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BOARD MEMBERS:
Ms. Mary Nichols, Chair
Ms. Sandra Berg, Vice Chair
Dr. John Balmes
Mr. Hector De La Torre
Mr. John Eisenhut
Supervisor Nathan Fletcher
Mrs. Barbara Riordan
Supervisor Phil Serna
Dr. Alexander Sherriffs
Professor Daniel Sperling
Ms. Diane Takvorian

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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
Ms. Annette Hebert, Assistant Executive Officer
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STAFF:
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Mr. Mike Guzzetta, Branch Chief, Citations and Registration Enforcement Branch, ED

Mr. Cody Howard, Manager, Specialized Fleet Enforcement Section, ED

Ms. Elise Keddie, Manager, ZEV Implementation Section, STCD

Mr. Jack Kitowski, Division Chief, MSCD

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Mr. Femi Olaluwoye, Manager, Incentives Development Section, MSCD

Ms. Stephanie Palmer, Air Resources Engineers, ZEV Implementation Section, STCD
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Mr. Scott Rowland, Branch Chief, Incentives and Technology Assessment Branch, MSCD
Mr. Todd Sax, Division Chief, ED
Ms. Tess Sicat, Branch Chief, Heavy-Duty Off-Road Strategies Branch, MSCD
Mr. Mark Stover, Branch Chief, Field Operations Branch, ED
Ms. Sydney Vergis, Assistant Division Chief, MSCD

ALSO PRESENT:
Ms. Anna Alvarado, City of San Jose
Mr. Will Barrett, American Lung Association
Mr. Sam Bivins, Siemens
Mr. Bill Boyce, Sacramento Municipal Utility District
Mr. Timothy Blubaugh, Truck and Engine Manufacturer's Association
Mr. Cory Bullis, Electric Vehicle Charging Association
Ms. Mei Mei Collins, CALPIRG
Mr. Cameron Demetre, TechNet
Mr. Neal Desai, National Parks Conservation Association
Mr. Sean Edgar, Clean Fleets
Mr. Jay Friedland, Plug in America, Open Access Coalition
Ms. Claire Garcia, The Lion Electric Company
Ms. Katherine Garcia, Sierra Club of California
APPEARANCES CONTINUED

ALSO PRESENT:

Ms. Hannah Goldsmith, California Electric Transportation Coalition

Mr. Tony Gonzalez, Electrify America

Mr. Brad Groters, EV Connect

Ms. Jenna Hahn, City of Sacramento

Mr. Frank Harris, California Municipal Utilities Association

Ms. Kelly Hitt, CompTIA

Ms. Obrie Hostetter, Hubject

Mr. Gary Hughes, Biofuel Watch

Mr. Erick Karlen, Greenlots

Mr. Ryan Kenny, Clean Energy

Ms. Megha Lakhchaura, EVBox

Mr. Kent Leacock, Proterra

Ms. Alexandra Leumer, ChargePoint

Mr. Jim Lites, California Airports Council

Ms. Lisa McGhee, San Diego Airport Parking Company

Mr. Adam Mohabbat, EVgo

Mr. Marc Monbouquette, eMotorWerks

Mr. Mile Muller, Natural Resources Defense Council

Mr. Jimmy O'Dea, Union of Concerned Scientists

Mr. Elias Rodriguez, Earthjustice

Mr. Rocky Rushing, Coalition for Clean Air
APPEARANCES CONTINUED

ALSO PRESENT:
Mr. Scott Saffian, FLO Services USA, Inc.
Ms. Paige Samblanet, Earthjustice
Mr. Rajiv Shah, FreeWire Technologies
Ms. Heidi Sickler, Silicon Valley Leadership Group
Mr. Alex Solis, Comite Civico Del Valle
Ms. Francesca Wahl, Tesla
Mr. Joseph Wiedman, Peninsula Clean Energy Authority
Mr. Josh Winkler, Blink Charging Company
# INDEX

<table>
<thead>
<tr>
<th>Call to Order</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pledge of Allegiance</td>
<td>1</td>
</tr>
<tr>
<td>Opening remarks by Chair Nichols</td>
<td>1</td>
</tr>
<tr>
<td>Roll Call</td>
<td>2</td>
</tr>
</tbody>
</table>

