one from investors with over 237 billion in assets under management, both supporting a stronger ACT Rule.

Many of the companies' investors that we work with see transitioning to electric trucks as an economic opportunity. We strongly support stepping up the ambition of the ACT Rule, so that it results in 15 percent of
trucks on the road being zero-emission by 2030. The ACT Rule will accelerate the electric truck deployment necessary to meet the needs of businesses. The rule will be essential for addressing some of the primary challenges highlighted by major companies with an interest in fleet electrification.

First, lack of EV model availability and high upfront cost, especially for medium and heavy-duty trucks. This rule would push manufacturers to increase model availability and encourage economies of scale that could bring down costs, as well as increase innovation in the technology.

Moreover, cities across the world are introducing low and zero-emission zones, a trend that is likely to spread to the United States. For companies who operate trucks in city centers, the availability of diverse zero-emission models is crucial for the viability of their business.

Second, lack of control over leased or upstream/downstream transportation. For our companies, reducing both the emissions and the cost of transportation is an economic imperative. Yet, they often have limited ability to choose or encourage electrification within their value chain.

A stronger ACT will help transform the market in
a way that our companies cannot accomplish on their own.

For the signatories of the investor letter --

I'll read the last sentence quickly.

VICE CHAIR BERG: We do have your letter, so we will be able to read it.

MS. HELFRICH: Yeah. All right.

VICE CHAIR BERG: And we realize two minutes goes by really, really fast --

MS. HELFRICH: It does.

VICE CHAIR BERG: -- but we're on speaker 31.

We've got to go 103.

MS. HELFRICH: Thank you very much.

VICE CHAIR BERG: Thank you.

MR. KOTLIER: Good afternoon, Chair Nichols and Board. I'm Bernie Kotlier representing IBEW and NECA of the electrical contracting industry and a member of the coalition, led by the Sierra Club, supporting a stronger rule, and a big fan of the Air Resources Board and staff.

There have been many comments about the cost, difficulty, pace, and challenge of the transition to electric trucks. While these concerns are critical to the decision-making process, the question is what will it cost if we do not implement a much stronger rule?

Bay Area taxpayers are beginning to pay $500 million for Measure AA. SFO's new seawall will cost 587
The 2018 wildfire season was the deadliest and most destructive ever. According to NOAA climate.gov, it cost approximately $24 billion.

In addition annually, we could soon pay 200 million more for air conditioning, three billion from the effects of a long drought, and 18 billion a year to replace buildings inundated by rising seas. Killer heat waves could add more than 11,000 heat-related deaths per year by 2050 and cost tens of billions of dollars.

UCLA scientists predict a major increase in the likelihood of a massive -- of massive severe floods and forecast at least one near trillion dollar disaster in decades to come.

UN Secretary General Guterres says the world's efforts to stop climate change have been utterly inadequate and warns that the point of no return is no longer over the horizon. We may have 12 years to limit climate catastrophe.

He further noted that the world has the science and technology to limit global warming, but what is lacking is political will. A stronger truck will -- rule will require sacrifices. But please keep in mind the much greater economic health, safety, and environmental sacrifices we will all face if we fail to move aggressively.
The Air Resources Board has had the foresight, the courage, and the political will to lead. We need your leadership again now on much stronger Clean Truck Rule, even stronger than what the coalition has proposed.

Thank you.

VICE CHAIR BERG: Thank you.

MS. WHITTICK: Hi. Good afternoon, Vice Chair Berg, members of the Board. I'm Janet Whittick here on behalf of the California Council for Environmental and Economic Balance, CCEEB.

So, first, I wanted to say thank you for the discussion with Mr. Lewis that kind of started us off. It's going to save me a lot of time. Yes, we at CCEEB would be happy to work with you on a better survey, particularly in regards to scope and data period.

Right now, as we interpret the rule, there's at least two major sections that require collection of data on all facilities and vehicles for all of 2020. And yet, the rule won't be adopted until maybe spring of this year. So right now, people don't know what they need to start tracking possibly as soon as January 1st.

And now I have to be honest, I'm not quite sure what softening reporting requirements means from the staff slides. I think I like it. I think I'm excited about it. But right now, it creates a little bit more uncertainty,
so we do welcome those further conversations with staff.

Second, others have already talked about the notification issues, especially around commercial and institutional entities, but now need to report. And we agree with those concerns. But I wanted to flag for you that this issue extends beyond the ACT Rule in front of you today. And I think more and more as CARB tries to reach out to those commercial, industrial, indirect sources that more can be done to create a network or distribution list that really tried to get you, so that you can engage with those folks that you want to regulate and it's not just us who you see all the time here before you.

And I think this will be important not just for rule and policy development, but also for compliance and enforcement later on.

So thank you so much. CCEEB members really and truly want to comply with this reg and we look forward to working with staff on creating something that's feasible.

Thanks.

VICE CHAIR BERG: Thank you.

MS. HERNANDEZ: Good afternoon Madam Chairwoman and Board members. My name is Consuelo Hernandez, Director of Governmental Affairs for the City of Sacramento.
The city is committed to advancing transformational zero-emission vehicle programs and technology. Our city council and mayor have adopted aggressive goals to establish Sacramento as the zero-emission vehicle capital of California and to lead by example hand-in-hand with our efforts to increase active transportation and transit ridership, and reduce the number of cars owned and driven on our streets. These efforts are critical to us meeting our climate goals.

We thank ARB staff, who were very responsive and met with us and invited our feedback. Based on their clarifications, we believe that one-time reporting required of public agencies is appropriate and feasible and can play an important role in forming future programs of the ARB. We encourage additional outreach to other local agencies like ours and are happy to provide recommendations to make sure that everyone is aware of the regulation.

We also recognize the importance of this regulation in advancing the heavy-duty zero-emission vehicle market. We welcome this expanded market and applaud the ARB's leadership. We look forward to a greater array of zero-emission vehicle options that can meet all of our varied operational needs.

Thank you very much.
MR. SAADAT: Thank you members of the Board, and thank you staff for this really thorough record. I believe it shows that none of the barriers identified by the industry is really that reasonable.

The ISOR shows that a much higher volume of zero-emission truck sales are highly suitable to electrification, will be more cost effective, and are supported by existing and increasing investments in infrastructure.

And lack of demand is also not the barrier, since commitments through the Clean Air Action Plans from the Ports of L.A. and Long Beach, and from the AB 617 plan, which creates similar commitments at the Port of Oakland, both of which, by the way, staff has stated as primary objectives of the rule. Those require roughly 24,000 zero-emission drayage trucks. Staff's proposal falls hopelessly short of that, reaching just one-sixth of that need with 3,800 tractors cumulatively.

Any honest assessment of staff's proposals shows it is inadequate to meet the ports' commitments, and in the bigger picture to meet our health-based air targets or carbon neutrality goals.

Under their proposal, 96 percent of a far larger population of trucks in 2030 will continue polluting. Members of the Board, isn't it reasonable to ask staff to
reconcile their regulation with any realistic path to 
meeting our stated commitments? They have told us -- 
staff has told us that the rule is less about a specific 
number and more about sending a signal to manufacturers. 

But by aiming so far below what is feasible, that 
signal appears to be take your time. That's the wrong 
signal. We need a much stronger rule if we're going to 
bring manufacturers' full power to this effort.

Thank you.

VICE CHAIR BERG: Thank you. We're going to go 
ahead and ask if you haven't signed up yet, if you would, 
because we are now at 104 people. And so we're going to 
cut this off in 15 minutes, okay? So go ahead and sign 
up, if you haven't. Otherwise at 2:15, we'll be cutting 
the list off.

Thanks. Just that one thing, Mary.

(Laughter.)

CHAIR NICHOLS: That's what happens when you have 
a Vice Chair, you know?

(Laughter.)

MS. GREENWALD: Okay. Are you ready?

My name is Sara Greenwald. I speak for the 
combined memberships of 350 Bay Area, 350 Humboldt, 350 
South Bay Los Angeles, and 1000 Grandmothers.

With our densely populated coastline and Central
Valley depending on agriculture, climate-related sea level rise, droughts, deluges, and fires are going to hit us all where we live.

Four percent is not enough. On behalf of 350 Bay Area, 350 Humboldt, 350 South Bay Los Angeles, and 1000 Grandmothers, I ask that you raise the standard for medium-duty and heavy-duty vehicles to achieve on-road deployment in 2030 of at least 15 percent.

Thank you.

MS. BROWN: Good afternoon --

CHAIR NICHOLS: Hi.

MS. BROWN: -- Chair and CARB Board members.

Thank you for holding this hearing. I'm Clair Brown, economics professor from UC Berkeley. I'm volunteer with 350 Bay Area Action, and I represent San Diego 350, Fossil Free California, and 350 Silicon Valley.

We are here to urge you to have a much stronger goal on ACT, because you see the science. You all are really smart. Your staff is really smart. You know the science. You know the technology. You know we can do much more than set a low goal and hope.

As an economist, let me tell you, California now has 15 of the 30 cities with the worst air pollution in the United States. One half of the cities suffering from bad PM2.5 and ozone are in California. We have to do
better. The rotten tomatoes have been thrown at me all
across the country when this report came out.

So also as an economist, we've got to ask who is
paying right now for diesel trucks? The people of
California are paying with bad health, and especially the
kids who live in the Central Valley and Southern L.A.
We've got to do better. We can't keep them paying for
diesel fuels with their health.

As an economist, we also have been hearing today
about the power of regulation. Once you set high goals,
once its their certainty that we know we have to have
certain goals for electric vehicles in ZEV, then we can
see that the manufacturing will happen, the infracharging
will happen, the batteries will get better, and the jobs
will be there, and we'll make sure they're good jobs.

So thank you. Thank you for all you're doing.
And let's go forward with a really strong ACT Rule.

MR. KATZ: Hi. My name is Richard Katz. I'm
with No Coal in Richmond.

I'm a biochemist. But once upon a time when I
was a kid, I was in the trucking business. Tree Frog
Trucking, Cal T 119009, general commodities statewide
service. And we did a little bit of long-hauling too.

And what I wanted to tell you today was that's
the first electric truck I've ever seen, that Pepsi-Cola
truck that's outside. And I think you could take most of
the trucks here in California or anywhere else that had a
reasonably long frame. Did you know that all the trucks,
every single big truck, Class 8 truck, the distance
between the frame rails is the same. They're totally
standardized in that respect. And you could take all
those trucks -- it's just my opinion. You can take all
those trucks and put that electric motor on there with
those batteries, because that electric motor would
practically fit in the glove box. Did you see the size of
it? It's only this big.

We're talking about a huge diesel engine, you
know, like a big Cummins 6 being replaced by a little
electric motor. You can look at it out -- you couldn't
even find it. I couldn't even find the motor. That's
how efficient they are.

Well, a person that could help you out with that
is sitting in back. There's a Highway Patrol in the back
there to keep order. And he'll tell you that the Highway
Patrol takes a pretty dim view of heavily modified
vehicles. You've got to help these people -- not the
Highway Patrol. You've got to help out the people who
would really like to electrify their trucks. And I
haven't heard anything about there -- that from any of
your reports or from anything you're saying, but you ought
to look into that.

And if I have one more second, I'm going to tell you that I have a little bit of experience with this, because I have a Bolt. That's an electric car. I drove it here today. I'm very impressed by that. But even more to the point, I have an electric motorcycle. It's a Zero made Scotts Valley. It's exactly analogous to what we're talking about. When I ride around with people who have these big heavy Harley-Davidsons, they're really impressed.

(Laughter.)

MR. KATZ: Thanks.

CHAIR NICHOLS: Harley-Davidson is now making an electric motorcycle too.

BOARD MEMBER GIOIA: Hey, Richard, when I get back to --

MR. KATZ: I'll race them for pink slips.

(Laughter.)

BOARD MEMBER GIOIA: When I get back to Richmond, I want to ride your electric motorcycle, okay, Richard?


(Laughter.)


MS. KIM: All right. Good afternoon. My name is
Candice Kim. And I'm here on behalf of the Moving Forward Network, a national coalition of over 50 member organizations, including community-based groups, national environmental organizations, and academic institutions in over 20 major U.S. cities representing over two million members committed to resolving the public health harms created by our country's freight transportation system and achieving environmental justice and climate justice.

On behalf of the MFN, I urge your support of a truck rule that includes the most aggressive medium- and heavy-duty truck mandate possible. Fifteen percent by 2030 should be the floor and not the ceiling. The current proposal does not reflect the urgency of the global climate crisis or the public health crisis experienced by communities living in diesel death zones.

Epidemiological studies have consistently demonstrated that children and adults living in close proximity to diesel pollution have poorer health outcomes, including increased cancer risk and premature mortality.

Freight communities across the nation are watching this rule development so closely. A bold zero-emissions rule here will become a model and a beacon of hope for freight impacted regions across the country and across the globe.

CARB has an opportunity to tackle the single
largest source of NOx emissions in our state. I urge you to be bold, to act with urgency, and to prioritize environmental justice by adopting the most aggressive medium- and heavy-duty truck mandate possible; prioritize public health in diesel death zones; aim higher, because our lives depend on it.

MS. TOVAR: Hello. My name is Jessica Tovar and I'm also with the Moving Forward Network.

Low-income communities of color are withstanding the worst of freight-related pollution. We need aggressive approaches now to bring relief to these communities and also to meet the California need to reduce GHG and NOx emissions.

Climate change is an environmental justice issue. California's fourth climate change assessment spells the grave reality that our future holds and the consequences will be most severe in most -- in some of the same communities also fighting freight pollution.

A new first-of-its-kind study was released yesterday called the *Comparison of Medium- and Heavy-Duty Technologies in California*. The report concluded that electric trucks and buses can deliver the largest reductions in greenhouse gases and nitrogen oxide pollution, that they are essential for meeting California's climate and air quality targets, and that the
trucks will be most -- cost competitive by 2030.

They will create the greatest economy -- economic benefits, when compared to other emission reduction strategies for heavy-duty trucks and buses.

Given the study results, it is clear that you must adopt a more aggressive percentage today. Other states around the country look to California, and we need to -- we need your leadership and commitment to increase the percentage of sales requirements to no less than 15 percent and we need zero-emissions now.

Thank you.

MS. VERDUZCO: Good afternoon, Chair Nichols and members of the Board. My name is Iris Verduzco. I'm a long-time resident of the City of South Gate and presently work with the Moving Forward Network, which is based out of the Urban and Environmental Policy Institute at Occidental College.

I'm here today in support of an Advanced Clean Truck Rule that includes the most aggressive medium- and heavy-duty truck mandate possible. As a resident of a highly industrialized community that is heavily inundated with diesel emissions, living near railyards, freeways, and the ports, I'm here to urge you to protect public health, advance clean air and environmental justice.

Our communities need relief from these toxic
emissions. Our communities need zero-emissions technology now. As I think of what a strong Truck Rule means for our communities, I can't help but to feel emotional, as I think of the relief we'll experience and how better off our future generations will be.

It makes me hopeful to think of how many emergency room visits we'll be spared from. And I can't shake that feeling because the first thing I got to do as a legal adult was sign myself out of the hospital on my 18th birthday because I was suffering from a bronchitis respiratory flare.

When the clock struck 12:00, the nurses and I just exchanged a glance, because there's nothing happy about not being able to breathe.

At this age, I had already learned that these health issues are a result of our exposures, the result of living in diesel death zones, the result of having our schools use the L.A. River to host our sports practices, when the L.A. River runs adjacent to the I-710 freeway that carries out over 40,000 truck trips a day. When we say we are just trying to breathe, we mean it.

We need relief now. I ask the Board that you adopt the most aggressive medium- and heavy-duty truck mandate possible. Our communities, our health, and our lives depend on it.
Thank you.

CHAIR NICHOLS: Thank you.

BOARD MEMBER DE LA TORRE: Thank you, Iris, for coming to visit from South Gate and Occidental. I feel total kinship here.

(Laughter.)

BOARD MEMBER DE LA TORRE: Thank you.

CHAIR NICHOLS: Duly noted. Thank you for coming.

Okay. Mr. Horton.

DR. HORTON: Good afternoon, Chair Nichols and Board members. I AM Dr. Mark Horton, a pediatrician and former State Health Officer speaking today on before of 20 health and medicine organizations that have signed on to a letter urging a strengthened ACT Rule.

These include the American Lung Association, the American Academy of Pediatrics, the American Cancer Society, the American College of Physicians, and many more.

Through resent reports, we have gained a deeper and more troubling understanding of the impacts of air pollution and climate change on our health and on our future. The recent Lancet Countdown on Health and Climate Change is just the latest report showing the dire consequences that climate change will have on our health.
and that of our children.

According to the American Lung Association's State of the Air 2019 Report, over 90 percent of Californians live in counties impacted by unhealthy air. And our cities dominate the lists of the most ozone and particulate polluted cities in the United States.

Their report showed that climate-driven events like extreme heat and wildfires make the job of achieving healthy air that much harder. We must act decisively now. The transportation sector is the leading source of harmful air pollution -- air pollutants that threaten our health. We need a rapid transition to a zero-emissions transportation sector.

We applaud you for bringing this rule forward and urge you to consider strengthening the rule, so that by 2030, we see not tens but hundreds of thousands of zero-emission trucks displacing those currently fossil fueled.

Californians rely on our State agencies like CARB to fight for clean air and healthy climate, consistent with our State clean air and climate plans. We urge you to move quickly to set a stronger rule that applies to all truck categories and sets clear goals for 100 percent transition to a fossil fuel free transportation sector in the foreseeable future.
Thank you.

MR. BARRETT: Hi. Good afternoon. I'm Will Barrett with the American Lung Association and to be very brief, following Dr. Horton's great comments.

The American Lung Association is one of those more than two dozen health and medical organizations in strong support of the ACT Rule becoming a stronger rule in the final analysis. We think that the rule should be aiming for hundreds of thousands of trucks on the road -- zero-emission trucks on the road by 2030. We think that all of the truck classes should come forward to 2024, including the pickup sector. And we think that the fleet rule should be brought forward in time to make sure that a stronger rule is matched with the feet requirement at the same time.

So to keep it brief, this is a really important priority for the health community in California. We think that this takes a very important step forward in achieving our clean air and climate standards to protect public health. And we appreciate the fact that the staff and the Board members have worked on this for three years now to really improve the -- on the rule. And we think that it can go further with your direction today.

So thank you very much and look forward to working with you in the future.
MR. KENNY: Hi. Good afternoon, Chair Nichols, members of the Board. I'm Ryan Kenny with Clean Energy. And we do share some of the concerns that were expressed thus far today. But I do want to make just one targeted point and that is on the definition of near zero. As you saw in the slide earlier, there is a near-zero -- are near-zero credits.

But the definition is actually limited to quote, "Plug-in hybrids with some all-electric range". And this does expressly and purposely omit low NOx vehicles from the definition. And this is something that we're concerned about not just with this proposal, but also other issues that might come before the Board and have come before the Board.

There is a long history of including low NOx vehicles verbally or in writing in the definition of near-zero including in California State statutes, regional air districts. For instance, the South Coast Air Quality Management District does include it -- the definition in the Indirect Source Rules. CARB in agency documents have also included it at various times. And even opponents do refer near-zero -- as near-zero for low NOx vehicles.

So we do believe that this historical pattern has been established in a terms that is generally accepted. And we do ask that there be an amendment to either include
low NOx vehicles in the definition or just change the
definition and not include a near-zero definition in the
regulation.

I'll also make a note too that I think there was
a lot of stakeholders who do share this concern, and there
just hasn't been a public process yet to provide input to
staff and to -- also to the Board members. So going
forward, we do ask that this be considered with this
rulemaking and other rulemakings as well, and make sure
that low NOx vehicles are considered near-zero.

Thank you.

CHAIR NICHOLS: Thank you.

MR. COSTANTINO: Hi. Good morning. Jon
Costantino, Tradesman Advisors. And I had to put my
company's name and it's not a marketing ploy. There's
just so many clients, that I couldn't list all the members
that are affected by this.

Every client I work with is affected by this, the
large entity reporting rule. And we worked hard with
staff to get those three bullet points in the slide deck
to clarify and narrow down the reporting requirements.
It's important that those are followed through and we look
forward to working with staff on those.

One of my clients is the Southern California
Public Power Authority. And we're usually speaking on
behalf of their members. But the scope of this rulemaking is such that even they are included and they're just the joint powers agency. So it really does impact quite a few entities that don't normally get impacted by these rules. So I want to make sure that that's a key component of what staff is working on moving forward.

And then on behalf of - I'll mention one other client - Trillium, they're a heavy-duty infrastructure provider. They support the coalition, the renewable natural gas, low NOx comments that have been made before. And thank for your time.

MS. NAVARRO: Hello. My name is Lauren Navarro from Environmental Defense Fund. Good afternoon, both to the Board and to the staff.

Despite making up just seven percent of vehicles on the road, medium- and heavy-duty vehicles, meaning trucks, release 35 percent of total statewide NOx, 25 percent of statewide diesel PM emissions, and 23 percent of all on-road greenhouse gas emissions, all of which must be greatly reduced if we are to reach our state's greenhouse gas and air quality goals.

Fortunately, there is a solution and that's what we're here talking about today, that is zero-emission trucks. Zero-emission trucks, or ZEV trucks, will grow jobs in California as well. According to Forbes, electric
vehicles are already California's eighth largest export worth even more than oil. And there are eight electric truck manufacturers in California. For all of these reasons, we both support the passage of the ACT Rule and want to see it made as successful as possible.

Specifically, we offer to you today two recommendations for the Board to consider. First, include in the adoption resolution direction to staff to develop an analysis for ZEV truck sales, similar to the one CARB staff presented in the Board -- to the Board in July for passenger vehicles. And this was called the Cunningham Curve, but this time it would be for trucks.