## Item 19-6-1

<table>
<thead>
<tr>
<th>Chair Nichols</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Officer Corey</td>
<td>6</td>
</tr>
<tr>
<td>Staff Presentation</td>
<td>7</td>
</tr>
<tr>
<td>Mr. Blubaugh</td>
<td>16</td>
</tr>
<tr>
<td>Ms. Claire Garcia</td>
<td>19</td>
</tr>
<tr>
<td>Ms. McGhee</td>
<td>20</td>
</tr>
<tr>
<td>Ms. Wahl</td>
<td>22</td>
</tr>
<tr>
<td>Ms. Goldsmith</td>
<td>23</td>
</tr>
<tr>
<td>Board Discussion and Q&amp;A</td>
<td>28</td>
</tr>
<tr>
<td>Motion</td>
<td>32</td>
</tr>
<tr>
<td>Vote</td>
<td>32</td>
</tr>
</tbody>
</table>

## Item 19-6-2

<table>
<thead>
<tr>
<th>Chair Nichols</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Officer Corey</td>
<td>34</td>
</tr>
<tr>
<td>Staff Presentation</td>
<td>36</td>
</tr>
<tr>
<td>Ms. Claire Garcia</td>
<td>45</td>
</tr>
<tr>
<td>Mr. O'Dea</td>
<td>45</td>
</tr>
<tr>
<td>Ms. Samblanet</td>
<td>47</td>
</tr>
<tr>
<td>Mr. Barrett</td>
<td>49</td>
</tr>
<tr>
<td>Mr. Lites</td>
<td>51</td>
</tr>
<tr>
<td>Mr. Leacock</td>
<td>51</td>
</tr>
<tr>
<td>Ms. Sickler</td>
<td>53</td>
</tr>
<tr>
<td>Ms. McGhee</td>
<td>54</td>
</tr>
<tr>
<td>Mr. Rushing</td>
<td>56</td>
</tr>
<tr>
<td>Ms. Collins</td>
<td>58</td>
</tr>
<tr>
<td>Mr. Kenny</td>
<td>59</td>
</tr>
<tr>
<td>Ms. Katherine Garcia</td>
<td>60</td>
</tr>
<tr>
<td>Ms. Goldsmith</td>
<td>62</td>
</tr>
<tr>
<td>Ms. Leumer</td>
<td>63</td>
</tr>
<tr>
<td>Board Discussion and Q&amp;A</td>
<td>64</td>
</tr>
<tr>
<td>Motion</td>
<td>64</td>
</tr>
<tr>
<td>Board Discussion and Q&amp;A</td>
<td>64</td>
</tr>
<tr>
<td>Vote</td>
<td>70</td>
</tr>
<tr>
<td>Item 19-6-3</td>
<td>Chair Nichols</td>
</tr>
<tr>
<td></td>
<td>Executive Officer</td>
</tr>
<tr>
<td></td>
<td>Corey</td>
</tr>
<tr>
<td></td>
<td>Staff Presentation</td>
</tr>
<tr>
<td></td>
<td>Senator Corbett</td>
</tr>
<tr>
<td></td>
<td>Ms. Alvarado</td>
</tr>
<tr>
<td></td>
<td>Ms. Hahn</td>
</tr>
<tr>
<td></td>
<td>Mr. Harris</td>
</tr>
<tr>
<td></td>
<td>Ms. Lakhchaura</td>
</tr>
<tr>
<td></td>
<td>Mr. Saffian</td>
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<tr>
<td></td>
<td>Mr. Monbouquette</td>
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<tr>
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<td>Mr. Winkler</td>
</tr>
<tr>
<td></td>
<td>Ms. Sickler</td>
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<tr>
<td></td>
<td>Mr. Bivins</td>
</tr>
<tr>
<td></td>
<td>Mr. Groters</td>
</tr>
<tr>
<td></td>
<td>Mr. Bullis</td>
</tr>
<tr>
<td></td>
<td>Mr. Muller</td>
</tr>
<tr>
<td></td>
<td>Mr. Friedland</td>
</tr>
<tr>
<td></td>
<td>Mr. Demetre</td>
</tr>
<tr>
<td></td>
<td>Mr. Rodriguez</td>
</tr>
<tr>
<td></td>
<td>Mr. Wiedman</td>
</tr>
<tr>
<td></td>
<td>Mr. Mohabbat</td>
</tr>
<tr>
<td></td>
<td>Ms. McGhee</td>
</tr>
<tr>
<td></td>
<td>Mr. Rushing</td>
</tr>
<tr>
<td></td>
<td>Ms. Hitt</td>
</tr>
<tr>
<td></td>
<td>Ms. Wahl</td>
</tr>
<tr>
<td></td>
<td>Ms. Goldsmith</td>
</tr>
<tr>
<td></td>
<td>Ms. Leumer</td>
</tr>
<tr>
<td></td>
<td>Mr. Karlen</td>
</tr>
<tr>
<td></td>
<td>Mr. Gonzalez</td>
</tr>
<tr>
<td></td>
<td>Mr. Shah</td>
</tr>
<tr>
<td></td>
<td>Ms. Hostetter</td>
</tr>
<tr>
<td></td>
<td>Mr. Boyce</td>
</tr>
<tr>
<td></td>
<td>Board Discussion</td>
</tr>
<tr>
<td></td>
<td>and Q&amp;A</td>
</tr>
<tr>
<td></td>
<td>Motion</td>
</tr>
<tr>
<td></td>
<td>Vote</td>
</tr>
</tbody>
</table>