This curve clearly showed the need to increase the rate of passenger vehicles that are ZEVs to nearly 100 percent by 2035 in order to achieve the 80 percent reduction in greenhouse gas emissions by 2050. A similar analysis will be absolutely necessary to guide the vision for trucks before and beyond 2030.

Second, given the magnitude of the local and global problem of truck emissions, which we've heard about today, we ask the Board consider where the percentages of ZEV trucks sold in each medium- and heavy-duty class can be strengthened and to adopt those higher percentages. One example is for 2b to 3 pickup trucks.

Thank you.
CHAIR NICHOLS: Thank you.

MR. LAWSON: Good afternoon. My name is Thomas Lawson. I'm with the California Natural Gas Vehicle Coalition. We are a trade association made up of engine manufacturers, utilities, fuel providers, fleets. And so we have a lot of different stakeholders that care about this rule. Because of that, we've signed on to a couple of letters that share our concerns. And as an early Christmas present to you, we condensed those wonderful letters down to three main bullet points, a one-pager for you right in front of you.

And, you know, one of the things I wanted to take a deeper dive on is number three, which the near-zero definition. And kind of just provide a little bit more color on why that's important.

Last year 2018 session, we co-sponsored a bill, AB 2061, that provides a weight exemption for alternative fuel vehicles. That bill specifically uses zero and near-zero as the vehicles that get that exemption in an effort to foster more turnover from fleets with alternative fuels.

We worked with a broad coalition on that bill. It was very important. It was very important, especially in the long-haul industry and provided a lot of clarification for enforcement under CHP on what types of
vehicles those are, so they know what to look for. So this muddled definition where the one that we have right now is definitely not the one that was intended in the bill, so we have these two issues.

I'd hate for fleets that are carrying these vehicles that have invested in alternative fuel vehicles to be cited or towed because of confusion as they go through the state on the scales. So it's really important that we clear that up. And, you know, my association stands ready to work with CARB on how we can do that in 2020. But it's probably one of our top issues, because that bill and that law is really important.

Thank you for your time. We, you know, would like to chime in on other concerns that folks heard from the different letters that we signed on to and we appreciate it.

Thank you.

DR. PHADKE: All right. I'm Dr. Amol Phadke. I'm a scientist and the deputy department head at the Lawrence Berkeley National Laboratory. And I lead our international work on clean power and transport.

Our research finds that the battery technology has improved, which is the key component of electric truck has improved much faster than what we had anticipated. The price reductions have come about 10 to 15 years ahead
of schedule. We find that the total cost of ownership of most electric trucks are already lower than diesel, given the right policy ecosystem.

So then we conducted a very high level assessment, a cost-benefit assessment of the proposed ACT Rule, which we have submitted as our comments. It's a fantastic start, but it leaves a significant share of the ICE trucks still on the road, and it is inconsistent with the carbon neutrality order.

So we then went ahead and conducted cost-benefit assessment of ZEV trajectory that will be consistent with the carbon neutrality order, and which basically requires that ambition to be raised by four to five X. Given the battery price trends, we find that the net present value of the benefits of a climate consistent and more ambitious rule is about $60 billion.

So that's it. So this is my comment as a scientist. I'm a scientific organization. I'm not taking any advocacy positions, but I'm also father of a four year old, so my scientist comments stop here.

But I feel that, look, the technologies move very rapidly. And there's a crisis. An there are $60 billion of net benefits on the table, so I really believe that strengthening the rule will serve the planet well.

Thank you.
MR. CHERIN: Good afternoon, Madam Chair, Board members, and staff. My name is Alex Cherin. I currently serve as the Executive Director of the California Trucking Association's Intermodal Conference, where I represent Nearly 200 Class 8 drayage fleets and truck drivers, servicing California's largest container ports.

As you know, the CTA submitted a comprehensive comment letter addressing both the challenges presented by the proposed manufacturer rule and the fleet reporting requirement. And the Intermodal Conference wishes to support those comments as well.

In addition, the members of our conference wanted to provide context for that letter to the Board, including our demonstrated commitment to investing in alternative fuel technologies, all modes of near zero and zero emission trucks, and our unwavering support for further incentives to help bridge the gap between outdated engine technologies and new cleaner platforms.

Of note is the fact that our drayage industry invested nearly $1 billion since the inception of the original San Pedro Bay Clean Air Action Plan in 2008 in order to turnover and change the drayage fleet in Southern California.

In addition, our members have worked with regular agencies including yours, South Coast AQMD, the Federal
Maritime Commission, and the CEC to deploy, when available, larger scale demonstration projects testing the feasibility of near-zero and zero-emission platforms.

Some of our members, most notably TTSI of Carson, California have integrated the largest percentage of near-zero and zero-emission trucks of any Class 8 drayage fleet throughout the state of California.

We bring up this background to provide context for the CTA comment letter and to reaffirm our commitment to working with CARB and other agencies to realize a more efficient goods movement environment throughout -- through the adoption of near-zero and zero-emission truck strategies to allow the industry to fulfill their operational obligations.

Thank you.

MS. CREMERS: Good afternoon. Noelle Cremers with the California Farm Bureau Federation.

I want to start by thanking CARB staff for meeting with us and considering the concerns that have been raised to date and committing to work to address some of those concerns moving forward. Really quickly, there is some ambiguity over who is subject to the reporting. I think most farmers would not be subject. However, the ambiguity in the definition of broker could bring farmers into reporting if they have two or more deliveries a week,
if they're viewed as controlling those deliveries. That also could raise concerns with double counting some of those reporting, if you have both entities.

Another issue is if you do have a business that owns enough farms to meet the $50 million threshold, if you have employees living on those properties, by requiring the reporting of the specific location of where those trucks are domiciled, you could be releasing home addresses of those farm employees. And so we just need to make sure that that doesn't happen moving forward.

On the specific mandate, I do have concerns about the potential costs that future mandates will have on farmers specifically. We appreciate the recommendation that the pickup trucks be extended until 2027 before requirements come into affect, but we expect the cost of all pickup trucks to increase under this rule.

And I just want to point out that in 1980 to purchase a pickup truck for a rancher, they had to sell approximately 17 calves to pay for that truck. Today, to buy a diesel pickup truck, they have to sell approximately 47 calves to purchase that same truck. So any additional Cost is borne by that business and they don't have the ability to pass that on. They have to somehow come up with that new money.

We think incentives are the way to go. It's
worked in plenty of other areas. The FARMER Program is a great example. And we'd like to see the push to ZEV vehicles be done through incentives rather than mandates.

Thank you.

MS. AGUAYO: Hi. Good afternoon, Chair Nichols and members of the Board. Thank you for the opportunity to submit public comment.

My name is Leslie Aguayo. I'm an Environmental Equity Program Manager at the Greenlining Institute, a research, policy, and advocacy organization committee to economic and racial equity.

I'd like to address the Board for a stronger Advanced Clean Truck Rule. From 1999 to 2005, my family started a new life Inglewood California, exactly two miles away from Los Angeles International Airport. It was not until years later after an asthma diagnosis that it dawned on me, the planes were only one part of the problem.

LAX, along with the Port of Los Angeles and Long Beach make up the nation's number one U.S. cost -- customs district, accounting for billions of dollars in California's international trade.

From these major air and sea transportation centers, trucks carry cargo across the country, delivering not just products, but diesel exhaust. With the greatest amounts of toxic air concentrating in surrounding
neighborhoods known as diesel death zones, a majority of which are populated by low income communities of color. African-American and Latino Californians face 43 percent and 39 percent higher rates of fine particulate matter pollution respectively than white Californians, exposing them to health consequences like asthma, heart and lung diseases, cancer, and premature death.

The Greenling Institute urges the California Air Resources Board to strengthen what could be an unprecedented Advanced Clean Truck Rule and lead our state to clean -- a cleaner future more quickly by, one, increasing the overall mandates to ensure that by 2030 no less than 15 percent of medium- and heavy-duty trucks on the road are zero emitting; two, including Class 2b pickup trucks and the mandates beginning in 2024; three, outlining CARB's long-term objectives for achieving a hundred percent zero-emission trucks in various categories; and four, committing to adopt corresponding fleet purchase requirements in 2021.

I often wonder what illnesses my classmates, teachers, and neighbors still experience for all the diesel exhaust we breathed. Policies like the ACT Rule, if done right, will allow future generations to never have to wonder.

Thank you.
MR. EVAN EDGAR: Chair and Board members. My name is Evan Edgar. I'm the John Cash of trash and compost.

(Laughter.)

MR. EVAN EDGAR: We are the collectors, and processors, and haulers of organic waste. We divert organics from landfills and heavy-duty vehicles to reduce short-lived climate pollutants. We oppose the proposed definition of near-zero. In no way we can be electrical by 2026 as a guy mentioned. We have contracts, franchises, infrastructure, fueling stations. But we're on it -- in it to win it.

As collectors and processors, we produce in-state renewable natural gas today. We fuel our fleet, both the Class 7 collector and a Class 8 haul to the valley to sequester carbon in the valley. So we've invested billions of natural gas platform. We're off diesel, getting off landfills, and getting off greenhouse gases today. We are net zero now. We're deep carbon now, not in 2045. We can do this today.

The short-lived climate pollutants are very important to get organics out of the landfill. That alone will get four million metric tons of CO2 just by getting organics out of the landfill and take it to anaerobic digestion composting. But another 2.2 million tons of
getting off diesel to be renewable natural gas.

We are carbon negative today, net zero today.

Our fleet owners -- the refuse fleet owners offer an elegant solution. We're in-state, where we can produce 75 million diesel gallons equivalent in SB 1383. Government -- local government procurement by 2022 and 2025. Fifty million gallons per year by dairy, 36 by wastewater, and 470 million gallons of in-state RNG. And today technically it's feasible.

We need to have the near-zero truck in order to have -- to fuel our fleet. So we need to include the low NOx engine into the near-zero definition. Near-zero counts in horse shows, hand grenades and heavy-duty.

We cannot let climate change policies get in the way of greenhouse gas reductions today. Instead of getting 15 percent by 2030, by doing near zero and RNG in-state, we can get 50 percent by 2025 and implement SB 1383.

Thank you.

MR. DE LA CRUZ: Good afternoon, Chair -- Madam Chair and members of the Board. My name is Carlo De La Cruz and I'm with the Sierra Club. I work with communities impacted by freight and air pollution in Southern California. Today, I want to use my time to share a story of a community member living in the Inland
Empire. His name is Ricardo Caballero.

"Good afternoon, everyone. My name is Ricardo Caballero. And I am 17 years old. I am currently living in Perris, California. I live in an area which it feels like there's a warehouse in every corner. Developers are adding a football sized warehouse to our region every day.

"Some might think that these warehouses are positively impacting us, because they are creating new job opportunities, but that is wrong. Many of the jobs provide barely livable wages and continue to contribute to our air pollution from trucks. The pollution from trucks is worsening our health. Gas and diesel pollution doesn't just stay in one place. It travels across our inland valley.

"Diesel trucks are coming out of the warehouses near houses and schools. When I was younger, I attended numerous doctor visits because of my asthma condition. I had to carry my inhaler everywhere I went. I already had to be attentive to what would -- what I was doing and what could potentially trigger an asthma attack. With this fear, I come to you today, to
take a stand and better care for our community, so that this terrible air quality doesn't affect anymore unsuspecting children.

"Today, I encourage you all not to forget about us in the Inland Empire and that we need a strong, Advanced Clean Trucks Regulation that protects our health, and our air, and our air quality. In school, our teachers tell us to strive for our best work. Is four percent really your best work? Fifteen percent clean trucks by 2030 is not too much to ask to protect our lives and our health.

"Thank you". Smiley face emoji.
(Laughter.)

MS. KATHERINE GARCIA: Hello. I'm Katherine Garcia with Sierra Club California. I am ceding my time to Jimmy O'Dea to talk more about the technical analysis he's done.

But I just wanted to mention first that many have reminded you that we need to think about the next generation. And as a pregnant woman who will be giving birth in the spring, I just want to say that my family deserves -- my growing family deserves clean air. And this is really about clean air and we would like you to strengthen this rule and think about our growing family.
Thank you.

MR. O'DEA: Chair Nichols, members of the Board. Jim O'Dea from the Union of Concerned Scientists.

I agree with Professor Sperling that this measure is one of the most important policies being considered for transportation, not just in California, but in the world. We need to get to as close to possible -- close to 100 percent zero-emission trucks in the next 25 years.

The current proposal gets us to four percent in ten years. Those numbers don't add up. We have to seize the opportunity we have today to make this proposal stronger. If we don't, decisions in the future are only going to get tougher.

Even if we get to that 15 percent target that we're proposing, we'll still have a long ways to go. And I want to just indicate that it's an analysis of truck sales in California and their operating characteristics that led us to conclude a 15 percent on-the-road population is both reasonable and achievable.

So even if we get to that 15 percent, we have a long ways to go. And I want you to know that you have not only the support of the Union of Concerned Scientists, but all of the organizations behind me that we will support CARB and other agencies to get there.

We've been doing this on incentive funding.
Working with the Legislature, we know there's a lot more to do there. On infrastructure investments at the PUC. We support fleet purchase standards. We support fleet reporting standards to inform those standards.

And I want to emphasize CARB's role in informing these secondary policies. I spend a lot of time working in policies at the PUC, notably the $700 million of infrastructure investments the PUC approved recently for medium- and heavy-duty infrastructure.

And it was CARB's policies that gave the Commission the justification to approve those investments. And so what we need to do now is adopt a policy to set a policy that will provide justification for these many supporting policies for the next decade. And that's what this manufacturer standard will do.

Thank you for your time. I thank you for considering this rule. It is one of the most important policies being considered in transportation today.

MS. FLORES (through interpreter): Hi there. My name is Olga Flores. I am coming from the Inland Empire and I am here to talk to you about my community that is very polluted. This is due to all of the warehouses that keep appearing in our communities, all the trucks going in and out, and the trucks going close to residences.

We're asking that you do not wait until 2030 to
be passing zero emission rules. Okay. You guys are asking for four percent, which is about 75,000 trucks. And I want to remind you that the company of Amazon, which is the largest private employer in the Inland Empire, is moving already 20 -- over 20,000 trucks just in that area. That's why we're asking for four percent to go at minimum to 15 percent. And we also want to ask when we will be able to see full zero-emission targets by -- what year by. Just on personal note, I have a child. I have a young son. He has asthma and he can't go and play outside regularly.

Thank you.

CHAIR NICHOLS: Thank you.

MR. FLORES (through interpreter): Okay. I'm here for the same reason. I come from the Inland Empire. I've been living there for 20 years and I've seen the massive increase of trucks and warehouse that have come into the community. So not only are they coming in and ruining the infrastructure in the streets, but we're also seeing all of this black smoke coming from these trucks that keep coming in and out. And if you start to go outside at around three, four, or five, your eyes will literally start to burn.

I also have a son -- a young son. He has asthma and I have to be very careful on what time I allow him to
go outside. I have to give him a short amount of time to
go outside and then has to go back inside. He's already
had a giant asthma attack and that's why we're here asking
for 15 percent at the very minimum.

Thank you.

MS. RODARTE (through interpreter): Hi, everybody.
Good evening. My name is Lorena Rodarte. I live in San
Bernardino and I take care of my home. My community is
surrounded by warehouses, railyards, cement factories, gas
plants and we have really high levels of pollution in our
community. And because -- and due to that, we have lots
of illnesses, such as asthma, cancers, respiratory issues
in my community.

In my family, it has touched us personally. We
have a family member with cancer and clots in their lungs.
We are asking for clean air, not just for us, but for the
youth who are the future. That's why we're asking for
four percent -- not four percent in 2030, but 15 percent.

In the streets of my community, I counted 147
trucks that passed in 30 minutes and sometimes there's
much more than that.

I thank you, guys, from the bottom of my heart
for the possibility of all the laws that you can change
that would affect my community. Please feel in your heart
as if you're helping someone in your family or act as if
you would be helping someone in your family that was in this situation.

Thank you.

MS. ULLOA (through interpreter): Hello there. MY name is Lilia Ulloa. I come from the Inland Empire. And first of all, I just want to say thank you for having us here.

I am here to raise my voice -- I'm here from Riverside. I'm here to raise my voice and lend my voice to the disabilities community, who are the most vulnerable in situations like this. These people in our community that have mini -- that have the most vulnerability to things in their environment, and -- but yet again, they are put in places where they're most susceptible to the contamination in their community.

As human beings, we have the right to clean air. And in this proposal, it is for sure that four percent would not be enough. And that's why we're here asking for 15 percent of the sales mandate. I think we all here deserve clean air, and for all of us that are here and all of the people that could not be here, and especially for those people that do not have a voice and cannot speak, like the children and the adults and the disabilities community.

I ask you from the bottom of my heart that you
take this proposal and accept it. Do more than what has been offered to you right now, the 15 percent, and you let us know at what year you're going to be doing that.

    Thank you very much.

MS. ROMAN (through interpreter): Good evening.

My name is Veronica Roman.

    I'm a community organizer with the Center for Community Action and Environmental Justice. I live in the community of San Bernardino, California, and I'm a mother and a grandmother. I am here to let you know that our community is being attacked by high levels of pollution.

    This past year we had a hundred -- more than a hundred days of air that was polluted. The sicknesses have increased, the asthma, cancer, respiratory issues, and more.

    I'm here to be heard, but also as a representative of my community. I am here -- I am here because of the respiratory issues that my grandson faces. I'm here to tell you what -- how our community is suffering. We are not asking, we are demanding, as the right that everyone must have for clean air.

    We want zero-emission trucks and we want them now. We want 15 percent by 2030, because every day that goes by is one less day of life for people that live in these communities. But instead, it's one less day of
Thank you.

MS. TRUJILLO (through interpreter): Good afternoon. My name is Adu Trujillo. I am a mother of three children. My oldest son is in high school, which is in front of a cement factory. My middle child -- my daughter is going to middle school right next to a freeway. And I have my youngest child who is in kinder -- or in elementary school lives right next to natural gas refueling station.

And one block away from that -- from my child's school is BNSF, the railroads. And that's in San Bernardino, San Bernardino the largest county. San Bernardino County has really beautiful mountains that get filled with snow. They have forests and deserts, but they also have some of the worst pollution, in which many people are suffering. I know way too many people with kids that have asthma and many people that are also having cancers, respiratory issues, and allergies.

Everything is -- all of those things are caused by diesel trucks that are driving through the Inland Empire. We don't live in an industrial area, but even then, there's 300 trucks that pass by an hour, which I counted one day by myself.

This is very dangerous because we have to be
driving right next to them with three kids in the back seat. This is the way that we live day-to-day. The streets are filled with potholes, because the trucks are too heavy. And just this past year, we had more than a hundred days where the air quality outside was unhealthy. And that's what our kids breathe in every single day and they have to live with that contamination, which is causing sicknesses. And I think that all kids have a right or deserve to have a bright future.

At the school that my youngest child goes to school at, Loma Linda University at the school where my youngest child goes to, and 47 percent of the children have asthma. I'm here to say thank you for allowing us to make a comment and asking if they can be zero-emission, why aren't they?

Thank you

CHAIR NICHOLS: Thank you.

VICE CHAIR BERG: Excuse me, before you go, can we thank you for translating. You did just an outstanding job. Thank you very much.

CHAIR NICHOLS: And running back and forth from one podium to the other. She's getting her workout today, too.

MS. CHAVEZ: Hi. My name is Kimberly Chavez. I come a long way from the Inland Empire, specifically for
this. I work with children with disabilities that all seem to have similar health problems such as heart disease, lung problems, liver, kidneys, you name it. Some of us don't understand the difficulties in living with all these problems.

Recently, I was given an inhaler, because of my difficulty breathing, and I was told I have asthma. Growing up, I did not have health problems, and slowly I started realizing that my breathing got more and more difficult.

How did it happen? I don't know. I don't come from a smoking environment. Typically, the low poverty class are the ones that live near the trains and the trucks that go by our neighborhoods every day. Nowadays, more and more children are affected by the air pollution beginning from the womb of their mothers and continuing their entire lives.

We hear more often that we have more children with down syndrome, with autism, and we don't know why. Let's make the changes that we all clearly know that we can for ourselves, for our children, for our community. We need 15 percent by 2030.

Thank you.

MR. RIVERA: Good afternoon. And I want to thank Chair Nichols and the rest of the board for allowing me to
speak today. And I come from the Inland Empire, and more particular Fontana.

And although I do appreciate the policies you guys are trying to enact, I do feel like they could be stronger. I believe that for four percent can be increased by 15 percent by the year 2030. And to give you an example, I work with people with developmental disabilities. Mainly I work with people that range on the autism spectrum and down syndrome. And some of their favorite activities involve going at and going onto nature walks.

And from these moments, they enjoy the little components that make life beautiful. And they're stripped away from this opportunity because they don't have the luxury to have -- not even the luxury actually. It's just done have the right to have clean air in our community. So because of this, they're stripped from that opportunity.

And also, I just really want to advocate for my community, that you guys really should reconsider your four percent goal. I feel like we can do better. As you guys being my elected officials, you guys have the power today to make something happen and I do believe in you guys. I live in the communities being affected. My family, friends, and peers, they're all at higher risk of
cardiovascular and respiratory problems. And they're being stripped of the simple activities of enjoying the outdoors.

And weak policies are what hurt our community as a whole and lead for future generations to deal with the irreparable harm caused by us.

Once again, I thank you for allowing me to talk today. And I hope you reconsider your four percent to 15 percent.

MS. MENDEZ: Hi, everyone. How is everyone doing today? Good?

Because some kids back in the Inland Valley aren't doing that well.

I'm Gabriela Mendez with the Inland -- I'm Gabriela Mendez with CCAEJ, the Center for Community Action and Environmental Justice. And I would like to share a concern of mine. I have been fortunate enough to join with community to do truck counts inside the Inland region and on the L.A. -- on like Southeast L.A. one of -- that was the most concerning to me.

We gathered on the 60 freeway behind my work, many homes and schools. Close to 500 trucks pass an hour, about 340 trucks on the 91 freeway, and 664 trucks on the 710 in Southeast L.A. per hour. And these are only counting the semi-trucks.
These numbers are alarming as sensitive receptors are usually found less than 500 feet from a freeway. And we do not need any more Band-Aids. We need per -- we need permanent solutions. I'm here for this very reason, as you have proposed to set a sales target for four percent.

And as I appreciate that goal being set and you guys hearing the concerns, I think that it is extremely low for the trucks that we are seeing in California right now.

I urge you to set the rule for 15 percent sales target. We need top putting our economic benefits before our planet and people, as folks will not even have a planet to spend their money on.

Thank you.

MS. ANGULO: Good evening, Madam Chair and Board. My name is Brenda Angulo and I grew up in the City of Fontana, an industrialized city, where the importance of steel production was so highly honored that it made its first high school mascot a Steeler.

While the mills are now closed, Fontana's initial embrace of the commerce and manufacturing rendered the city as a production manufacturing site, many recognize it as warehouse city, where trains and trucks pass by on a daily. Truck routes surrounding my city have affected the health conditions of my family and friends, neighbors who
have been plagued with health issues, such as asthma and
cancer as a result of air and water pollution.

I am also a kindergarten teacher at Sunnyslope
Elementary in Jurupa Valley, which resides on a hill, a
hill that overlooks a skyline of brown and blue, a sky
that does not share the very similitude with skies in the
books that I read to them.

On top of having to look at this layered sky, my
student's also have to breathe in the layers of this sky.
I share my perspective with you to clear the myopia of an
elementary student's recess in Jurupa Valley. We have
days where we cannot go outside due to air quality. We
have days where students must walk instead of run, in
order to make sure that they do not exacerbate their
asthma systems, days where students wear face masks in
order to breathe.

As a community member in a warehouse city, as an
elementary teacher, and as a concerned California citizen,
I ask that you hear our pleas and raise the standards for
future plans with green technology.

We are tasked with supporting the creation of
climate equilibrium, supportive of life, my student's
life. We ask that CARB initiates policies that are built
on moral infrastructure of climate change with ensuring
that commerce and manufacturing is contingent on emission
cuts and implement sanctions for squirrely carbon behavior. We hope that you strengthen the rule to 15 percent by 2030.

Thank you.

MS. VIDAURRE: Okay. Hello, Board members. My name is Andrea Vidaurre. I'm with the Center for Community Action and Environmental Justice. You might have seen me tweeting at you guys and tagging you all trying to get your attention over to us and over to what's happening in San Bernardino and Riverside County.

I'm trying to get your attention over here, because I want you guys to know what the reality is of the situation that's going on there, the reality and the amount of trucks and traffic of pollution that's going through our cities. We live in a beautiful community surrounded by hills and mountains that sadly have been deteriorated and are being destroyed by the negligence of leadership, the endless pursuit of greed and this false promise of prosperity.

In the Inland Empire there is no plan for sustainability from leadership. It's just grow, grow, grow, more trucks, more trucks, more trucks, without thinking about the damage it has been doing to people, real living people who are just trying to play outside, who are just trying to go on a walk, who are literally
just trying to breathe.

We the community and the workers have a vision of sustainability for where we live. So we come to this agency believing that we have an ally in this struggle against the corruption of local leadership. And what do we get? A proposal that is totally out of touch with our reality.

I want to ask how many diesel trucks do you see on a given day on your commute, ten, 20, 50? On our commute we're seeing over 500, 600 per hour. But at the end of the day, it doesn't matter, right? It doesn't matter if it's 50 or if it's 500. Nobody deserves to be breathing in cancer-causing toxins that are found in diesel, because diesel kills. It's as simple as that.

We ask that you not settle for the proposal that is being given to you. We demand that you as representatives of ours represent us accurately and ask for the sales target that doesn't ignore our lived experiences. Come spend some time with us in our communities, and see -- and you'll see that four percent is an insult, and you'll see that 15 percent is barely a drop in the bucket for 2030. We absolutely need more.

Many of our family members work in this industry as warehouse workers or truck drivers. Many are misclassified. I want to emphasize that this rule will
only be as strong as its reporting mandate, because the same intentional exclusion of our communities from decision making locally is the same exclusion that our families feel from those that unlawfully misclassify and gaslight us with economic burden.

Thank you.

CHAIR NICHOLS: Thank you.

MR. ALLEN HERNANDEZ: Good afternoon, Board. Thank you for having us here today. I also really want to just thank our community here from the Inland Empire who showed up, who traveled a long distance here. Can I get everyone from the Inland Empire to please stand up just so folks know.

(Applause.)

MR. ALLEN HERNANDEZ: We wouldn't be here today if this wasn't extremely important to us, right? We have family members, parents, you heard teachers, who all had to make accommodations today, find babysitters, you know, try to get time off work to be able to come here and testify on such an important topic, right?

Earlier, we heard about profit margins and, you know, all that kind of stuff. And we're here to really emphasize, you know, the human cost of this, right? You heard the stories. This is not, you know, just a selective group who just, you know, lives in one specific
community. This is the story for us throughout the entire region.

I don't know if I introduced myself yet, but I'm Allen Hernandez and I'm with CCAEJ. And I also -- I live in Fontana, from the Inland Empire. My little niece also lives in Fontana and -- I have two little nieces now, right, an eight-year-old and a 12-month old, right?

The eight-year-old has had asthma since she was eight months old. And it's gotten so bad now, that when she comes home we have to -- you know, she comes home from school and we have to replace her clothes from where she went to school at, because they're so covered in pollutants and all these things that cause allergies. And her doctor has said, we need to throw those immediately in the washer, wash them, and put her into new clothes. And as she plays during the day, replace those at the end of the night.

These are stories that are very common in our community. It's happening to a lot of our children, and so I'm here today to really say, right? You heard the talk about profit margins. It's more important than that. It's about real lives out there, right?

So I think 15 percent is a good starting point. Four percent is just not going to do it for our community. So thank you very much, Board.
CHAIR NICHOLS: Thank you.

(Applause.)

MR. SAKAGUCHI: Chair and members of the Board, my name is Dan Sakaguchi. I'm a researcher with Communities for a Better Environment, which is a statewide organization, environmental justice, that organizes in Richmond, East Oakland, South East Los Angeles, and Wilmington.

And I'm deep humbled by all the stories that I've heard today from folks that have traveled really far. And I'm here to join them to call for a stronger Advanced Clean Truck Rule. So one of the communities that I have the privilege to work with is East Oakland. Oakland is home to the Oakland Foreign Trade Zone which is one of the largest on the west coast, which makes it easier for companies to trade goods in the region.

These are generally not goods that East Oaklanders receive any benefit from or ordered. Instead, they have to bear the burden of the pollution from the diesel trucks that cut through their neighborhoods to deliver.

Because the trucks are prohibited from traveling on the highway that goes through whiter, wealthier foothills, they're routed directly through the East Oakland flatlands, which are predominantly low-income
black and brown neighborhoods.

Between the relentless stream of passing trucks on highways and idling trucks in residential neighborhoods, East Oaklanders constantly breathe in the diesel particulate matter that put them in, what others have called today, the diesel death zones.

It's no accident that children in East Oakland have a rate of asthma one and a half to two times the county average or the life expectancy in East Oakland is ten years less than those living in the hills.

It's important to say also today that in East Oakland the air quality issue is not just about the trucks. It's not just about the -- one of the worst polluting iron foundries in the state. It's not about a crematorium that currently builds -- burns 3,000 bodies per year in East Oakland. The threat is the combination of the emissions from all these sources. Toxics layered on top of NOx on top of particulates.

And so this rule today is an opportunity to dramatically reduce one of those major sources of cumulative emissions in places like East Oakland. However, the current four percent requirement doesn't sound like a victory. It sounds like a compromise that asks EJ communities to continue to wait for clean air. And East Oakland members are tired of waiting. Please
strengthen this rule to give East Oaklanders the clean air they deserve.

CHAIR NICHOLS: Thank you. We're going to hear from this speaker and then we're going to take a 10-minute break for the court reporter and everybody else.

MS. PINTO-CABRERA: Hello. Good afternoon, Chair Nichols and members of the Board. I'm Cynthia Pinto-Cabrera with the Central Valley Air quality Coalition. Thank you for taking your afternoon to listen to all this public comment. And staff as well, thank you for your presentation and for also taking the time to consider our comments.

I just wanted to highlight how important this rule is going to be for public health. Approximately between 40 to 50 percent of the San Joaquin Valley falls under sensitive receptors, which means that they're most at risk during pollution events. Myself -- I include myself in that 40 to 50 percent.

Just yesterday, in my attempt to workout, despite take all the proper precautions of being indoors in a well air-filtered room, I attempted to workout and I started wheezing. And my first thought was, hey, where is my inhaler, just as a precautionary. Despite taking all the proper precautions, it still happens. And I can only imagine what our EJ communities are suffering through.
Those who can't afford the proper ventilation, for those who can't afford to stay indoors during these pollution events.

It's clear evident that public health is extremely important for us advocates and community members. And truck emissions just contribute significantly to the formation of both ozone and fine particulate matter, not only with San Joaquin Valley, but as you can see today, throughout California.

I'm here today to echo a lot of the comments you've heard today for a stronger ACT Rule. With a strong ACT Rule, we can achieve significant reductions and relieve the numerous burdens that a lot of these environmental justice communities are suffering through. With a stronger rule, we can achieve a reduction in premature deaths. We can achieve approximately about $3.14 billion of public health savings. We can achieve a safer environment for the EJ communities.

And CARB has done tremendous work in cleaning the air. So I just would like to end by urging you guys to at least have a 15 percent minimum and keep in mind how important this will be for public health.

Thank you and Happy Holidays.

(Laughter.)

CHAIR NICHOLS: Thank you. All right. We're
going to take a break and try to be back here by 20 past. So thanks, everybody, get up and stretch.

(Off record: 3:09 p.m.)
(Thereupon a recess was taken.)
(On record: 3:23 p.m.)

CHAIR NICHOLS: Welcome back. We're ready to resume this hearing. And we're now up to number 69. So we've made great progress.

MR. MAGGAY: Shall I start?

CHAIR NICHOLS: It's okay to start, because everybody is either here or right in the back.

MR. MAGGAY: Okay. Good afternoon, Chair Nichols, Vice Chair Berg, Board Member Riordan, Board Member Mitchell. I guess I do it individually this time.

My name is Kevin Maggay. I'm with SoCalGas. We did submit a letter and we also signed on to a comment letter from CNGVC and you can look at those. They both include the inclusion of low NOx as a recommendation in the plan. But I did want to touch on a couple things specifically in my comments.

First, in addition to a weight multiplier, we recommend adding a range modifier -- a range multiplier for Class 7 and 8 trucks. If the State wants to make real dents in trucking emissions, it should focus on long-range high VMT truck applications, which accounts for a
significant amount of transportation emissions within the state. We think the CARB should take leadership in spurring the development and investment in long-range zero-emission trucks with hydrogen or even long range battery-electric trucks.

Second, and I mentioned this at the HVIP Board meeting, that we're concerned with the redefining of the term "near-zero" to mean hybrids. I say redefine, because several agency documents refer to near-zero-emissions as having 90 percent reduction or better -- reduction of emissions or better. CARB defines near-zero as a 90 percent reduction in its pathways to zero-emission or -- zero and near-zero technologies document. South Cast AQMD defines near-zero as a 90 percent reduction in its AQMP in other documents. CEC defines it as 90 percent reduction in its most recent funding plan. So it's been clearly defined in other documents. We find the redefinition a little peculiar at this time.

Redefining this term would impact a number of policies, plans, legislation, and regulations throughout the state. And we ask that staff, for the purposes of this regulation, just merely call it something else. Perhaps, trucks with zero-emission miles, something as simple as that, and then move forward with a public process to thoughtfully define the term.
Thank you.

CHAIR NICHOLS: Thank you.

I don't see the green light.

MS. CEBREROS: Good afternoon, Board members. My name is Edith Cebreros. I am a Coachella Valley native with Communities for a New California Education Fund. I urge your support of the Advance Clean Truck Rule and immediate transition to cleanest available technologies.

I was raised in Indio, which is located in eastern Riverside County. And I am an educator and soon to be a counselor. Knowing that the air quality in my community is terrible prompts me to take action now. My family, my neighbors, and everyone is affected. I work with young children ages five to ten, and there are days where we can't play outside, because the bad -- because of the bad air quality.

This hurts me, because their cognitive development is being harmed. We know that children learn best when they play outside. I'm constantly having to check the air quality -- quality index to determine if the air is safe or unhealthy, especially for the kiddos that have asthma.

My family plays soccer. And again, we have to cancel practice because of the bad air quality. I am here
today because I'm thinking of all the children and future children. Our communities deserve better. The exposure to this toxic pollution is constant, which is why we must transition to a zero-emission truck fleet.

We shouldn't put convenience and cost above human lives and the health of our communities. If you don't act now, then the future cost to our communities will far exceed the profits that industry is currently protecting. I am hopeful we will have a health environment where our future generations can thrive.

Thank you.

CHAIR NICHOLS: Thank you.

MS. VARGAS: Hello. My name is Anna Lisa Vargas, and I am a native of the Eastern Coachella Valley. I was born and raised in Thermal. And I am a community organizer representing Communities for a New California.

And I am here as well to urge you to act for the clean -- the ACT, and also so that we can move to the cleaner technologies. I myself had made a commitment and I bought a more expensive car, because I bought a 2018 Honda Clarity hybrid plug-in. And so I think as a person, if I can make that personal commitment, I think it's -- and I'm doing my fair share, I believe that industry should also be doing their fair share.

As I drive down the 10 -- Interstate 10, I'm
driving along in my zero-emission car and I see the rail -- the outdated trains, you know, chugging along polluting our air and ruining my view actually because we live in the beautiful Coachella Valley, if you've ever been there.

And also, I see that semi-trucks, diesels, outnumber cars. And I'm always having to look to make sure when I get on the freeway to make sure a diesel -- I've almost been knocked off the freeway, as I'm trying to enter on Monroe Street in Indio, California, where I currently reside.

So this is an issue that is really affecting our communities, and, as Edith said so eloquently, we cannot let convenience and basically cost rule, because that's what's been happening. That's why we're in this situation. And not only are we -- the bad air, we have the Salton Sea, toxic dust that we breathe in which IID has said proven to have neutrophils, which cause -- which they only see in bacterial pneumonia.

So I suffer from autoimmune Lupus, so I can -- on any given day, I know by just waking up and my joints ache, I know that it's a bad air day. I don't have to even look at the air quality index.

So thank you. I urge you. We plead. It's a plea. So we thank you for your time and to make the right
decision.

CHAIR NICHOLS: Thank you.

MR. HARPER: Chair and members, Adam Harper with the California Construction and Industrial Materials Association. We represent construction, aggregate, sand and gravel, ready-mix concrete, and industrial mineral producers across the state.

We're glad to hear that it sounds like CARB is going to work on the reporting program. And we will commit to work with staff on that. So it's important to get that right to plan everything for the future.

In general, I've heard a lot of the frustration here. But I wanted to focus on what the engine manufacturers and some of the natural gas producers have said to you, as someone who represents a consumer of the technology. Our industry doesn't decide what gets built and what technology they can purchase. They've already, you know, went through the initial diesel rules that, you know, were phased in by CARB the moment we had engine standards on heavy-duty trucks that could phase them in.

You know, many of them, that was a hard capitalization cost for their businesses. They are not Amazon. They are smart business men obviously in order to stay in business in such a competitive environment. And they have seen that diesel was going, you know, down a
regulatory path that was undesirable to continue being invested in. And we're looking at things like low NOx, natural gas, which have significant NOx benefits. And, you know, my phone stopped ringing about low NOx about this summer in July when this Board discussed -- you know, it became really apparent you're looking at almost all electric. And there's uncertainty that that investment in natural gas is something they're going to get a lifecycle out of.

And, I mean, I know economics sounds cold, but in -- these companies only have the money that society will spend on housing and infrastructure, and waterworks. It's not infinite for them either. They aren't Amazon. So there is a constrained system and they do need that business benefit. And low NOx natural gas, renewable natural gas that we know we're going to produce in this state off our farm economy seemed viable to us.

So thank you.

CHAIR NICHOLS: Thank you.

MR. TUNNELL: Good afternoon Chair Nichols --

CHAIR NICHOLS: Hi.

MR. TUNNELL: -- members of the Board. My name is Mike Tunnell with the American Trucking Association.

We would like to agree with the Chamber coalition and others who have raised comments pertaining to
clarifying and streamlining the large entity reporting requirements.

Let me give you an example. Interstate trucks, those large trucks that operate high miles traveling the interstates across state lines and rely on nationwide fueling network. Those are unlikely candidates for the state's initial electrification effort. Yet, they're included in the reporting requirements.

We believe they should be -- should not be included and would look forward to working with your staff in further streamlining that. We would also like to support comments of the California Trucking Association recognizing the need to further extend the reporting deadline, busy season reporting leading to overcapacity, and the handling of confidential reporting data.

Finally, a comment pertaining to electric trucks. There's a great deal of intrigue among our membership when it comes to electric trucks, but not a lot of experience. There's hope and anticipation that these vehicles will be able to stand up to the daily demands of the industry in terms of range, durability, and reliability. But companies are largely evaluating prototypes at this point.

We are just beginning the stages of understanding the challenges and opportunities this technology presents. So we look forward to continuing that journey and we'll
work with your staff and the Board to move forward on this.

Thank you.

CHAIR NICHOLS: Thank you.

MS. BLANCO: Hi. My name is Brittany Blanco. Hello, Board. I am a -- well, I coordinate a school air quality program. I'm with Comite Civico del Valle. And I'm from a disadvantaged community called the Imperial Valley, where the number of hospitalizations due to asthma is the highest in our state of California.

A large amount of schools within the Imperial County are located in industrial areas near warehouses or areas of high traffic. It's not fair that the children are exposed to particulate matter of 2.5 and it's not normal for classrooms to have four to six students who are -- who have asthma. And for a school district to only have one electric school bus, it's just not acceptable.

As an advocate clean air and emission reduction, I hope to see the standard -- well, the percentage raised and pushed to its fullest -- fullest potential, because our community's health depends on it.

Thank you.

CHAIR NICHOLS: Thank you.

MS. SANDOVAL: Hello, everybody. Good afternoon. My name is Isumay Sandoval. And just like Brittany, I am
from Comite Civico del Valle here at advocating for the community that you know every day we're exposed to numerous amounts of trucks and diesel pollution, like they mentioned earlier, you know, diesel deaths, because that's what it is.

And if I could account for how many times that I see all that exposure, I mean, there wouldn't even be a number for it. But I am hoping -- and thank you for having me here, but I would love to see, I mean, something higher than 15 percent, because 15 percent can be the minimum to start with, just because we want to ensure that there's something higher than that. Because, you know, we're exposed to the contamination from the Salton Sea. We're exposed to the diesel trucks. And then on top of that, you know, the agriculture fields that we're surrounded by and the pollutants that they release.

But I'm hoping that -- and I'm urging that it is into your consideration to have a higher percentage, because 15 percent should be the minimum to start with. And hopefully by 2030, these clean air vehicles are what we see on the highway, instead of seeing the fumes from the diesel trucks. Thank you.

MR. MIGUEL HERNANDEZ: Hi. Good evening.

Thank -- thanks to the Board. Thanks, Chairwoman Nichols, for having this opportunity -- giving me this opportunity
to provide this comment.

And I believe that the -- the ACT it is something that will be beneficial to our disadvantaged community.

I'm from Imperial County, an area that has been affected by different sources of pollution. As was just mentioned, we have the Salton Sea, right across the border, we have our friends in Mexicali, the lack of regulations for air pollution. We also have pesticide spraying. We have different sources and fried and diesel emissions are just another burden being added to -- to what's impacting our communities.

So I believe that this regulation has been put forward for benefit of the community. However, as it is presented today, it is -- it needs a stronger commitment from the staff that's presenting here to you and from yourself to make it stronger, to make it more impactful, and to make it beneficial to our community that needs zero emissions today.

We need to make a more robust regulation in order to achieve those goals that everyone is aiming to achieve by early as possible. And I think there is -- there is a market for these -- for these -- for these vehicles to be sold. I mean, just look at Tesla just recent numbers -- the pre-order is -- last time I checked it was like 200,000 pre-order vehicles. So there's a market for all
of that. And I think this regulation could help and
push -- move it forward and create a demand for more
productions of these vehicles to be out there and be made
available to our communities.

Therefore, if we see those vehicles around our
communities, we will start to have all that much needed
infrastructure that we don't have. At least in Imperial
County, we have a couple of State charging stations,
because, you know, these vehicles are not available.

Thank you.

CHAIR NICHOLS: Thank you?

MR. VALENZUELA: Good afternoon, Board. One more
from Comite Civico. So I'm Sergio Valenzuela. I'm a
Community Air Monitoring Technician in Imperial County.
And I come here today to speak a little bit about my
hometown located 30 miles northwest of the U.S./Mexico
border of Imperial Valley. Westmorland, California is
known as the gateway city, as it is the first city that
you pass through traveling eastbound from Los Angeles and
enter the Imperial County and westbound from Phoenix, a
disadvantaged and underrepresented community of color only
one mile from end to end and split right down the middle
by California Highway 78.

My hometown where I'm raising my kids is also
known as something else, a truck stop. With a hotel,
three gas stations and a newly developed rest area that
caters to semi-trucks, it's no wonder that it has
unfortunately been dubbed so

All day and overnight, there is non-stop trucks
passing and stopping to fuel and parking for a night's
rest. These trucks will stay idling for hours on end.
Even during the produce season, dozens upon dozens of
sems can be counted idling all night and their reefers as
well. And that's why I urge you guys to raise it from
four to 15 percent, because my kids are growing up there.
All these neighborhoods that are being affected are next
door to these trucks that have been idling for hours on
end. The school that my kids are going to is ride off the
78. They can throw a rock and hit a semi, if they wanted
to.

It's -- that's how bad it is. That's how
impacted my community is. All the kids -- or, I'm sorry,
not all the kids. Lots of kids have asthma where I come
from. My cousins have asthma. I used to watch my cousin
go to the hospital and have to be like hospitalized for
asthma for a whole day just because we're outside playing
in trees. And that's playing in trees, so imagine how bad
it must be for other communities. And we would like for
that push.

Thank you.
CHAIR NICHOLS: Thank you.

MR. OLMEDO: Good afternoon, Chairman Nichols and members of the Board. Great to see all of you.

First of all, I want to thank all the advocates, all the organizations that -- especially those who are working in metropolitan areas that have carried on this struggle for so many years. But we're also here to do the heavy lifting as well coming from rural communities, and that, you know, that we're choking from the industry, even though that we're smaller populations.

I also wanted to remind you that there are inland ports that are also affecting our communities, affecting our neighborhoods. And every product that comes out of our fields, every product that goes in raw product or to assembly lines down in Mexico comes through our ports, whether it's San Diego, whether it's the Imperial in our air basin.

We're also choking out there, because while we don't have the luxury of having the coastal winds, but we do have the impacts of all that emissions sweeping into the bowl that we live in in the Salton Sea region.

I'm not here to educate you on our issues, because I know all of you are experts in what they are. And I look forward to seeing you January 15. I'm here to support you in going further and going stronger. And
we're going to be here to make sure that we continue to advocate for all California to transition to cleaner technologies faster and sooner.

Thank very much.

CHAIR NICHOLS: Thank you.

MS. XI: Good afternoon. And thank you Board members for hearing our comments today. My name is Joyce Xi. I'm with the Union of Concerned Scientists. And I'm here to let you know that many leading scientists and health experts across the country are supporting taking the strongest possible measures around the ACT Rule.

Over 120 scientists, including notable university professors, including doctors, deans of public health schools, directors of leading research centers, national academy members, former EPA and CDC staff have signed on to a letter in support of a stronger ACT Rule, based on their understanding of the negative impacts of truck pollution on human health and the environment. I hope you will take their recommendations into consideration and make the needed changes for a stronger rule.

Furthermore, UCS supporters sent in almost 5,000 comments asking for a stronger rule that were part of 19,000 comments from members of other organizations also calling for a stronger rule. We've also submitted petitions from the San Francisco youth climate strike, the
American Public Health Association annual conference
calling for a stronger rule.

And today, I've submitted another petition. As some of you may know, this week is one of the largest annual convenings of climate scientists, the American Geophysical Union conference. And we've submitted 65 additional petition signatures from scientists at the AGU conference, who are currently meeting in San Francisco.

They're also adding their voices for a stronger rule.

Thank you.

CHAIR NICHOLS: Thank you.

MR. SHIMODA: Good afternoon, Chair Nichols, members of the Board. Chris Shimoda California Trucking Association. It's just going to be myself since Alex Cherin already spoke.

But first, I would like to thank staff for really three years of discussion to get to this point in time on this rule.

On the substance of the rule, we'd like to just support the California Chamber of Commerce and our coalition partners' comments on the need to do some additional streamlining on the reporting requirement. And just a couple things I'd like to highlight. First, on enforcement, we heard some comments today about smoking
trucks in the community. And I think, you know, through our work with the Board, we know what that means.

There are some folks that we all know are still not complying with existing regulations, as well as we're working with other parts of your staff on new regulations to make sure that clean trucks stay clean. We just need to keep a focus on enforcing those regulations, make sure that there's a level playing field for the folks who are compliant, and also cleaning up these emissions in the communities.

We don't want to end up in a situation with this rule where we're chasing down a bunch of paper. So we want to make sure that the enforcement burdens of this rule are not too great, because there's going to be a lot of folks who we just need to inform that they need to do the reporting to begin with.

Second, we'd just like to urge staff in the 15-day comment period to consider further streamlining. And there are some issues around release of confidential data that we think are going to take up a lot of staff time, and we'll continue to work with staff on those issues.

Finally, large entities have only three months to gather quite a bit of information. Our folks are saying it may take up to six months, so we would ask the Board to
consider that flexibility.

And then finally, just as the original light-duty ZEV Rule was adopted in the early nineties, you know, I think we understand this to be the beginning of this process, not the ending. And so we would like to urge continued dialogue between the ARB, the manufacturers, and the end users to make sure that this goes well and is a success.

And I'll just thank you very much for the time.

BOARD MEMBER SPERLING: Could I -- Chair, could I say something?

Chris. Mr. Shimoda. You know, we made -- Chair Nichols made an offer or an inquiry to Michael Lewis earlier. It was hours ago.

(Laughter.)

MR. SHIMODA: Right.

BOARD MEMBER SPERLING: It seems like yesterday.

(Laughter.)

MR. SHIMODA: Yes.

BOARD MEMBER SPERLING: Because, you know, many of us are concerned about the, you know, what might be an onerous and excessive set of questions and questionnaires. Would CTA be willing to be a partner with us in helping to administer and streamline the survey and work with us on that?
MR. SHIMODA: No, absolutely. And we did some early work with staff where I think the response rate to the initial surveys was around five percent. And I will just point out that we have been through a reporting rule before on the TRU regulation, where the response rate was two percent. We included that in our written comments. And so we'd love to do whatever we can to try to get additional information to staff to help them sort of consider what the strategies are going to be moving forward. And we have some other ideas on it I don't want to expound on, but I'd be happy to have further conversations.

BOARD MEMBER SPERLING: Thank you very much.

MR. SHIMODA: Thank you.

MR. CORT: Good afternoon. Paul Cort with Earthjustice. I also am here to urge you to ask staff to come back with a stronger rule. I think you've heard wide support for a stronger rule, and in addition, the need for a stronger rule.

And I want to talk about why we think a stronger rule is possible. And we've been arguing over this for three years. And I feel like we've had to sort of knock down one argument after another for why we can't strengthen the rule. We know that it's feasible. We can show that the trucks are there that are ready to be
electrified. We know the costs are competitive. We know the infrastructure investment is there and we know the consumer demand is there. And now, in the last few days, the argument that I have been hearing is that we don't want to expand the rule because it might require us to get some of these zero-emission trucks in smaller fleets and with smaller businesses.

And I want to clarify, first off, that I hope the argument is not that we don't want small businesses to have these zero-emission trucks, because the record is full of examples of how these trucks will be cheaper to operate and have a lower total cost of ownership, not just the staff's analysis, but Lawrence Berkeley, Luskin, McKinsey, and ICCT. So we want these trucks to be widespread.

Now, initial cost certainly is a concern, but the -- to address initial cost concerns, the answer is not to produce fewer trucks, the answer is to deal with those cost barriers, look at incentives, look at, you know, leasing and other sorts of models. But if you don't produce the trucks, you're not going to get these trucks into the hands that need them.

In fact, if you go with a low target, you're ensuring that you're not going to be bring down those costs as quickly as we could with scaled production and
you're also allowing big trucking fleets, like Amazon, to buy up all the trucks and exclude some of these small businesses. So I urge you, even for small businesses, to adopt a stronger rule.

Thank you.

CHAIR NICHOLS: Thank you.

MS. ALEXANDER: Good afternoon, Chair Nichols and members. I'm Meredith Alexander with CALSTART. I'm hoping I will not use my four minutes today.

Thank you for your time. And I'm here today representing our over 240 members, many of whom you've already heard from, who all support clean transportation and clean air. So first, we wish to note that whether truck segments, all those that we're discussing here today, reach full commercialization on the timelines as expected by this rule is highly dependent upon whether the State provides sufficient and consistent funding for HVIP and CORE, and pilots, and demonstration projects.

We don't think the truck market can fully transform without investment commitments by the State. And we also hope the Board will continue providing incentives in those regulated categories beyond 2024 or 2027 to increase the pace of change.

We also agree with many of the comments made by EMA and Volvo, specifically regarding further segmentation
within the rule as consistent with our Beachhead Strategy, which could potentially lead to even higher and more ambitious requirements in certain vehicle segments.

And also, as discussed by many others, we think that the current requirement to not phase in pickups until 2027 is still very ambitious, but we also encourage creative solutions that could have near-term impact on emissions, such as credits for plug-in hybrids, and potentially new ideas like technologies that reduce idling emissions from work trucks, such as electric power take-off. And we would like to see more focus on how to incentivize pickups, specifically given that they're driven by small businesses and they may not be able to earn LCFS credits. Those may be going to the utilities.

So again, we're all doing our part to help determine how manufacturers can develop and prove technology that can meet the wide variety of work applications these trucks are used for.

We also really appreciate the commitment from the Board today about developing a suite of programs together to be implemented on the same timeline. And we encourage the Board to accelerate the development of fleet rules for those segments that, as identified by staff, are best positioned for electrification.

And we see multiple fleet rules being more
effective than one blanket fleet rule to be implemented in 2024. And these will be provide certainty to manufacturers that demand further products will exist on a complementary timeline to this proposed rule.

Thank you again for your time and your commitment.

CHAIR NICHOLS: Thanks. Good to see you back at CalEPA.

MR. SEAN EDGAR: Good afternoon, Chairman Nichols and Board members.

CHAIR NICHOLS: Hi.

MR. SEAN EDGAR: I'm Sean Edgar with Clean Fleets. And I'll offer a few moments for what I'll call a pep talk. And my pep talk is about providers of essential public service. But before I get into that, I'll just touch on the last two speakers.

You heard from Mr. Cort what we know about small businesses and their desire -- his desire to have those small businesses participate. I'll just remind you the average fleet is struggling today to comply with your Truck and Bus Regulation. And we know that, because Board staff indicates that 82,000 noncompliant vehicles are rolling around California highways today. So that much we know. And we know that that is dominated by small businesses. So small businesses are probably the least
susceptible to be able to make the jump to lightspeed.

I'll just follow up by that by saying you heard from Ms. Alexander that it's a problem that's only solved with money. And my provider of essential public service contribution today is to tell you that the above-average company that we've had the privilege to work with in front of your Board for the last 20 years has actually been very successful in that near-zero low-NOx engine issue that we've talked about. So the folks that we're privileged to work with run over 5,000 natural gas vehicles every day of the week, a lot of those in disadvantaged communities. And that's been a challenge to get to, which has been billions of dollars -- over a billion dollars just in the waste industry.

And now what we're talking about is the above- above-average company is what the subject of this ZEV regulation is. So just to ground ourselves in reality, I was been -- I've been in this chamber for pretty close to 20 years, and we have average regulation, above average beyond the regulation, and now we're talking about way up.

So just on the minute I have left, I'll just address that public essential providers are defined by your Board as folks that perform essential publish -- public services to make sure that the wastewater flows, to make sure that the trash gets picked up, and to make sure
that electricity and natural gas are moving.

Those are the folks that should be the target. And we want to work on the Beachhead Strategy. But just thank you for the time to contribute and our letter is in the file.

CHAIR NICHOLS: Yes, it is.

MS. TUTT: Thank you, Madam Chair and members of the Board. My name is Eileen Tutt. And I'm with the California Electric Transportation Coalition.

I really want to recognize the CARB staff who put a tremendous amount of time in developing this extremely complicated regulation. It is going to be a very, very heavy lift to electrify the transportation electrification -- the transportation -- the medium- and heavy-duty segment of the transportation sectors. And I'm here to tell you that my myself, my organization, and my members are 100 percent behind making that happen.

This regulation is very, very ambitious. And we agree with everyone who said we need to go further, but we -- I do -- I don't have the full confidence that we can go further in the context of this regulation alone.

What we need is the fleet mandates to come up quickly. We need more incentives, reliable and adequate as Meredith from CALSTART said. We need the State fleets to commit to buying zero-emission vehicles, and hopefully
local governments fleets too. We need a tremendous amount
of investment in infrastructure and vehicle incentives.
And I will tell you that the utilities in particular are
very interested in investing in this infrastructure. And
we fully are committed to working with staff in developing
the tools to look at what it will mean to build out the
infrastructure necessary to support their trucks, not just
in the actual, but in all the rules that are coming down
the pike.

So thank you very much. Thank you to the staff.
And I hope you will approve this very, very ambitious
approach to the ACT Rule.

Thank you.

CHAIR NICHOLS: Thank you.

MS. AZAMIAN: Hello, members of the Board.
Before giving public comment, I'd like to say that the
next two residents speaking will be in Spanish. Our
interpreter had to step away, so -- and there's no
interpretation available, I believe. But if anyone is
available -- okay. Thank you. Or if -- yeah, if anyone
else can -- would like to volunteer as well.

Thank you so much.

So thank you, Chair Nichols, and members of the
Board for the opportunity to comment on the Advanced Clean
Truck Rule.
My name is Shayda Azamian from the Leadership Counsel for Justice and Accountability in Fresno, California. And we work with residents in inland California, across the San Joaquin, and Eastern Coachella valleys.

We're all brought here today, I hope, by the same mission to improve our air quality and reduce climate change impacts via greenhouse gas emissions reductions. Where it appears consensus is lacking, however, is in the urgency reductions must be achieved. Simply put, there's no allowable amount of time left that disadvantaged communities can wait for actual improvements in their air quality.

It is a fact that if we're not living it, breathing it, we just don't know or feel the full impacts. And this isn't a lack of experience deserving of derision, but there is a task ahead of us to learn from those who do have more intimate and personal knowledge when it comes to living and breathing in a fog of emissions that's only murkier every year.

There are folks here who can tell you what that's like to have to watch hundreds of trucks passing three feet across their homes every day and be freshly reminded what the damage will be on their lungs, their bodies, and their consciences.
Due to the unsurprising urgency of climate change and its long-time impacts on disadvantaged communities, who have been saying we are out of time, we will support nothing short of an achievable and reasonable 15 percent target for electric trucks on the road by 2030.

We look forward to meaningful implementation and bold action to address these climate change impacts felt by all and with particular urgency in inland California.

The importance of a direct public process for residents to design what works for them has always been great and is not forgotten now.

With me today are several residents from Fresno who can further illustrate the urgency of a strong rule.

Thank you.

CHAIR NICHOLS: Thank you.

MS. PEREZ (through interpreter): Hi. My name is Elodia Perez. I'm coming from the City of Fresno, California. I'm here because the area where we live is very bad with all the pollution. Where I live, they're building a lot of factories -- a lot of factories instead of housing and schools. It's hard to see big trucks every day where I live instead of schools every single day. There's lots of big trucks.

Due to all the big trucks that are coming, there's a lot of traffic. That alleys near my childrens'
school is full of trash and nobody cleans it. There are streets that aren't even paved. It's all just mud and stagnant water. I have a child with special needs and his school is an hour and a half away. And it makes me sad that there's not a school closer that can provide for his needs.

I see that our representative is not making an effort to better our community, and we really need help in our community. We need change. And I tried to meet with them, but nothing has been done. And they say that there's going to be changes, but no dates or timelines.

On the news on the television, they announced that if you don't have to leave your house, don't leave, because the air is so bad and the children shouldn't be leaving the home. And it really breaks my heart as a mother to see the children suffer this way. The decisions that adults make can really have a big effect on the children and they suffer the consequences.

We ask that you please don't let them build any more factories in Fresno, instead of housing, and more parks.

Thank you for your time.

MS. JORDAN: The next resident on the list is no longer able to make it, but I'd like to share a letter on behalf of Katie Taylor another resident of Fresno. My
name is Julia Jordan with Leadership Counsel for Justice and Accountability, but Katie wanted to share this letter today and couldn't be here.

"My name is Katie Taylor. I reside at 1415 East Central Avenue in southeastern Fresno County. I'm writing this letter simply because I'm presently experiencing a myriad of challenges as a result of the major developments, Amazon and Ulta, in my neighborhood. As a result of the building construction, I've developed sinus problems, as well as increased allergies, due to the implementation, erection, and construction of these projects.

"Furthermore, many neighbors have also shared their concerns and sentiments in relation to the existence of these structures. Many neighbors alluded to experiencing similar and/or more severe sinus problems, resulting in compromised immune pathologies, as well as continued ailments.

"These various projects have fostered and posed further concerns within our communities. For example, the development of Amazon, which faces just south of Orange Avenue, creates a penetrable glare all through the night in my
living room. Because of this, it has created a hardship for me and my daughter. We are no longer able to obtain adequate rest due to the scrutiny of the very bright light fixtures along the frontage roads at South Orange Avenue.

"Secondly, the pollution, as a result of vehicles being rerouted closer to my residence and others, has been unbearable. For instance, this has generated congestion and traffic due to an influx of larger trucks and more vehicles.

"Moreover, there is more pollution as a result, which has aggravated, as well as compromised, the health and safety of concerned neighbors. Incidentally, these hardships have impacted me, as well as my neighbors, within the communities as these challenges persist on a daily basis. We have endeavored to work with the city and county officials in an effort to achieve suitable measures to mitigate these challenges.

"Unfortunately, we have yet to hear a viable or suitable provision that would be sustainable in assisting us in this matter. At this time, we're open to suggestions and/or measures that are aligned in helping the above-before mentioned needs for our neighborhood and the residents who
reside within them.

"Respectfully, Katie".

MR. MAGAVERN: Good afternoon. Bill Magavern with Coalition for Clean Air.

My neighborhood in Supervisor Serna's District is at the junction of Interstate 5 and the Capital City Freeway. So we have constant truck traffic and so much diesel exhaust that we are classified in the most 15 percent disadvantaged communities in the state, according to CalEnviroScreen.

Last week, we were in West Oakland, where a number of Board members, as well as community members, noted the amount of truck traffic and consequent diesel pollution in the neighborhoods of West Oakland. And this morning, we talked about the South Coast ozone problem and how we need a rapid truck clean-up in order to have any hope of finally delivering healthy air to those residents.

So -- and, of course, last month, at your last Board hearing, you heard about the latest research on diesel particulate matter, which is even more dangerous than other types of fine particulate matter.

So we obviously need to electrify our trucks as fast as possible. I wanted to first address the reporting rule. We support that reporting rule and, in fact, approve of the option presented by staff where there could
be voluntary compliance, which would lead to actually quicker collection of the data, which would allow for expediting getting to the fleet purchase requirements, which we think are essential to go in tandem with the manufacturing requirements.

The manufacturing requirement we've been working on since it appeared in the Mobile Source Strategy a few years ago. And since then, we've been calling for it to be more ambitious. I agree with the scientist from Lawrence Berkeley, who said the proposal is a good start, but it does need to go further, faster, in order to get us the clean air that we need.

And I also wanted to raise the question of why motor coaches would be exempted from this. We're requiring public transit buses to go zero-emission, so why not private buses.

Thank you.

CHAIR NICHOLS: We'll ask staff to address that question.

Thank you.

BOARD MEMBER SERNA: Madam Chair?

CHAIR NICHOLS: Yes.

BOARD MEMBER SERNA: May I ask a question of the speaker, please?

CHAIR NICHOLS: Oh, go ahead. Sure, if you have
a question for this particular witness.

BOARD MEMBER SERNA: Yeah. Thank you.

So, Bill, thanks for your testimony. There's been a lot of reference this afternoon to this four percent versus 15 percent angle. And I'm certainly going to have some questions when it comes back to the Board for deliberation about that. But you -- your -- one of your last statements was this interest in going further, but I didn't hear you necessarily quantify it or qualify it the same way that other speakers have. Do you have any thoughts on that?

MR. MAGAVERN: Right. I mean, we don't necessarily know what's the best exact number or timing. But, you know, I note that Union of Concerned Scientists analysis thinks we can definitely get to 15 percent. Lawrence Berkeley Lab thinks we can go beyond that. And I would just say especially when we're looking at 2030 or further out to 2040, if there were ever a time to say we should stretch, this is a standard where we should be stretching as much as possible.

And, you know, as we get further along, you can always look at any adjustments that would need to be made. But I think it's crucial to send that signal now to the manufacturers to get their product out there.

BOARD MEMBER SERNA: So -- so I heard you say
"get to", right, not "be at". So I'm still -- I'm still trying to kind of pin you down a little bit in terms of, you know, do you have a number in mind now, similar to some of the others that have spoken this afternoon?

MR. MAGAVERN: Well, I think that we want to get to a hundred percent zero-emission by 2040. That would be one number I would have in mind and then look at making sure that we have benchmarks along the way, so that, you know, we're on target to meet that and not backloading it too much.

BOARD MEMBER SERNA: Thank you.

BOARD MEMBER GIOIA: I have a question.

CHAIR NICHOLS: Yes.

BOARD MEMBER GIOIA: I just want to make sure I'm understanding all these numbers. So the proposed rule as drafted looks at starting in 2030 of new purchases 50 per -- 15 percent of new purchases in Class 2 and 3 -- 2b and 3, 50 percent Class 4 to 8, and 15 percent in Class 7/8 tractor group. So the 15 percent number that you're -- you and others are mentioning are of the total fleet, not of new purchases?

MR. MAGAVERN: Right. When that's discussed, it's about the fleet in-use --

BOARD MEMBER GIOIA: Right, not --

MR. MAGAVERN: -- as compared to new purchases.
BOARD MEMBER GIOIA: Right, as opposed to the new purchases. That -- because that's at 15, 50, and 15, depending on the class.

MR. MAGAVERN: Right.

BOARD MEMBER GIOIA: Right. Right.

MR. MAGAVERN: And then if we look at -- the staff proposal does anticipate that by 2040, a hundred percent of pickup and delivery would be zero emission, I don't think the manufacturer requirement in the proposal alone would get us to that. I understand there's an anticipation that the fleet rules would get us there, but I wonder if that might put too much of a burden on the fleet rules alone and we should probably be asking more the manufacturing side -- or we think we should be asking more on the manufacturing side.

BOARD MEMBER GIOIA: Has -- has anyone computed if -- to reach a 15 percent fleet requirement in 2030, what the percentage requirements of new purchases would have to be in this schedule? Is -- it -- that may be in someone's comment letter. I don't recall. But does the staff know what new purchase requirements would be need to be phased in by year to achieve a 15 percent?

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:

Yes. Several of the environmental comment letters did have those percentages.
BOARD MEMBER GIOIA: I'll look at those. Okay.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
And I have one of them in front of you, if you want me to read it off.

BOARD MEMBER GIOIA: Sure.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
It would be percentages in 2030 of 60 percent of all vehicles in the 2b/3 category; 75 percent in our middle 4 to 8 category; and 30 percent in the Class 8 tractor category.

BOARD MEMBER GIOIA: And just by comparison, what -- and the -- for the -- and in 2024, what would they need to be?

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
Fifteen percent in '24 for the 2b/3 category.

BOARD MEMBER GIOIA: Right.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
Thirty percent in that middle category and ten percent of Class 8 tractors.

BOARD MEMBER GIOIA: And do you -- do you believe that those numbers reflect -- are accurate in reflecting what it would take to get to -- do you agree with the assumptions and calculations on those percents that get us to 15? Just trying to understand.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
Those percentages would get us in the range of 15 percent.

BOARD MEMBER GIOIA: Right.
MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI: It's going to be dependent on --
BOARD MEMBER GIOIA: Right.
MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI: -- sales volumes --
BOARD MEMBER GIOIA: Right. Got it.
MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI: -- and things like that.
BOARD MEMBER GIOIA: Okay. Thank you.
CHAIR NICHOLS: Okay. Thanks.
MS. BEKEMOHAMMADI: Good afternoon, Chair Nichols and Board members. My name is Roxana Bekemohammadi. I'm here on behalf of Ballad Power Systems. We support the proposed Advanced Clean Trucks Regulation and appreciate the work that the staff has done to date. Ballard would like to reiterate that fuel cell technology can reliably serve the trucking sector with the range necessary for many applications, while simultaneously achieving California's air quality goals.

We currently are demonstrating a fuel cell drayage truck at the Port of Long Beach and have an additional 500 trucks operating in China.
Independent owners/operators deem that fast fuel times for a hydrogen fuel cell truck is critical to operating similarly to incumbent technologies. We encourage the Board to assess the adequacy of heavy-duty fueling and charging infrastructure required to support these new ZEV fleets, particularly electric grid upgrades in an expansion versus hydrogen non-grid alternatives to ensure that rapidly-deployed zero-emission infrastructure for trucks that are mandated through this regulation do not become stranded assets.

Lastly, we encourage you to support the regulation in its current form and ensure that it's implement in a technology-neutral manner.

Thank you.

MR. APPEL: Hello. Good afternoon, Chair, Board members, and staff. My name is Sam Appel. I'm the California Advocate for Blue Green Alliance, an alliance of nine major national unions and five environmental groups.

I'm here to share the position of a coalition of labor, EJ, and environmental groups on the reporting requirement. A representative of the California Teamsters union couldn't be here, but I've been given permission to speak on their behalf in supporting the coalition's comments.
We support the reporting requirement in concept. The Board and stakeholders need accurate industry data to engage in informed dialogue about essential fleet rule policies. However, we do need a stronger reporting requirement that captures key data on industry adoption barriers.

One particular barrier that we draw your focus to is contracting. One top line -- our top line point is that firms that rely on contractors, particularly misclassified contractors, are positioned poorly to adopt clean truck -- clean truck rules. CARB has begun in the proposed regulation to develop an understanding of contracting, but we do need to know more about where and how contractors operate and to -- in order to successfully develop fleet rules.

Contractor truckers are highly exploited workers operating on the margins of legality, earning very little income, and facing high financing costs. Many contractors earn under the state minimum wage per hour with net incomes between $28,000 and $35,000 per year.

For these reasons, contractors maintain the lowest rates of compliance with CARB's most significant emissions technology rules. Forty-four percent of truck and bus noncompliant trucks are in the contractor segment. And truck and bus noncompliance in turn doubles statewide
PM2.5 emissions from heavy-duty vehicles. And we know that the impacts of this are most heavily felt in EJ communities.

Our request is that the Board lower the reporting threshold for firms in trucking segments with high concentrations of contractors like port trucking, and package delivery.

CHAIR NICHOLS: You can finish up your sentence there.

MR. APPEL: Thank for your consideration.

CHAIR NICHOLS: Okay. Thank you.

MS. HOANG: I'll expand upon some of those reporting requirements in my comments.

Good afternoon, Chair Nichols and Board members. My name is Kathy Hoang. And I'm with the Partnership for Working Families. We are a network of 20 organizations nationwide, including in California the Warehouse Workers Resource Center of the Inland Empire and the Central Coast Alliance United for a Sustainable Economy of the Central Coast, which you'll be hearing from both of those organizations, as well as representing Los Angeles Alliance for a New Economy, who has been organizing truck drivers and community members of the -- around the communities of the ports of Long Beach and L.A. for the past decade, as well as the Center on Policy Initiatives
in San Diego.

We are urging the Board to consider the 15 percent manufacturing requirement of clean trucks by 2030, as well as these reporting requirements to be strengthened to really address the underlying economic dynamics of contracting in the trucking industry. Companies that rely on contractors as has been mentioned, especially misclassified drivers, are really poorly positioned to adopt Clean Truck Rules.

As mentioned, many contractors earn under the State minimum, 28,000 to 35,000 per year. And these drives will be unable to afford the upfront costs of transitioning to new clean trucks. A 20-year truck driver shared with us, who works for Southern Counties Express, you know, I'm barely making enough money to keep food in my refrigerator, you think I'm going to spend the little I have on a truck.

And so in order to achieve compliance with the new rules, we need to ensure that the companies that are employing these drivers are taking responsibility for the transition to clean trucks.

And so we're urging the Board to consider reporting requirements that include lowering the firm size threshold to 15 or more dispatched vehicles; clarifying the distinction between subhaulers and subcontractors, so
that all businesses operating under contract are covered; collecting data on contractors, not just those with one-year plus contracts; collecting data on total hauls and hauls performed by direct employees versus contractors; and requiring annual reporting so that we have a comprehensive picture of a changing industry.

So we're hoping that the Board has a comprehensive data on the contract industry in order to achieve the adoption of clean truck technology.

And speaking personally as a mother of a two-year old in Los Angeles, you know, I urge you to consider the environmental, labor, and community issues as interwoven, so that children, like my son, can grow up with clean healthy air.

Thank you.

MR. VALLECILLO: Good afternoon, everyone. Wow. You guys -- you all have a big decision in front of you all.

My name is Anthony Vallecillo. I'm actually a community organizer with the Warehouse Workers Resource Center. I actually used to work for a company called Cal Cartage based out in L.A. I'm pretty sure you all heard about this company that took advantage of a lot of a com -- a lot of company drivers that were misclassified. I've seen so many incidents that happened with these
workers that I don't want to see again today.

Back in 2008, I think -- I don't know if you all remember. There were similar regulations that had passed that was burdened -- that took the burden was the workers. They all were, you know, responsible for all these fees. The companies were making all the decisions, at the same time not holding accountable for their real -- role as an employee -- as employers.

So my main concern is just to make sure that you all understand that you all have a big decision in front of you, and that hopefully they don't -- you know, it doesn't take a bear -- takes a toll on the workers and make sure that companies are reli -- are liable for all these issues that are happening today at this moment.

I've seen so many accidents, workers, you know, struggling to get by, you know, workers trying to make ends meet, trying to really make a living. And besides these trucks that are, you know, going to be expensive, I get that. But at the same time, not have accountable -- accountability as well for the companies that are not reli -- or not re -- or not paying their, you know, share -- share fair and making, you know, a greater California.

And actually -- we're going to be actually -- we're going to be one of -- one of the actual, you know,
first -- I don't know. I'm thinking. I'm not too sure now, one of the first regulations that are going to be seen by other states and other countries as well. So this is a big issue. Hopefully, you all really, you know, do your due diligence and do some investigation, as well as really in depth find out what's going on with the root cause of the issues today finding right now.

Thank you.

CHAIR NICHOLS: Thank you.

MR. DIAZ: All right. Is this on?

Adam Diaz, Warehouse Workers Resource Center.

Again, thank the chair and the Board.

I'll make this brief. I don't want duplicitous testimony. Our Organization, Warehouse Workers Resource Center, has taken on the ambitious task of advocating for Southern California Amazon workers. We are part of a national coalition, which was announced in the New York Times the week before Thanksgiving.

That being said, we're in a unique position in terms of the issue of independent contractors and misclassification. I won't repeat what other folks have said, other than to underscore that this is not only a labor issue, but it's a climate and environmental justice issue as contractors, particularly misclassified independent contractors, have the lowest CARB -- or excuse...
me lowest rates of compliance with CARB's most significant emissions rules. Actually 44 percent of non-compliant trucks are in this segment. And additionally, misclassified drivers will struggle to properly maintain clean diesel trucks, as these costs are approximately 70 percent more than the conventional trucks.

So therefore, our ask is is very short and succinct, and much to the chagrin of the Chamber of Commerce and industry. We're actually asking for more stringent reporting standards.

Thank you.

CHAIR NICHOLS: Thank you.

MS. KIMBERLY GARCIA: All right. Good afternoon. My name is Kimberly Garcia. And I'm a member of the CAUSE Youth Committee.

I'm here to implore the Board to increase sales requirements, which would facilitate the process of getting a minimum of 15 percent zero-emission trucks on California's roads and supporting those in the trucking industry through this transition.

I come from Oxnard, California, one of the many low income communities of color being affected by poor air quality that a multitude of speakers before me referred to today. Oxnard is affected daily by a neighboring city's port, the Port of Hueneme which plans on expanding soon.
and the diesel trucks entering and exiting the city every day to access the aforementioned port.

These trucks are one of the many factors contributing to my city's poor air quality, which starkly increases local asthma and cancer rates. The pollution affected me specifically, in such a manner that I have to get injected with a custom vaccine made at a specialist's clinic one town over every three weeks to control my allergies that will flare up my asthma, allergies that I was diagnosed at six years old and allergies that my younger brother was diagnosed with at the exact same age.

However, switching from diesel to zero emission trucks is easier said than done. Truck drivers only make between $28,000 to $35,000 a year, which isn't enough for a truck driver to maintain a zero-emission truck and support their own livelihood.

Keeping a zero-emission truck would cost a driver approximately 70 percent more than it would a conventional truck. The misclassification of these drives as independent contractors isn't doing them any favors either. Because of their misclassification, truck drivers are being deprived of their minimum wages, benefits, and workers' compensation. While we need to make changes for the sake of our community and the environment, we don't want it to come at the -- we don't want it to come at the
expense of the trucking industry's employees.

We urge the Board to strengthen the Advanced Clean Truck Rule to increase the sales requirements to achieve a minimum of 15 percent zero-emission trucks out on the roads, and we support the strengthening of the reporting requirement.

Thank you.

CHAIR NICHOLS: Thank you.

MS. PACHECO: Hello. My name is Citlalli Pacheco. And I'm a young adult member of the -- for the organization CAUSE. In CAUSE, we strive for the betterment of our city, Oxnard. And today, we're focusing on the -- on clean truck manufacturing quotas and the impact they would have in our community, as well as the misclassification of drivers that ties them into economic stress.

We ask now that the ACT Rule add a 10 percent increase apart from the proposed five percent in Clean Truck Regulation and increase truck maintenance reporting. This is possible by setting up a sustainable business and having truck manufacturers increase their sale requirements in order to have the 15 percent of trucks in California be clean by 2030.

In Oxnard, we have an abundance of air pollution due to farming chemicals, factory exposure, and in recent
years, because of the exponential rise of delivery services and transportation, as well as Oxnard's planned port expansion, Oxnard is currently experiencing increased diesel pollution.

The state of California reported that 70 percent of the risk for cancer and air pollution comes from diesel polluted air. And in Oxnard, we have a large asthmatic population who would not -- who would largely benefit from the diesel pollution cuts.

Drivers of these trucks are considered independent contractors, which allows the company that hires them to be rid of any responsibility in regards to truck maintenance and driver health.

Unfortunately, the ownership of clean trucks is a financial burden on many of the drivers who earn less than the state's minimum wage per hour, which makes it harder and oftentimes impossible for drivers to afford clean truck maintenance. If trucking companies were to cover maintenance costs for their drivers, then not only would we have cleaner air for workers/drivers, who wouldn't have to host as many financial struggles while just simply trying to do their job.

The ACT -- the ACT Rule having a 15 percent goal for clean trucks by 2030 doesn't only reduce diesel emissions, but it has a lasting impact on marginalized
communities and their health, as well as provide --
improving better working conditions for drivers.

CHAIR NICHOLS: Thank you.

MR. OCHOA: Hello. My name is Evan. I am with
CAUSE Youth Organization. And if you don't know, I am the
handsome fellow on that screen right there.

(Laughter.)

MR. OCHOA: All right. But more importantly, I'm
here to discuss the unfairly treated independent truckers,
as my uncle is an independent contractor himself. His
name is Emanuel. And he doesn't really have enough. He
has a daughter. Doesn't have enough to support her. She
lives with her mother all the way in Arizona. And it
sucks, because every time he wants to go see her, he
can't, because he's either out on long business trips
doing his work, trying to earn enough just to support
himself. And I really think that we could do better.

I would say is give them benefits, more
insurance, and have the company you know -- how would I
say in a nice matter? I would say that the companies
could give them more benefits for whatever independent he
is doing.

My uncle means a lot to me. And I want him to
get better working conditions. And it sucks knowing that
there's more people that are just like him, and for people
to suffer that much just to barely get enough to pay rent. Sometimes they have to save their money to pay rent and not even be able to get food for the month. My uncle has to do that just to be -- make sure he has enough for rent. And some truckers actually have to do that, which is really unfairly cruel and unjustified.

And as Adam said before, you guys do have a big decision up to you. And I hope you guys will come up with a policy or an act. But you guys do represent everybody, and I hope you guys choose well.

Thank you.

CHAIR NICHOLS: Thank you.

MS. PONCE: Good afternoon. My name is Yesenia. I'm a youth leader with CAUSE. And I'm from the City of Oxnard. I'm here today to advocate for clean trucks, because it will make a change in my community and many others.

The port in Oxnard is trying to expand and we noticed that there will be more diesel trucks that will be polluting my community. Our community is already in the 80 percentile of diesel emission and suffers tremendous -- tremendously from pollution. These trucks will be passing by the elementary schools, which will risk the health of so many kids.

This is very important to me, because my little
brother was born with asthma and he had to take many medications in order to decrease it. And seeing my little brother going through this made me realize that not only him but many -- but thousands of people are going through the same problem.

We urge you to at least increase 15 percent of trucks on the road in 2030 to be electric. I believe that the drivers should not be the one to pay 70 percent more to maintain the conventional trucks, because most of the drivers earn minimum wage per hour, which means that they don't have much left, since everything goes to fixing their trucks.

As we noticed, drivers can't afford the cost of purchasing or maintaining electric trucks. And so we need to address the issues of misclarification[SIC] drivers as dependent contractors. We urge you to increase trucks to 15 -- electric trucks to 15 percent and strengthen reporting issues.

Thank you for your time.

CHAIR NICHOLS: Thank you.

VICE CHAIR BERG: Great job.

CHAIR NICHOLS: Um-hmm.

MS. CRISTEL GONZALEZ: Hello. My name is Cristel. And I am youth -- I'm a youth at CAUSE. I'm here to advocate to increase the percentage of sales
requirements, so that at least 15 percent of trucks on the road in 2030 are electric. More clean trucks are important to people in Oxnard like me, because I have a family -- I have family members that have asthma and the air quality is very bad for them to breathe. Also, people can get asthma by the bad air. They can also get cancer from the diesel emissions and we can have people getting sick.

I also want to make sure that as we transition to electric trucks for the sake of communities and families like mine, and while doing this, we don't leave the workers behind. I just think it's not fair that the folks that drive the trucks have to pay 70 percent more to maintain them, which means that if something stops working, they have to fix it.

I think that it's not fair, because the drivers have to stress to see if they have enough money to fix it. Also, they are the ones doing all the work and taking stuff when they need to go. So the Board should help them out more that way they won't have to waste their money that they've earned.

We can do this by enforcing stronger reporting requirements and start to tackle the issue of the misclassification of workers. We urge you to increase 5 to 15 percent and strengthen reporting.
Thank you.

CHAIR NICHOLS: Thank you.

MS. YESENIA GONZALEZ: Okay. Good afternoon. My name is Yesenia and I'm a youth leader involved with CAUSE from the City of Oxnard.

I'm here today to ask that the Board increases the percentage of sales requirements, so that at least 15 percent of trucks on the road in 2030 are zero-emission, and to voice my opinion on diesel trucks, and that -- and the impact it has on communities like mine; also, how we can support truck drivers, because it is hard to maintain diesel trucks.

Coming from City of Oxnard, I've noticed many people have asthma, when we are in the 90th percentile of asthma rates in the state and have a higher chance of getting asthma. Some of my family members have been affected by the pollution and have gotten asthma, because of the pollution from power plants, pesticides, factories, and toxic waste sites.

Growing up and having to see your siblings gasp for air that isn't all that healthy is horrifying. All I want is for young children to grow and not have to worry about how bad the air quality is or if I'll have trouble breathing today.

I don't want them to ask themself will my kids
have asthma or worse, cancer, as well as it's just going
to be an ongoing cycle bad lungs plus bad air, and diesel
trucks are contributing to these health issues. In fact,
diesel emissions is linked to cancer. They cause a lot of
pollution and are always causing traffic, which increases
more time cars are on doing nothing, and that causes more
pollution, even if it's just for a second.

Also, most of the drivers are not provided with
health care or rights that should be given to workers.
Companies are not giving the rights that should be
guaranteed to drivers and also the companies are not
taking care of the trucks.

Putting that burden on drivers, most drives have
to take the money to maintain the cars out of their
pockets. This is why I'm here to stop the pollution in my
city and to help truck drivers get their rights. I urge
you to increase the policy to 15 percent clean trucks and
strengthen report requirements.

Thank you for your time.

MS. HERREJON: Hi. Good evening. My name is
Ocil Herrejon. I'm from Oxnard also from CAUSE.

And we're here today to urge you all to
strengthen the ACT Rule to mandate that 15 percent of
trucks on the road are electric by 2030, as well as
strengthen reporting requirements. Oxnard, if you don't
know, is 80 percent people of color. Many of our folks are indigenous. And what that means to us is a beautiful and unique culture, traditions, and languages.

Our folks are farmworkers. We tend to lend and grow foods for the country, so folks can nourish themselves, but we are constantly being taken advantage of. Oxnard has been treated as a dumping ground, like so many of other cities around the state. We are currently overburdened by pollution that is putting many of our families at risk. We have toxic waste sites. We have power plants.

We're number one in the state for the number of students who go to schools near the highest levels of the most dangerous pesticides. And some of our neighborhoods are in the 87th percentile of diesel emissions, which has drastically -- sorry. We are threatened by a port expansion, which will drastically increase the number of heavy-duty diesel trucks that will pass through our neighborhoods that are already densely populated, working class, and primarily immigrant families. What that means is we can't afford these health issues that come along with pollution, because our parents and our grandparents are excluded from the health care system, even after working their whole lives in the pesticide-ridden fields.

We cannot afford an increase of diesel emission
in our neighborhoods. And as you all -- and we really ask you all to be ambitious when considering clean trucks for the sake of our families.

As we continue this transition to zero-emission technology, we urge you all to support workers, especially the drivers who are bearing the financial burden due to misclassifying them as independent contractors.

Workers, while making close to minimum wage, are responsible for raising the funds to purchase an electric truck then maintain it.

So we urge you all to strengthen the ACT Rule to 15 percent for electric vehicles and strengthen reporting requirements. Thank you, all.

MR. ARONIN: Hi, everyone. Good afternoon. I'm Ruben Aronin with the Better World Group. And for too many years, we've been in the trenches with our advocate colleagues and California allies fighting federal rollbacks on pollution standards. I'm thrilled to be here today helping to marshal the arguments for moving forward and catching up a bit.

I'm also here to help some folks who didn't get their homework in on time. We did a lot of outreach to get local voices to speak, and you've heard from a tremendous diversity of voices today. I want to represent some mayors, including those from Chula Vista, Culver
City, Davis, Malibu, Norwalk, San Luis Obispo, Santa Barbara, Santa Monica, South Pasadena, West Hollywood, and Huron, and many mayoral staffs that could not get sign-on to a letter, but are anxious to hear about what the Board is doing. These mayors also represent folks who already are taking initiative to meet State benchmarks in building electrification and transportation and they're looking for your leadership.

They all echo many of the sentiments you've heard today. And I've submitted the letter into the record today with their call for accelerating the deployment of zero-emission and medium- and heavy-duty vehicles.

I also am representing Mary Leslie and the LA Business Council and their 500 business members. They -- their membership sees a great opportunity for California to be a world leader in clean energy technology and they specifically are calling for not exempting the pickup truck sales from the '24 timeline. Many companies, especially utilities, use pickups in their day-to-day operations. They're eager to electrify that part of their fleet, but are limited by the lack of EV models. They urge an increase of the yearly and final percentage goals from 24 to 30, and urge setting overarching and weight vehicle class specific timelines for 100 percent zero-emissions. Clarity around that timing is really
important.

Happy to provide you their full comments and thank you for your time.

MS. KOLPITCKE: Kirstin Kolpitcke with Calforests. We would like to echo the comments made by CalChamber, specifically with regards to the large entity reporting requirements. Calforest represents private timberland owners. The vast majority of the trucks we use need to be able to be driven on rough off-road conditions while capable of hauling heavy loads long distances.

There are no zero-emission trucks in our industry. Yet, we are required to report under this regulation. We are often in very rural locations to say the least. And yet, CARB wants to know how many EV charging stations we have at our facilities. We fail to see the benefit that any information we would have would provide to the survey. We are also concerned with the amount of information that is being sought.

Given that survey information is going to inform CARB with regards to zero-emission trucks and a possible mandate on the types of vehicles manufactured, the need for the number of cars and light pickups seems superfluous. The information required for the survey should be as streamlined as possible, making it easier not more onerous on companies looking to provide information
Our companies need to know -- I'm sorry. It was mentioned at a meeting with CARB staff that there was intent to include language to protect companies that complied with the survey, but were off on a number, because they had say 11 instead of 10 deliveries. Language was to be included soften, the enforcement of the regulation for those acting in good faith. This is not in the draft regulation.

Finally, our companies are concerned that this new burdensome regulation, which proposes a fine of up to $37,500 per day could result in huge fines for information that was the result of a company's best estimate. Our companies have been labeled violators by CARB in the past, which incorrectly issued thousands of dollars of fines. It took months of work to straighten out the problem, which turned out to be an issue with CARB's own database.

Ultimately, we're asking for a delay in the implementation of the survey, so that this regulation can be done with more precision, thoughtfulness, and actually address the critical concerns that were raised today.

Thank you.

CHAIR NICHOLS: Okay. That actually concludes the list of witnesses.

And so I think we should congratulate everybody
on having done an amazing job of making all of the points
that have been made here today.

First of all, I guess I want to reiterate the
fact that we're not voting on anything today. We're not
actually adopting a rule today. What we will be doing is
giving the staff some direction about what we want to see
them do between now and the time that they bring this back
to the Board.

Did you want to speak at this moment or just in
the course of -- I mean, we're going to have some
discussion here.

BOARD MEMBER SERNA: Yeah, I just wanted to be
the first in the queue to speak when the time is
appropriate

CHAIR NICHOLS: Okay. You -- I promise you you
will be.

(Laughter.)

CHAIR NICHOLS: You've been absent for a long
time --

BOARD MEMBER SERNA: Right.

CHAIR NICHOLS: -- so you've built up some
extra --

BOARD MEMBER SERNA: That's right.

CHAIR NICHOLS: -- credits here.

VICE CHAIR BERG: He's raring to go.
CHAIR NICHOLS: That's right. I know. Okay. So just to say to -- for all of us to remind ourselves, what we have an opportunity here to do, however, is to give the staff some direction about what we want to see them do. And I think I can say on behalf of everybody, even though I know others will say it in their own words, this entire Board is excited, proud to be involved in something of this magnitude. And we understand that we are the first and that we want to do it right. I cannot imagine that there's anybody who would disagree with me when I say that our goal here is to transform the transportation system. It's not just to meet a target. Although, we understand targets have to be met, and we have to set them. We have set specific goals, so we can enforce them.

But part of the vision of this -- the vision of this is that it's part of a set of actions, including the Fleet Rule, that is being worked on right now, which are designed to get us to 100 percent of everything being zero as quickly as possible, but no later than 2045, which is the goal that's in -- in our Executive Order.

So having said that, we all want this rule to be strong and I think we all have some ideas. We've heard some things today that may help to get us there. And so we will be talking about those in the next few minutes.

But really I just want to reiterate that the
views of the people who are here today, as well as many
others who wrote to us and send us messages have been
heard and are appreciated, and that includes the
representatives of the industry, by the way, who, by and
large despite their concerns about the reporting rule,
which we will have to talk about, have not challenged the
notion that what we're doing has to be done.

They may wish to have it take a little longer, be
a little easier path, have different ideas about how to do
it, but I think we're in a place now where we can really
make some very major progress.

So with that, I want to start by Board member
comments at the far end of the table here with Supervisor
Serna.

BOARD MEMBER SERNA: Thank you, Chair Nichols.
Appreciate your comments before you hear from other
members of the Board. I think they're spot on.

First, I'd like to start by thanking those that
are still present after a number of hours of testimony.
As you can see, we had well over a hundred folks speak on
this critical issue today. And I want to especially thank
the CAUSE folks, the youth, that are still in the audience
that did a wonderful job in their testimony in
articulating what's important to them in the context of
what's before us today.
And as Chair Nichols mentioned, obviously, we're not -- we're not making a decision necessarily today. We are refining some direction for staff. But that, to me, is nonetheless very important. And before I ask some specific questions of staff, I just want to remind everyone too, that this -- it is -- will be a momentous decision when we do make a final determination on the regulations for Advanced Clean Truck, but it's not unlike a lot of momentous decisions that this Board tends to make, as kind of the plow blade nationally when it comes to really challenging the marketplace to evolve and to do so very thoughtfully.

But, you know, one of the things that occurs to me is that this is very much a very delicate balancing act for us, whether we have -- you know, we have half the speakers, many representing industry saying you're going too far. And, of course, we have the other half saying you're not going far enough. That seems to be fairly thematic when it comes to issues before this Board.

And that is somewhat of an indication that perhaps we're at the appropriate place to begin to hone and really focus in on what we want staff to ultimately bring back in terms of final regulations.

So with that, I'd -- the first question I have for staff, and I talked with Tony earlier during the break
is -- and I also mentioned it to -- relative to some
public testimony earlier, is many speakers have really
looked at this from a percentage standpoint. This four
percent versus 15 percent. And as is kind of customary
where we're asked to look at rulemaking, setting
regulations that are intended to affect the market for
EVs, whether it be cars, light-duty, or heavy-duty,
medium-duty, you know, one of the things that I think
probably to a Board member that we want to understand as
best we can is, are what are some of the likely unintended
consequences if you go too far, if you go too -- or if
you are too timid in really trying to achieve that
objective.

So I'd kind of like to hear from staff about what
they believe they might do between now, the time that
we're giving for the direction, the time that this
eventually is adopted, in terms of better informing both
the Board and the public about what some of those
unintended consequences would be, for instance, if we were
to take a much more aggressive stance, position in terms
of trying to start at a -- with a higher bar in terms of
that percentage?

And I don't know if that's clear enough for staff
to be able to respond. But, for instance, one of the
things that I'm thinking about is the eventual secondary
market, and this is somewhat long term, for electric heavy-duty tractor rigs that eventually could be available to especially the smaller trucking firms that at a reduced cost. And, you know, you need to ignite this at some point.

So, you know, where do -- where do we -- where do we think -- why do we think that four percent, or ten percent, or 15 percent is the right way to go relative to not excluding the ability of firms to meet that mark and put them at out business versus addressing many of the health impacts that many of the advocates spoke to here today as a justification to start with 15 percent?

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:

Yeah. Let me -- let me start that. This is Jack Kitowski.

I think in answering that question, it's also important to characterize how we were structuring this as a two-part rule. And reemphasize that, that this is -- the first step here today is making sure the manufacturers are producing vehicles in significant volumes, but -- and that is the objective is to make sure the large OEMs are coming into the market, but we always considered that a floor and that the volumes would increase as we look at the fleet rules. But what we wanted to understand as we're going through those fleet rules is, you know, where
can we push harder, where do we need exemptions, how to structure the timing, but knowing we had flood there to build off of gave us that leverage.

When we put together our estimates of the percentages that you see in your proposal, we used the best available information we had at the time, breaking down the heavy-duty sector into 87 different segments and analyzing those. But even as we did that and locked down those numbers three or four months ago, then we go and we see announcements by, you know, Tesla, that they have a new cyber truck. And we just heard from them in their announcement that that, in fact, will be a 2b/3 pickup truck.

And we hear from Rivian -- or Amazon, purchasing, you know, a significant amount of Rivian trucks since that time. So dynamics are changing quickly. And I'd say the first -- the first order is, you know, those numbers can be looked at again and there may be some opportunities there. I would also though get more precisely into your question, say some of the areas that we're concerned about, if in fact, we push too hard, especially the early years are the ones that we have a lot of infrastructure to put in. And, you know, right now we have a couple of thousand vehicles on order, less than half of that, you know, a few thousand that we've ordered, and not that many
that, you know, actually on the road.

And so we're moving very quickly into -- into tens of thousands of vehicles. So the infrastructure is really critical, making sure manufacturers work out the kinks is really critical. We were sensitive about -- we mentioned small fleets -- placing these into small fleets for two reasons. You know, if they can accommodate them, great. But, in general, small fleets have more challenges with higher upfront costs and how are we going to deal with that.

And they also just have general -- generally less operational flexibility. If you have a hundred vehicles, you can have one combustion vehicle that needs to do a long route. If you have five, you have much less ability to figure out how to do that with your fleet. So those were some of the concerns we had in those early years.

BOARD MEMBER SERNA: Is there anything from staff's standpoint that you heard from the ample testimony today that gives you any stronger sense that we need to better understand some of this -- kind of this elasticity relative to -- especially the smaller -- the smaller firms and how they would be able to absorb the initial capital cost and an investment in EV across the various different types of vehicles, medium- and heavy-duty?

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
Right. Exactly. And that's -- that is -- that is an area we knew we needed to investigate. And that was part of planned fleet rule development over the next two years.

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

CHAIR NICHOLS: Okay. Dr. Sperling. We could just go in order, I think, if -- unless -- I think we should just go down the -- down the row in order here.

Go ahead, if you have thoughts.

BOARD MEMBER SPERLING: So as I said before, this is a hugely important, and I would add hugely ambitious, proposal, and I strongly endorse it. I know there's a lot -- a lot of people are pushing for something more aggressive. And let me address that, why I think this is at least as aggressive -- this is as aggressive as we should be going at this point. And let me just focus on the total cost of ownership, because we've heard various people say these trucks are going to be cost competitive very soon and even the staff report says that.

But I do know a little bit about total cost of ownership analyses and I did go through it. And I would deem that this one, as well as others, is highly optimistic. I'll just go really quickly through it. This analysis assumes 12-year life for the batteries. Well,
maybe. It assumes a 12-year payback. You know, companies
don't -- none of us work on 12-year payback. So it's nice
say sigh, but the reality is that creates a huge cost
burden on companies that are being investing -- it's a
large upfront capital -- extra capital cost.

It assumes a hundred mile range. Well, you know,
those of us that have had electric cars, we know what that
means. You know, if you're -- if the weather is bad, if
there's a lot of hills, it's going to be much shorter.
There's going to be degradation of the battery over time,
especially if we're talking 12 years.

So the staff did use 30 percent, but some
analyses that I've had some of my researchers look at and
do their own calculations come up with much higher -- the
need for a much higher buffer than that. And so
therefore, the hundred miles becomes much bigger and
therefore the battery size becomes much bigger, and
therefore the cost becomes much higher.

So -- and then there's other assumptions like Low
Carbon Fuel Standard. You know, there's an estimate of
$7,200 coming back. Well, you know, for certain fleets
that run a -- you know, that actually have a large fleet
operation and have a charging operation, you know, that
would work. But for many, they won't be able to get that
LCFS money. There's electricity price.
You know, there's demand chargers. You know, there's a lot of cases where these prices might not be what we hoped that they will be. So I'm just making the point that these costs, these total costs of ownership numbers that everyone is doing, you know, including our staff are, let me just be generous and say, optimistic in terms of cost competitiveness.

So a couple things I wanted to say more about the actual -- the purchase mandate part of this. And that is, we heard a number of people talking about the beachhead concept. And I really think we should be giving some more thought to that, because there are many of these fleets where it does make a lot of sense. Many -- it's going to be much harder. And, you know, I know we have credit trading going on, but some companies only specialize in certain types of trucks. So -- so I think we out -- so it's a concept worth pursuing.

I can't confirm this, but I was told that there were a few people that testified about plug-in -- by a plug-in hybrid version. And I understand that they disappear -- the credits disappear after 2030 the way it's proposed?

MSCD TRANSPORTATION AND CLEAN TECHNOLOGY BRANCH

CHIEF BRASIL: Yes.

BOARD MEMBER SPERLING: I would strongly suggest
that's not a good idea.

MSCD TRANSPORTATION AND CLEAN TECHNOLOGY BRANCH

CHIEF BRASIL: The credits that were earned will continue for five years, but no more credits would be generated after 2030.

BOARD MEMBER SPERLING: Right. I think that's a mistake. I mean, maybe the amount of credits can be reduced. But, you know, the reality is we're hoping batteries will keep getting cheaper. You know, we're hoping on a lot of things, but -- and hopefully most of it will come true. But plug-in hybrids, there's a lot of -- you know, you have these big vehicles and having these big battery backs in them. These are massive battery packs we're talking about. They're heavy. They're big. And there could be a lot of creativity where -- with a plug-in hybrid version. It could be done in a way that is geofenced to be zero-emission in EJ areas and so on. So anyway, I just, urge that that be rethought.

So that's my thoughts on the purchase part. And then on the reporting part. As a few of us have discussed, I think it's urgent that we do the fleet man -- the purchase mandates much sooner than what we're talking -- much sooner -- having them done much sooner than 2022. I mean, here we are telling these companies to sell all these trucks. And they're coming at it and
they're saying, well, are people going to buy them? They're going to be more expensive. And then we're not sure there's going to be incentives. And, you know, we're uncertain about the charging infrastructure.

So, there's -- I think it's not fair. It's not fair to the manufacturers to delay that mandate so long. And what that means is figuring out how to do -- to -- to devise that, and design it, and adopt it much faster. And some of the thoughts, like Chair Nichols and I were asking CTA and the construction industry to help us streamline it, do it faster, because to me a lot of it is some people would use it -- call it a shotgun approach. I'd call it a fishing expedition. You know, that think set of questions. That's a lot of information being asked for a lot of companies that typically don't deal with these kinds of questionnaires.

So how can we streamline it? And I think the answer is we figure out sooner rather than later what these fleet mandates are going to be like. So I would say let's get together. Let's have more conversations. Let's figure out what we want to do. And then we can refine it a little bit with the surveys as opposed to using the surveys as -- the questionnaires as just kind of collecting all this data and then we'll figure it out. You know, with my researchers, you know, there's a
tendency nowadays with big data, you know, let's just get the data and then we'll figure out what the hypothesis is.

(Laughter.)

BOARD MEMBER SPERLING: That's -- in many cases, it's not a good idea. I think in this case, it's especially not a good idea.

So that's -- so that's why I just urge. You know, figure out how to -- how we can do these fleet mandates much sooner, and figure out how to be more strategic about it up front. Because at the end, I know a lot of the effort is to find out about these contract services and so on. You know, okay, that's important, but there's a lot more at stake here that's more important to get at.

Thank you.

BOARD MEMBER GIOIA: Thank you, everybody, for all your input and for those that have stuck around.

I think where this agency has been successful the most is when it sets very aggressive and bold goals and the technology has moved along with that to reach that goal. And we've had a lot of improvement in the technology. And I actually -- I have confidence of industry that they will be able to advance the technology to achieve even more aggressive goals. I have confidence in the manufacturers and industry that they can achieve
those goals.

So I think we should think about how do we set a bar that's higher than what's in the proposed rule so far. I'm not sure what that is. I think we need to discuss. You know, we want to set something that's also -- that's aggressive, but realistic. And there has been some discussion -- you're calling it the beachhead. I guess a few people have called it that.

But there were comments by the representative from the Truck and Engine Manufacturers association that did talk about specific categories where at least they believe that we could reach 100 percent total market ZEVs by early dates in the early and mid-2020s. And so I think that is worth looking at, but not just stop in these areas. Are there other opportunities in other categories where we can do the same thing.

So I get -- he's defined news school buses, municipal fleet step vans a hundred percent by 2023, a hundred percent of new public utility vehicles and yard tractors a hundred percent in 2024, new step vans a hundred percent in 2025, same with airport. Well, we've done airport shuttle, but non-airport shuttle.

And then actually I found interesting refuse trucks by 2026. And it occurs to me, you know, a number of highly impacted communities, like the one I represent.
in Richmond, it would sure be nice having zero-emission refuse -- refuse trucks rolling through our communities, rather than the dirty diesel -- noisy dirty diesel trucks. And, you know, in many communities, it's more than one truck that comes through, because it's different trucks for recycling, and composting, and garbage. So actually sometimes you get three trucks rolling through on garbage pick-up day, not one. So imagine if they're all quiet zero-emission vehicles coming through highly impacted communities.

So I'd like for us to sort of think and explore about sort of building on the concept that the manufacturers talked about, but looking at all also how that may apply in some other categories as well.

You know, if the staff believes that more aggressive new purchase requirements could make some sense, I'm also open to hearing that. So my message is how can we strive to do more than what we're doing and what's the best approach to be there, because I think ultimately we've shown with these aggressive goals, the industry is innovative and reaches this technology goal. And I'm confident that that could happen again, if we're realistic.

BOARD MEMBER FLETCHER: Thank you.

A number of us up here lived through -- we were
in the Legislature when we did the RPS standards. And a
number of the concerns that you hear when you talk about
items like this are almost verbatim the concerns we heard
then, which is this isn't possible, and we can't get
there, and it's too soon, and it's too hard, and it's not
going to possibly happen.

But when we passed that first one, what we saw
was that by setting an aggressive goal and a bold goal,
you essentially created a public market that folks figured
out how to meet. And not only did we meet that initial
goal, but prior to meeting that initial goal, they came
back and upped to goal and continued to see progress.

And so I'm not unsympathetic to the concerns of
folks who say this is really hard. But when we're talking
about a 2030 goal, we're talking about something that's
more than a decade away in an industry that is vastly
changing. And if we are not more aggressive in setting
our targets, and we are not more aggressive in setting
goals for things that are a decade from now, then I think
we're missing out on the potential to create that market
force.

And so I think that the notion that you could be
at 15 percent a decade from now is something that is
achievable and something that is doable.

And I think that if we set those markers too low,
then we are missing out on the tremendous opportunity for a market the size of ours to really essentially create that market. And I think, you know, it's something that if you get down the road and it's just an insurmountable impossible thing, then there's always an opportunity to revisit. But you can't revisit being more aggressive in casting the goal of where we want to go.

And if we miss that mark on the low side, we're going to have a tremendous lost opportunity, both in terms of the economic opportunities, but particularly in terms of the environmental opportunities.

And so I think getting to a hundred percent eventually on all classes is something that we should throw out. I think the conversations around 15 percent are something that a decade from now certainly appears to be doable in an industry that is changing so rapidly and so fast.

On the segmenting parts, I understand and I think that can be a part of it. Maybe, there's different classifications or categories of certain things that can get their sooner than others. As someone who has an AB 617 community that has tremendous impacts on air quality, the acceleration or advancement of those in ports or those surrounding our areas that have the biggest environmental justice issues also seems to be like something that we
could prioritize and something that we could look to help
incentivize in a greater way. And so I support all of
those.

I also was particularly struck by the disconnect
at times between the manufacturing and the purchase. I
think that aligning those better really does also help
create that market. It sends those signals that this is
where we're heading and people begin to put in place
things. But you don't want to leave the manufacturers
hanging with a requirement that they produce things that
does not align with the requirement that people have to
buy them, because then again it's not as likely to achieve
the outcomes that we want, which is cleaner air, lower
greenhouse gas emissions. But it also places an undue
burden on one side of the market and not the other side of
the market. And so I want to echo those comments that
were made.

On the reporting requirements, I -- I was really
struck reading the UC Berkeley study that came out in
August that looked at the Truck and Bus Rules and the
compliance rates as it varied between different segments
of the trucking industry, segments of the trucking
industry that have employees, and segments of the trucking
industry that have contractors.

And it was a noticeable difference, a 61 percent
versus an 83 percent compliance, which I think is easy to understand when you look at the economics of those two business models in the trucking sector. But I also think it should inform our thinking of where we can get the most bang for our buck in terms of what we're doing.

And so I think looking at the possibility of greater incentives for those trucking companies that have employees, because we know that they have a higher compliance rate, we know that they may be able to get their sooner, they may be able to get their quicker, is not only incentivizing something that's in the best interests of the environment, it's also incentivizing something that's in the best interests of the California economy.

And so given this is an industry that is in such a state of flux and transition, I think the more data that we can get, the better we can inform our decision-making and really understanding this industry that we're going to be intimately involved in for a long time to come. And that includes, I believe, I would lower the number of trucks that have to be -- in terms of those that comply with the reporting requirements. I think that it should be broader.

I think that if we're committed to achieving these goals, then we should be committed to understanding
the entirety of the trucking industry, and not just the large entities. And so I think being more diligent with data, more diligent with the trucks, the types, the hauls, and more aggressive on the firm size threshold, we'll better inform our understanding of the industry in terms of future regulatory actions, and also better potential opportunities to incentivize the outcomes that we want.

And so those are, in summary, the kind of key points I think that we really should -- should consider as we move forward with this.

Thank you.

BOARD MEMBER DE LA TORRE: I think the really important thing -- I agree, you know, that we do need to be as aggressive as we can be and more aggressive in general. But the -- but the -- I think the key thing is availability as of right now. We're at the very end of 2019 and where are we right now?

Unlike some other goals that we've set for ourselves, most of the time we have some semblance of the thing that we're pushing. In this case, in some of these categories, we don't. And so I think that's very important. We have -- currently, we're supporting no less than seven major manufacturers who are doing either fuel cell or battery-electric heavy-duty trucks that are being prototyped at the ports in Southern California all major
manufacturers. These aren't startups. And not to
denigrate startup. But, you know, those folks have
financial power, the wherewithal to actually bring these
heavy-duty trucks to market, but they're prototypes.

And so we're not there yet. I -- you know, from
what I'm hearing, mid-2020s commercially available
heavy-duty trucks. I'm talking 7 -- you know, long-haul 7
and 8s. So we're not there yet with those clearly.

The 2b and 3, and the 4 through 8 in various
levels of availability. And so I think we need to be
aggressive on the ones that are available now and push
hard -- harder on those at the outset and anticipate a
slower glide path for the heavier duty ones that just
aren't there yet.

So somebody mentioned, you know, the Tesla as
a -- the Tesla pickup truck as a model. That truck, if it
comes to fruition, is -- is not coming before 2022 at the
earliest. That's their estimate. And so Ford F150
electric, they're talking 2022, 2023 at the earliest. It
just doesn't exist right now. I mean, there's a lot of
press releases and cute videos and whatnot, but the truck
is not available.

So I think we need to be conscious of what's
available today and doable today, if it's trash trucks, if
it's some of these other vehicles that can be done today,
then we go all in with our incentive dollars, all of it, and try to push those out there. And then as those others come online, then we push those as well.

So I think the timing of all of this comes along. And so for that, I think what I call an on-ramp, not an off-ramp. We usually do off-ramps on our regulations. We need an on-ramp, where we will come back. We will commit in this reg to come back in a couple of years and see where the lay of the land is on all of these different types of vehicles and the commitment is the ratchet up in certain areas, not get off, not ratchet down.

And so I think we need to incorporate that to send a signal to the public, to the manufacturers. We're coming back and we're going to -- we're going to step this thing up as we see what's happening at that given time, two, three years out. I don't know. Whatever people are comfortable with.

The goods movement calendar, all of our regs, which were shown on one of the slides, you know, that's my Bible for the next three years.

(Laughter.)

BOARD MEMBER DE LA TORRE: And so the truck fleets in '22, I agree we need to move that up. Drayage truck in '22, I agree we need to move that up and put both of those on a fast track. We're doing all this other
wonderful stuff on goods movement. But on those two, we need to -- thank you. Those two we need to move up as soon as possible. And I'm not going to throw a date out. I'll leave that to you over the time frame that you're going to be repackaging all of this.

I think that's important for the public to know and that we again push harder on those two, because, you know, this is all a virtuous cycle.

On the reporting just -- I think repeating what some folks have said, we need to have the information in a reasonable time relative to this reg and like starting in January doesn't seem fair, because we're not going to have the reg until, you know, sometime in 2020. So I just don't feel like retroactive is -- or prospect -- whatever that is. I don't even know what that is a in time frame. It just doesn't sound fair to me. And that we have just the data that we really, really need for the purposes of what we're doing here.

I agree with Supervisor Fletcher about reducing the threshold. A hundred is very high. We need to bring it down to - I don't know what the number is - 20, 25. Some number that gets -- gets us more to who's out there, what kind of trucking firms are out there, what they're doing. I get it's a pain to go to smaller entities. But if we were going to reflect what's really out there, we
have to get down to that lower threshold, smaller
companies, and see what they're doing, what they have, et
cetera.

So those are my comments. Thank you.

BOARD MEMBER TAKVORIAN: Thank you. I want to
thank everyone who's not only here today, but thank you
all for -- all of you who are today, but everyone who's
been participating in the process, because I know it's
been lengthy. And so everyone who came from communities
all over California today, I really appreciate you being
here.

I have to say that I feel like there's more
agreement between at least the environmental justice
communities, environmental justice organizations,
environmental organizations, air districts, labor
organizations about the direction we need to go. And I
think it's clear that we need to strengthen the rule.

Manufacturers are saying we can go farther
faster. So that seems contrary to some of what we heard
in terms of the staff proposal. So I think we should take
that as a good sign. Hopeful, positive that we can
move -- move faster.

And I think we're at a turning point. We've
talked about this having worldwide impacts. And yet,
we're still acting in kind of a timid way. We have this
opportunity. The time is now to adopt a strong rule and
drive the changes that we know we need. Four percent in
ten years is not going to cut it. It won't meet any of
the State goals that we have. It doesn't meet the port
goods that we have. It doesn't meet the local climate
plan goals that we have. So that's where we need to
start, at least with the State goals of zero emissions by
2040.

I mean, that, to me, should be where we -- what
we look at first and say so what do we need to do to get
there and then we can say, well, so we don't get there,
because of the feasibility. But we've got to look at what
the path looks like, in my mind, to get there by 2040.
That's -- that's the map I want to see in the next rule --
in the next version of the rule, so that we can prioritize
then. Not to say, well, we can't do it, so let's not look
at it. And that is a little bit of what I feel like we're
saying right now.

And I think it's really that we need to set
targets based on where we need to go and not based on
where we are. And I feel like that's what we've done as
CARB previously very successfully with the -- with the
Transit Rule, with the light-duty, the airport shuttles.
And so that's the model we've used and I think we need to
continue to use that.
The opportunity seems to be now. With the number of port trucks that are turning over according to the data in the next several years, we don't want to be timid on this rule and let a whole new generation of port trucks go forward in disadvantaged environmental justice communities that will then be around for the next 10, 15, 20 years. That seems like a huge mistake and really backing off on the obligation that I think this Board has to our communities.

So I also think that a stronger rule is really, really necessary, not only to meet the goals that the ports have set, but the 617 communities as well. Last week, many board members were in West Oakland. We approved the Community Emissions Reduction Plan that's heavily dependent on heavy-duty reductions. And I can guarantee to you that almost every Community Emission Reduction Plan is going to be reliant on this rule. And they're reliant on the shore-power rule that we adopted as well or moved forward on this first hearing last week.

So we have -- we have to look at what our obligation is to those communities, because they need this rule to go forward. And speaking as San Diego resident, with the portside communities that are identified in the 617 program, I know that that will be an element in our Community Emission Reduction Plan and will be in most of
the others.

There's no question about it. I think that they are -- they're counting on CARB to come forward. So I have seven ideas for what I think ought to happen.

(Laughter.)

BOARD MEMBER TAKVORIAN: So this is -- the first I've already said. I think we need to articulate a clear goal of a hundred percent zero-emission by 2040. And then we need to, secondly, create a manufacture, and sales, and purchase timeline that achieves that goal with the benchmarks at key points during the implementation, like every two to three years.

And then we need to look at what that's going to cost obviously. So it's a timeline, it's benchmarks, and it's cost that go along with it. I do think that we should meet with the - third - meet with the truck and engine manufacturers to identify the sectorial approach as part of that second recommendation. But I do think we ought to exhibit some caution with that.

It would be great to have the three refuse trucks that go through our neighborhoods a week be zero-emission. But that's compared to the 600 trucks a day that are going through other people's neighborhoods. So there's no contest, in my mind. We really need to focus on those -- that volume of heavy-duty trucks that's going through
people's neighborhoods.

And really importantly, I think we need to prioritize the trucks that are serving the ports and the distribution centers to be 100 percent zero-emission by 2035 to comply with the already existing Port and Clean Air Plans and provide relief to the most impacted communities. And if we can do it faster than that, great. But that seems to be the number that's out there at this point.

I would consider supplementing on reporting -- the reporting requirements by utilizing existing data and contracted services to secure the use data. I worry about their being this struggle between what the data we need, and how we get it, and people not complying. And I think we've got to go out and get it. But I also think we use modeling in air quality regulations all the time. So let's use some modeling in regards to how we get data about fleet usage and that.

I think we really need to include in the reporting securing data on the misclassification of employees in rule development and really pay attention to that element as we move the rule forward.

And then lastly, setting a goal of adopting the Fleet Rule by more like mid-2021 effective in 2023, if we can get there. But again, that's reliant on the
overarching timeline.

So those are my recommendations.

CHAIR NICHOLS: Okay.

VICE CHAIR BERG: I'm going to build on both what Hector De La Torre and Diane just said, but I'm going to start with the reporting and data gathering. I'm going to respectfully disagree that bringing that down to 50 that I worry that our intent was to truly go after the companies that could afford to get this out there, get done, get it adopted and build that secondary market, that those others so clearly need in order to be successful. They need to buy those used EV trucks.

And already today, we have people coming and testifying about one and two truck owners. We aren't even talking about one or two truck owners yet. And so I worry that as we start these Fleet Rules that our hearing room is going to be overflowed with people that are legitimately concerned, but we're not talking about that yet.

So I'm not quite sure how to, Mary. I agree we need the information, but when we need the information and setting expectations I think is really, really important. And so I'm sure we're going to have a lot more conversation about that.

I think the penalties should reflect what you
want -- what do you want people to think? There -- the level of penalties that you set is going to be the level of clarity that people are going to keep coming back to. And so I would look at that.

I'm willing to fill out your survey right now. You could send it over to me Monday. I have trucks. I have trucks that I receive every day and I'll have my people fill it out. Yes, I'm much smaller than what you want to go after, but let's start. Let's see how difficult this is and happy to communicate that back. And I'm happy to attend a workshop as you go after to get the information from our industry folks. So that's my input for you on the reporting data.

I would like to advocate for a dual strategy. I do think that there are -- that we can accelerate in certain areas. And if we could focus on those areas, I think we could do it sooner than later. And so if we're looking at some of the -- the -- not only the categories, but the types of trucks, the port trucks, the buses, the shuttles, the cargo vans, the last mile.

School buses is wonderful to put in there. We just know they can't afford them.

Government. You know, there's no reason that government from city to State shouldn't be on board on those trucks that are, what I'm considering, electric
ready. And again, as you said, the sectorial approach, but I absolutely agree that we need to focus on our CalEnviroScreen and EJ communities.

You know, I think about the trucks that are out of compliance and I wonder how many of those trucks are in our EJ communities. And so what's the expectation? How are we really going to make a difference in these communities?

And I think we need to spend some time talking about that. So how quickly could we get to a hundred percent as Ms. Takvorian suggested in some of these electric-ready areas, and how can we track the number of zero-emission trucks that truly are benefiting our CalEnviroScreen communities. I think that's a really critical thing right now.

Parallel path truly would be then to look at the remaining truck categories in determining are we at the right level. And what are we going to need to have a secondary fleet rule?

I would write two fleet rules. I would go after a fleet rule today that you could put together quicker, that would focus on these electric-ready, or this beachhead strategy, because I think we know a lot more about that than we know about the things that aren't ready. And so maybe you do need to really, truly run a
dual path.

And so I'm excited about the acceleration. I do think we do need to understand flexibility, not an off-ramp, but verifiable time -- verifiable timing issues caused by infrastructure, and including permitting, and the only question I had for staff is I didn't truly understand the issue around the ultra low NOx definition, other than there seems to be a lot of them floating around and how that really affected. And so maybe someone can get back to me about that another time, since we're running late.

CHAIR NICHOLS: Okay. Mrs. Riordan.

BOARD MEMBER RIORDAN: Thank you.

Let me just piggyback on Ms. Berg's. I certainly agree with you about not lowering a level for reporting. I do think you need to work with the affected industry to get the information that you need but to be mindful of how much time it's going to take and the accuracy that they're going to be able to provide. And I do think the larger fleets have the consultants or the people on staff that can get you that information.

Mr. Mandel, I guess we're going to work with you a lot, because we want to take you up on some of your offer of how to move this around and get some early action items.
I just would like, and I'm trying to be sure that I understand, we are considering, as we move things forward, the infrastructure. And I will never forget going to United Parcel in my area that changed their fleet to electricity, and it was wonderful. However, the cost of the infrastructure was tremendous. And so I think we can't miss that factor.

So as we move things around, and we accelerate them, there has to be the infrastructure to make it all happen. And it can be costly, and it can be very difficult. I think we now have our organizations that provide electricity to work with us maybe a little bit more than might have been a few years back when we dedicated that United Parcel facility.

But I can tell you there's a cost that is significant. And I want the Board members -- it's not all involved in the new truck or whatever, there is a tremendous cost. And any of you who drive your, you know, electric vehicles, you know, that if there's not enough charging stations when you're traveling, and somebody else is there, and, you know, getting a charge, you're in deep trouble. You have to wait for that person. Well, if you're in business, you can't wait two hours while somebody else is charging and there's a queue back to maybe three or four trucks. So we've got to think about
that. And that's all I have.

    Thank you.

CHAIR NICHOLS: Okay. Dr. Balmes.

BOARD MEMBER BALMES: So I want to start off with a brief story. My son, a senior in college, was fortunate to attend the COP25 conference in Madrid, the first week. And he came back -- I mean, he went there as a climate activist and he came back even more active. And he said, dad, you're on the California Air Resources Board. You have to do more.

    (Laughter.)

BOARD MEMBER BALMES: So with that said, I do think we have to be aspirational, but I also think we have to be practical. And so I'm going to highlight where I agree with my previous Board members, because, A, the time is late, and B, most of them have said thoughts that I agree with.

    So one thing I would agree with Professor Sperling, we have to be careful about the questionnaire that we're -- I'm totally fine with us having reporting, but we should tailor that report as much as possible. I do question -- I'm very involved in my own research with questionnaires to people. And the longer they are and the more unclear the information value is to the people filling it out, the less compliance you'll get.
And I really think we need to take up the offer of various industry folks about working with them to make a questionnaire that's going to be complied with wherever we set the reporting mark for. And I can't say that strongly enough. I just think that, yeah, if we go after data mining, it's going to be a failure. We won't get what we need.

I also agree with multiple Board members about this -- being enthusiastic about the sectorial approach, where we can get, as the industry says, Mr. Mandel suggested, we could go farther in some areas than we're -- the staff is proposing, but maybe be more careful with regard to the heavy-duty tractors that we all want. I totally agree with Ms. Takvorian, we need those tractors to help the disadvantaged communities, but we also can't -- and so we need to be aspirational. We need to be technology forcing. But I don't think we want to go too hard too fast.

I don't know the answer. I think we just need to be very intentional about that. But I like the sectorial approach, because I think we can help those communities if we're careful about working with industry to get cleaner trucks in certain sectors faster.

I also like the suggestion of both Ms. Takvorian and Ms. Berg about trying to target where we can help
disadvantaged communities. And I think one area that
that's really pretty obvious is the drayage truck -- I
think we should push the drayage truck market as much as
we can.

And I like Ms. Takvorian's overall concept that
we should figure out what's the path to our goal and have
milestones along the way, as opposed to just say what we
can do now, and sort of guess what will be -- you know,
what our milestones should be in the future. I really
like that as an overall strategic approach.

And then I just, you know, finally would say that
I heartily agree with Ms. Riordan about the
infrastructure. I think we didn't talk enough about
infrastructure today. I am one of those battery electric
vehicle drivers that is frustrated continuously about the
lack of availability of charging stations. At my
hospital, Zuckerberg San Francisco General, there have
been four stations for, you know, I don't know, seven,
eight years. And I've watched while all my fellow
physicians and staff at the hospital are buying battery
electric vehicles.

And, you know, there's three, four people can
charge those at a time. It's just ridiculous. And I fear
that's going to be even more of a problem as Ms. Riordan
said for commercial fleets. I mean, maybe we're making
good progress with infrastructure for commercial fleets. But if it's anywhere near like we were with passenger vehicles, I think -- I'm not so sure. So I want to be convinced that we have the infrastructure there. And then finally, I agree with other members who have said that we can do more with fleets faster. But maybe there should be a bifurcation of fleet size. I'm totally open to that.

Thank you.

BOARD MEMBER FLOREZ: Thank you.

I'll try to be brief. I took a lot of notes during the hearing. But I think just generally maybe to put it in context, I asked a lot of questions during the break of various people. I asked our Executive Director about this 15-day rule and trying to figure out what we're actually doing here today. And I think the Chair laid it out. We're not voting today, but I would like staff to pay careful attention, because we are supposed to be giving some direction to the fact that this Board is very divided and we are going to be taking a vote on this soon.

So I would say that because a Board that's rarely divided is divided means we have a lot more work to do. And staff has a lot more work to do. It basically is saying that some of us aren't convinced. And, you know, I would say that if -- for staff direction, I would go back...
to what Supervisor Fletcher started with, and that is one standard of going to the Berkeley study. And as I remember, the Berkeley study says if we're going to get to a hundred percent by 2045, and in some sense we're going to need 20 percent.

So this whole 15 percent discussion to me has been almost a compromise. You know, I really feel like if we start with the Berkeley study and we really have staff convince us by looking at that as some sort of benchmark that it really is not achievable, I'll feel more comfortable. But I really feel like not having a benchmark and not looking at a study like that kind of leaves us to listen, in some way, and in some context of how our people are forecasting the market.

I'd also like to say that, taking out my vote counting legislative past, which is signaling to staff hopefully, if you want to get the majority of this Board, I think, on board by the time we do vote on this, there is a lot of work to be done.

Let me put on my business hat for a moment, and that is that we're not going to have a strong fleet rule, unless we have very strong manufacturing requirements and a much higher, stronger manufacturing target. You know, people -- as I remember it, countries really do well when we push hard on the manufacturing side. So it feels like
to me that, you know, I understand the distinction between technologies that are in play now, technologies that are coming, and technologies that are somewhat speculative.

But I also know that when you put that in some sort of matrix with how fast technology is increasing -- again, I'm going to talk about Nathan Fletcher for a moment. You know, when we debated that RPS standard, no one would have ever thought that the falling cost of all of those factors from solar to batteries -- I mean, this is an amazing time in our world where the cost of everything, particularly in the renewable side, is falling so quickly. We would have never guessed that debating that particular rule then.

But I would say that it's hard to look at manufacturing and somehow not bring into the fact that these costs are falling very quickly. So I would hope that, you know, we could have a little more of what those costs look like. I know we talk about total cost of ownership, but there's also health, and whole bunch of other factors that need to be put into that context.

But I would just want to strongly say that unless we're focused on the manufacturing side, that is all kind of a moot conversation. We're not going to have a very strong fleet rule. We're not going to signal to the markets.
And, Dr. Balmes left, but he said something on break as well, and he says let the engineers engineer. Let's just set the high standard and let's make sure that the engineers are doing what they do.

And I feel like this Board has always been that. I've always admired the Board, even when I was in the Legislature, that somehow, you know, Mary Nichols would say this lofty statement and somehow it would come true. You know, like things are going to happen in 2020, or 2030, and 2040, and somehow, they happen.

And it happens, because I think you have vision, you have leadership, you set the standard -- you set the bar very high, you challenge. You know, in someway, I feel like this is that moment for us. And one last person I'll mention on the Board that I really enjoyed her comments and we did meet with staff was Diane, who said something that -- very powerful and that is she couldn't go home to her community with a yes vote on this, unless this changes, because those who are impacted by this truck rule at the very heart -- so the Central Valley, where we have numerous inland ports, numerous amounts, not just San Bernardino, but numerous amounts of trucks that are moving into the valley and people have quoted -- we're quoted today, the communities. I admire them coming forward.

You know this is one of those votes you just have
to look people in the eye when you go home. I mean this is really, really one of those true votes that has a true impact. I think this might be the most important thing we do in the next year.

So I -- you know, I definitely would say that staff to work harder. And, Jack, I know you work hard. I know the staff works hard, but I would say that, you know, count votes, look at how to get the majority there, work harder, think harder. You know, and I know folks are looking at today, but we'd ask you to look a little bit more into tomorrow, look at some of those falling costs, look at those manufacturing pushes, try to figure out how to get to, you know, something near 20 percent, and if you fall at 15 percent, good for you. But I still feel like that's the compromise. I think we have to push as hard as we can, being realistic, yes, but at the same time knowing that things and the technologies are changing so quickly.

And that's all I have to say. And I really admire the Board for taking this debate on. This is the first in the world. We just don't want to end up somewhere in the community's mind that we didn't really come through for them from a pollution perspective. And I think that's the name of the game of this whole exercise is that pollution reduction.

BOARD MEMBER EISENHUT: So I'm going to adopt, I
think, the Dr. Balmes method and refer to other comments
made by members.

I'll start with the timing. And we've mentioned
several times the 1940 -- or 2045 target. And from a very
personal perspective, in 2045, I will be, or could be, a
hundred years old. And so that is a dangerously proximate
time to me. It doesn't seem like it's that close, but it
is very proximate. And so I am one of those who is
aligned, and I think I closely align with Mr. De La
Torre's comments about pushing the envelope with a
specific eye toward what we know about the current
available technology.

On the survey, it needs work. I absolutely
embraced the need for the data. I don't think we're
refined enough in our thinking about how much we need. I
think comments have been made about the longer the form,
the more data we seek, the less likely we are to get
meaningful and good information, the more pushback we're
going to incur.

And piggybacking on Sandy's comment, is it -- is
it possible -- we heard from -- we heard from every
industry representative who spoke today, that they would
embrace and work with us on this survey.

So is it possible that as a first cut through the
survey we could do a sample survey, let the industry reps
decide who gets the short straw, do a sample survey, see how it goes by industry, and fine-tune -- fine-tune the survey methodology. I just throw that out there as a possibility.

I think we've been entirely too casual about infrastructure. We have substantive funding for vehicle light-duty infrastructure. Our success has been frankly disappointing. And I think as we look at infrastructure, we need to evaluate the barriers that have occurred with regard to our current push for vehicular charging stations which I think have largely accrued or partially accrued to zoning kinds of restrictions. We need to be prepared and have a plan to reach out to those entities in order to enable heavy-duty charging infrastructure. When we were at the Port of Oakland last week that was one of the number one issues that restricted the port from converting to a more electrified fleet. And I didn't hear that much about infrastructure when -- in the presentation today.

And I'm hopeful that we will have resolved these issue, vote tomorrow, and have a plan that the Legislature consider -- can and might consider funding as appropriate in this budget cycle. So -- and I would encourage us to be prepared to reach out and share this event with the Legislature, so that they can be involved. I think that
concludes my comment.

Thank you.

BOARD MEMBER SHERRIFFS: Thank you.

Wow, five hours of testimony.

(Laughter.)

BOARD MEMBER SHERRIFFS: Six hours. This was terrific. Well, it's been terrific when we -- when we look at the engagement, we look at the communities that came, Fresno, Inland Empire, Central Valley, South Coast, Oxnard, East Oakland, Imperial Valley. You know, these are the communities living the challenges of the CalEnviroScreen. And they are the communities that are living the direct immediate effects of these dirty trucks that we're struggling with here. So very appropriate, really appreciate their taking the time coming the distance to participate in this.

I hope staff's notes are neater than mine, and not quite as zen, and -- there's a lot here. And it is -- it is so critical.

You know, starting with -- starting with the survey. As a small business owner, as a physician, as somebody who's done research, don't ask a question unless you're going to do something with it for all kinds of reasons. And it's great stakeholders have stepped up and said, yes, we'll help -- we'll help streamline this, make
it work. Every question should have a purpose. And it seems that we really can align incentives here, because if people understand why they're filling it out, they will do it cheerfully, gratefully, and the answers will be good.

And, you know, we're out to ensure a level playing field. We're out to assess what the infrastructure needs are. We're out to help be sure that we are setting policies that they're going to match the technology with the various duty cycles. So in many ways, this should be an easy sell. But again, we have to be sure that every question is leading to give us all better answers for that, and that it's clear transparent, for those who are going to be filing this out.

A lot of the testimony has said, yes, set the bar higher. And I think there's general agreement in terms of the Board. So staff, yes, thinking about ways to how do we do that. And I like very much the suggestion from Supervisor Gioia, you know, that certainly, you know, whatever targets we've talked about, maybe a little higher in some areas. But certainly within that, there are -- there are classes, there are groups that we could set one hundred percent targets. And that is dealing with proven technologies. It's going to help the economies of scale. It's going to be great in terms of visibility of having electric trucks out there that are succeeding, that people
can see them working.

And also, these are the most measurable places to be working, the school buses, the public utility vehicles, the step vans at the airports, the refuse trucks and other ones. And I remind Supervisor Gioia, my operation of the refuse truck was not quiet.

(Laughter.)

BOARD MEMBER SHERIFFS: I almost took out a parking meter.

(Laughter.)

BOARD MEMBER SHERIFFS: But it was fun.

Yes. As we do this work, boy, align the incentives. What we're doing here, how does it align with our port work, with the 617 communities. These things definitely working together. They can work together. They need to work together. As staff mentioned at the beginning, this is a moving target, because there are developments. But the developments all tell us we can ask for more. When we hear about the commitments of UPS, FedEx, Amazon to electrifying their fleets, this is telling us, yes, push, set higher targets, because that's -- that's where things are moving. Frito-Lay in Modesto really doing vertical integration of electric and renewable natural gas with public fueling available. So it's a great, great, great potential mix.
The last thought I have before passing it to my colleague in South Coast. What can we do in terms of the NOx problem and how can we integrate this into the NOx -- solutions for the NOx problem? And, you know, are there ways to work the definition whatever in terms of low NOx, low NOx, renewable natural gas, into near-zero for a limited time period, but to help us -- the technology is there. We certainly desperately need what that can help us with in terms of ozone for the Central Valley and for the South Coast and can be an important part of this as well.

Thank you.

BOARD MEMBER MITCHELL: Thank you.

And we're all anxious to finish up and go to dinner, I think. So I want to say thank you to staff, first of all, for all the work they've done on this. And as Alex mentioned, thank you to all the people that came from all across the state to express their interest in this, and the interest in reducing emissions, and becoming healthier without asthma, and without respiratory diseases in their families.

I want to start out by saying, too, that we did not get any pushback from the OEMs that are in this sector. They all have expressed a willingness to go forward. They want -- they don't want to delay this rule.
They want to do it. But the other side of that is they want to do it right. They don't want to end up going backwards or having a failure as we proceed with this.

And I want to mention that in the ports of Long Beach and Los Angeles, as Hector mentioned - he's no longer here - we are doing some pilot projects with the big OEMs. And I think it's noteworthy to say that we finally got some big OEMs working with us in the electric vehicle sector.

We have Volvo. We have Daimler. We have Peterbilt. We have quite a few of these big OEMs. Now, they're in there and they're saying, yes, this is the wave of the future. They're doing it in Europe. They're doing it in China. We want to do it too. So we have that going for us.

But I also think that it's important that as we are looking at these pilot projects and getting them underway that we learn from the information that we are going to glean from these projects, and that we use that information in our regulatory structure. So I'm going to suggest that the next several months this rule is going to come back to us, as we're not making a decision tonight, that we be working with these OEMs in the pilot projects that they're now -- that are now underway to help us inform our decision making.
The other part of this that Barbara mentioned is the infrastructure. And this is huge. I mean, we can look at the experience we had with light-duty infrastructure and multiply that about ten times, because heavy-duty infrastructure is going to require a lot of involvement with our utilities. It's going to involve changes to the whole grid operation. It's going to be expensive.

And so one of the things that I should -- that I think should be happening, as we do this, I think it would be good to form some kind of working group. And this would involve CARB. It should involve CEC. It should involve the PUC probably, GO-Biz and the Governor's office, a couple of the key OEMs, and the utilities. And it shouldn't be a huge group. It should be a small group that really know their business in each of these sectors, and we work together to figure out how we can make this whole business work. We want to transform transportation into electrification.

And obviously, we're going to need these people at the table to do that. And I would suggest that we get that going as soon as possible and that we work -- that we start this working group to be working with our staff over the next several months, so that when you come back to us with the rule, we have some good decision makers at this
working group that help us inform our decisions and the final regulation.

I agree with Jed Mandel and the Truck and Engine Manufacturers Association's position that we could look at this in segments. And there are certain segments along this spectrum of trucks that are probably more ready than others. And we can prioritize -- prioritize some of those segments and the investments in those segments, so that we experience early success. I think that's important. And what those segments are and how that pans out that's not something I'm going to say here. It's something that has to be, you know, worked out and worked through with staff and with industry.

As far as accelerating, we can't get their fast enough, in my mind, because of the huge emission reductions we need. But I also recognize that because we want to be successful, you run this balance of going too fast and having failure, because we haven't put all the pieces together the way they should be put together.

So I think that where we can accelerate and where it makes sense, perhaps in that segmenting of the spectrum of trucks, we could do that.

As far as reporting, it may be that the reporting requirements are too much, because I think it was Dr. Balmes who said, if it's too onerous, they won't even
reply. So we do need to gather the data and gather the information. And I think it's important to do that, because we want to learn the operational systems that are out there, so that we know how to work with them over the broad scope of what we're doing, so -- and we heard from a lot of truckers who are independent truckers. I know that from my area, they're -- most of truckers are independents, small fleets. And we have to ask ourselves how are they going to transform their small one or two truck operation to an electric truck? How are they going to be able to afford that?

And while the maintenance and operational costs of an electric truck are going to be less for them, but that initial move from their duty heavy-duty diesel truck to a cleaner truck is something that, you know, we need to be thinking about. Investment money needs to be there. Incentive money needs to be there to help them.

The other thing I think is important is we have a whole suite of regulations out there right now. The airport shuttle buses, school buses, our Truck and Bus Rule, the Omnibus Low NOx Rule. And now we're setting out this Advanced Clean Truck Rule. How do these coordinate with one another? And does complying with one defeat another or does complying with them mean that we end up with a bunch of new diesel trucks that we don't want on
the road?

So I think that's important that we're looking at overall from up here, looking at that suite of rules that we put out there and how they coordinate with one another. So I mean, we have a lot of things out there and hopefully we'll be successful as we work through these. But I do think that's important that we take a look at all of that. So thank you for your work. We've got a lot of work cut out for us, but we're going in the right direction. It's very exciting.

CHAIR NICHOLS: Okay. I see a lot of pale faces out there.

(Laughter.)

CHAIR NICHOLS: And I'm not really surprised. But, you know, not only was it a long hearing, but, you know, I hope you understand, everybody who's listening or watching, that the Board was paying attention, that we have a lot of thoughts about this. And so it was important that people be able to articulate what the thoughts are and how they want to see this move.

I do need to actually close the hearing on this item. Close the record, I guess. Although, it will be reopened when the staff is ready to issue a 15-day notice. And that's going to take some time obviously. But in the meantime, this is it, as far as this phase is concerned.
We won't be accepting anymore comments on this agenda item until the 15-day period is open again, at which point people can submit written comments which will be responded to.

I know there's a resolution in front of us. And I suppose we should pass it, just because it moves the issue forward. But frankly, I'm really -- if it's not necessary, I don't know that we have to do it, because I think we're going to end up wanting to wordsmith it. And it's just not -- it's not a good time for doing that right now.

So I would like to rather tell the staff to -- yeah, we can table it, if it's -- according to Robert's Rules, we can -- we can table the resolution for the time being. That's probably a good idea and I can just do that. But I would like to have just a moment of clarity here that we've heard what mainly needs to be worked on.

And I've heard some restructuring of the regulation, particularly to take advantage of the offer that we heard to focus on getting to a hundred percent faster in certain segments. I've heard some direction that those should focus on the communities where we see the most need in terms of immediate or at least quick reductions in emissions and turnover of the fleet, so ports, drayage trucks, buses, school buses, trash trucks,
delivery centers, et cetera. And a lot of conversation around just how to structure this, so that we make it absolutely clear that the production mandate, which is the new thing and really the thing that only California in the world is doing, works with the other mandate for fleets to buy these vehicles, and that we are also building in our incentive programs and our other approaches that we have for how to make the whole market move forward together.

This is partly a matter of communications, but it's also, I think, a matter of thinking. As often happens, I think Ms. Takvorian is helpful in sort of laying out the approach here, which is, again, we know where we need to go. Backing up from there, how are -- how are going to get there?

So I think that's all been pretty well covered by the -- by the Board and the need to, you know, move as fast as we can while not screwing things up.

(Laughter.)

CHAIR NICHOLS: So that's our usual mandate actually. We try to do that whenever we can. And whenever we have made mistakes in the past, we've moved to learn from them and correct them, so I'm not too worried about that part of it.

But I think that -- I think we've covered the ground petty well. And I want to thank the staff for
their patience and flexibility here. This is -- this is tough stuff. If it was easy, it would have been done by now, right?

So I think we can -- we can leave this item as it is.

But we do have one more item to cover quickly and the court reporter needs a break, and probably the Board members do also. So I think if we could again do the ten-minute break, come back do a five-minute staff presentation on the indoor air cleaners, and then we will actually have done our days works. So thank you everybody,

(Off record: 6:06 p.m.)
(Thereupon a recess was taken.)
(On record: 6:14 p.m.)

CHAIR NICHOLS: All right, everybody. Do we have a court reporter?

THE COURT REPORTER: (Raises hand.)

CHAIR NICHOLS: We do.

We have a staff. We have a presentation. We have Board members. We're all here.

Okay. So we'll get the -- we've got ourselves on line again, please?

Yes. You're ready. Okay. Great. This is the last item of our agenda for the day. And we're very
pleased that we have a staff who has been so patient and
has agreed also to make their oral presentation brief,
because we have the material.

So this is Item number 19-12-5, Proposed
Amendments to the Regulation for Limiting Ozone Emissions
from Indoor Air Cleaning Devices. In 2007, the Board
approved an air cleaner regulation to limit ozone
emissions from indoor air cleaning devices. I was there
at the time and so were you.

(Laughter.)

CHAIR NICHOLS: I know.

The regulation has successfully reduced
Californian's exposure to ozone from portable indoor air
cleaning devices. However, CARB staff have identified
amendments that are necessary to protect Californians from
ozone emissions from in-duct air cleaners, which were not
covered at that time.

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

EXECUTIVE OFFICER COREY: Yes. Abbreviated as
well.

The proposed amendments expand the regulation to
cover the fast-growing sector of in-duct air cleaning
devices to further ensure that Californians are not
exposed to unhealthy levels of ozone from indoor air
cleaners. The amendments also include regulatory streamlining as well as updates to approve test standards and changes to labeling requirements.

And with that, I'll ask Julia Gress of the Research Division to give the staff presentation. Julia.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST GRESS: Good evening, Chair Nichols and members of the Board.

We're to present amendments to the indoor air cleaner regulation.

--o0o--

AIR POLLUTION SPECIALIST GRESS: The air cleaner regulation went into effect in 2008. And since that time, over 2,500 models have been certified from over 300 companies. The regulation requires all air cleaners sold in California to be certified, which means they must meet electrical safety standards and an ozone emissions limit of 0.05 parts per million.

--o0o--

AIR POLLUTION SPECIALIST GRESS: Two classes of devices were exempted in the regulation. In-duct air cleaners installed in the duct work of HVAC systems and ozone generators used for specific industrial
The exempted industrial use applications include the ones listed on this slide. And the uses that have an asterisk next to them also include language saying ozone can only be used for that application when people are not present.

We're amending the regulation at this time because the market for in-duct air cleaners is expanding in California, partly due to specific California drivers, such as public health concern for widespread air pollution including wildfire smoke.

CARB commissioned a market research report that stated 100,000 electronic in-duct air cleansers were sold in California in 2017, with the number projected to grow to 146,000 by 2023.

The goals of the amendments are to strengthen, streamline, and clarify portions of the regulation.
the regulation, we proposed expanding the definition of
the types of devices covered in the regulation requiring
the certification of electronic in-duct air cleaners and
revising industrial use exemption.

--o0o--

AIR POLLUTION SPECIALIST GRESS: We propose
expanding the definition of the type of device covered by
the regulation to include those that clean air being drawn
into a room, such as window-mounted AC units with an air
cleaning component.

--o0o--

AIR POLLUTION SPECIALIST GRESS: The most
significant amendment is eliminating the exemption for
in-duct air cleaners and requiring their certification.
We are able to do this at this time, because there is now
test method for measuring ozone from in-duct devices.

--o0o--

AIR POLLUTION SPECIALIST GRESS: We propose
revising the industrial use applications by clarifying
that all uses are permitted only when people are not
present. We also update the advisory label and expand
exposure-related information for manuals.

--o0o--

AIR POLLUTION SPECIALIST GRESS: To streamline
certification, we also propose exempting portable air
cleaners with UV lamps emitting light above 240 nanometer wave length from the ozone testing requirement, because these do not produce significant amounts of ozone.

We also propose limiting the notification requirement for manufacturers of certified air cleaners. We're clarifying conditions under which a previously certified air cleaner would need to be recertified, which is when the device is rebranded, the air cleaning technologies have changed, or the manufacturing facility have moved.

--o0o--

AIR POLLUTION SPECIALIST GRESS: Other minor changes include updating versions of test standards and adding new ones, clarifying auditing requirements for laboratories, and adding language for when certification may be withheld.

--o0o--

AIR POLLUTION SPECIALIST GRESS: Benefits include public health protection from unhealthy exposures to ozone from indoor air cleaners, including workers and bystanders engaged in occupations where ozone is intentionally applied. Manufacturers will also experience reduced administrative burden and cost savings.

--o0o--

AIR POLLUTION SPECIALIST GRESS: The total net
cost is estimated to be less than $1 million over ten years. This includes the cost associated with ozone testing of in-duct air cleaners and the cost savings from eliminating the ozone testing requirement for some portables and eliminating the notification requirement.

--o0o--

AIR POLLUTION SPECIALIST GRESS: Amendments eliminating the notification requirement and testing of portable UVs will go into effect on the effective date, while changes made to the industrial-use exemptions will go into effect 12 months later. Electronic in-duct air cleaners must be certified no later than 24 months after the effective date.

--o0o--

AIR POLLUTION SPECIALIST GRESS: We anticipate making some minor clarifying changes requiring a 15-day notice. These include stating the manufacturing date of the portable devices will be used to determine compliance requirements, clarifying the definition of UVGI lamp, and specifying which devices need to have updated manuals.

--o0o--

AIR POLLUTION SPECIALIST GRESS: In conclusion, staff recommends the Board adopt the proposed amendments. Thank you very much.

CHAIR NICHOLS: Thank you.
I think this is a nice piece of work. I just want to say that when we heard the original regulation we were besieged with people who were in the business of selling portable home air cleaners that were deliberately designed to basically expose people to ozone. And we heard a lot about how great ozone was and all that.

So I think we've come a long ways since then. And I'm very pleased that we're at the point now where we're just making relatively technical amendments that improve the overall efficiency of the program. Although, there is a public health benefit certainly from these in-duct -- getting to this in-duct cleaners.

We have two witnesses who've signed. Will Barrett and Kevin Messner.

MR. MESSNER: Oh, well, I'll make this quick. I had a -- I have a 50-page statement that I'll read.

(Laughter.)

MR. MESSNER: I just wanted to say -- well, first of all, we support the 15-day language. These are clarifications that we really need. But you know what -- besides the technicalities after sitting through five hours of the testimony, what -- on the trucking issue, what really struck me is just thinking -- maybe it's late, a higher issue -- you know what's really important here is you guys have spent a lot of time on the outdoor air,
understandably so.

But let's not forget, and this is one of the times where I really like representing home appliances, indoor air quality is very important. People spend their time in the house, in the home more than they spend outside. So let's not forget the benefits of having good indoor air quality. And we represent manufacturers of portable air cleaners, not the in-duct, but the portable air cleaners that people have in their homes. And people that have asthma or people that have allergies, this really does help.

And so we've been working really well over the years with CARB, and the staff, and on this regulatory changes. And it's just -- it's just a good news story I think and how air cleaners can really benefit people's lives, along with the range hoods and vacuums, which are also hand products.

But thank you, we support the 15-day language, and look forward to continuing to work with you all on these products.

SO thank you.

CHAIR NICHOLS: Thank you for being here and to giving us the message.

Mr. Barrett.

MR. BARRETT: Thank you very much. Will Barrett
with the American Lung Association. I do want to say thank you to the staff for bringing this forward. And we do support this as a smart and responsive update to the existing rules that our organization has worked on for all those years as well.

So with that, thank you very much. I support the rule. The Lung Association looks forward to working with you going forward and thinks that is a good responsive step forward.

Thank you.

CHAIR NICHOLS: Dr. Balmes, would you like to make the motion?

BOARD MEMBER BALKES: Yes. I'd like to make the motion. And I also would like to say, I totally agree that indoor environment is very important. I think you warmed the heart of Peggy Jenkins, who is sitting in the audience when you said that.

CHAIR NICHOLS: I actually have to close the record anyway.

BOARD MEMBER BALKES: Okay. All right.

CHAIR NICHOLS: So you can't make your motion anyway.

BOARD MEMBER BALKES: And I just want to say I actually bought a filter, a nice one, for my wife who has asthma, because of the wildfire smoke. And, of course, I
couldn't use it, because my -- our power was shut off, so
I'm going to get a battery.

CHAIR NICHOLS: So you bought a diesel generator.
(Laughter.)

BOARD MEMBER BALMES: No.

CHAIR NICHOLS: No.

BOARD MEMBER BALMES: I haven't bought a power
cell yet, but I'm going to.

CHAIR NICHOLS: Sorry, I couldn't resist.
(Laughter.)

BOARD MEMBER BALMES: But the other thing is you
mentioned range hoods. And I just received funding from
the NIEHS to do a range hood -- a stove range hood study
in Richmond. Supervisor Gioia is going to help me do
that, because the indoor air is very important and we --
especially for people with asthma.

CHAIR NICHOLS: Thank you very much.

That was a helpful statement. I appreciate it.

Does anybody else want to comment?

BOARD MEMBER SERNA: Second.

CHAIR NICHOLS: Yes, Mr. Serna.

BOARD MEMBER SERNA: Just second it.

CHAIR NICHOLS: Oh, you wanted to second the
motion.

Okay. Well, first of all, I do need to close the
record on this item and then to say that the 15-day notice will come out. And when it does, people will have an opportunity to propose comments on that. And in the meantime no further comments will be received until that happens.

And if there's any reason to do so, the Executive Officer may present this regulation to the Board for further consideration. But if not, the Executive Officer has the ability to go ahead and adopt this regulation without further input from us after addressing all appropriate conforming modifications.

BOARD MEMBER BALMES: So I move adoption of the resolution.

CHAIR NICHOLS:

BOARD MEMBER SERNA: Second.

CHAIR NICHOLS: There's a second. All in favor, please say aye?

(Unanimous aye vote.)

(Board Member De La Torre not present.)

CHAIR NICHOLS: Opposed?

Any abstentions?

Wonderful. Thank you all so much. Good work. Do we have any public come at?

BOARD CLERK CARLOS: (Shakes head.)

CHAIR NICHOLS: Yea.
Okay. So with that, we will be adjourned until tomorrow and have a good evening, everybody.

(Thereupon the Air Resources Board meeting adjourned at 6:26 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 2nd day of January, 2020.

JAMES F. PETERS, CSR
Certified Shorthand Reporter
License No. 10063

J&K COURT REPORTING, LLC  916.476.3171