<p>| Item 19-6-4 | Chair Nichols       | 198|
|             | Executive Officer  | 199|
|             | Corey              |    |
|             | Staff Presentation | 199|
|             | Ms. McGhee         | 219|
|             | Mr. Solis          | 220|
|             | Mr. Edgar          | 221|
|             | Board Discussion   | 223|
|             | and Q&amp;A            |    |</p>
<table>
<thead>
<tr>
<th>Public Comment</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Desai</td>
<td>227</td>
</tr>
<tr>
<td>Mr. Hughes</td>
<td>230</td>
</tr>
<tr>
<td>Adjournment</td>
<td>234</td>
</tr>
<tr>
<td>Reporter's Certificate</td>
<td>235</td>
</tr>
</tbody>
</table>
CHAIR NICHOLS: Good morning.
Good morning, ladies and gentlemen. If people will find their seats, we're ready to get started.

I want to welcome everybody to the June 27th, 2019 public meeting of the California Air Resources Board. And before we get underway, we will begin with the Pledge of Allegiance to the flag, if you'll please, rise.

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

CHAIR NICHOLS: Thank you. I'll read the mandatory announcements and then I have another little digression from our published agenda. So first of all, I want to make sure that everybody knows that there's an emergency exit in the rear of the room. And in the event that you hear an alarm, we're required to exit from the back there or the Board can leave the dais and go out the exits on either side of our little area up here. We have to evacuate the building by going down the stairs and out in the front, and then stay out there until we hear the all-clear signal.

We also request that anybody who wants to testify fill out a request to speak card. These are available either in the lobby outside the Board room or from the clerk. And we ask that you turn it in to a Board
assistant prior to the commencement of the item that you want to speak on. In other words, we'd like to try to collect as much as we can before we begin the item, so we know how many speakers to prepare for.

We will be imposing a three-minute time limit on speakers. We appreciate it if you'd give your name and come up to the podium and then speak in informally, if at all possible rather than reading your prepared testimony, especially because if you have written testimony, it will be entered into the record.

With that, I think we have -- oh, sorry. We have to do a roll call, before we can actually do any work. Okay. Let's begin with a roll call to show that we have a quorum.

Would you please call the roll.

BOARD CLERK DAVIS: Dr. Balmes?
BOARD MEMBER BALMES: Here.
BOARD CLERK DAVIS: Mr. De La Torre?
BOARD MEMBER DE LA TORRE: Here.
BOARD CLERK DAVIS: Mr. Eisenhut?
BOARD MEMBER EISENHUT: Here.
BOARD CLERK DAVIS: Supervisor Fletcher?
BOARD MEMBER FLETCHER: Here.
BOARD CLERK DAVIS: Mrs. Riordan?
BOARD MEMBER RIORDAN: Here.
BOARD CLERK DAVIS: Supervisor Serna?
BOARD MEMBER SERNA: Here.
BOARD CLERK DAVIS: Dr. Sherriffs?
BOARD MEMBER SHERIFFS: Oh, yeah.
(Laughter.)
CHAIR NICHOLS: He's here.
(Laughter.)
BOARD CLERK DAVIS: Good morning.
Professor Sperling?
BOARD MEMBER SPERLING: Here.
BOARD CLERK DAVIS: Ms. Takvorian?
BOARD MEMBER TAKVORIAN: Here.
BOARD CLERK DAVIS: Vice Chair Berg?
VICE CHAIR BERG: Here.
BOARD CLERK DAVIS: And Chair Nichols?
CHAIR NICHOLS: Here.
BOARD CLERK DAVIS: Madam Chair, we have a quorum.
CHAIR NICHOLS: Thank you. We seem to have gone into summer mode here.
(Laughter.)
CHAIR NICHOLS: It's great.
As I think my fellow Board members and staff all know, this has been a busy time since we last met. A lot of things happening in our world, including a hearing in
front of the House Energy and Commerce Committee last week; the signing of an MOU with Canada regarding vehicle emissions programs aligning yesterday; and simultaneously the release of a new video by our friends and colleagues at Veloz who have worked with Arnold Schwarzenegger, our former Governor, and a great fan and friend of electric vehicles, to produce a video, which is now in the process of going viral on all kinds of social media.

And you may not be able to escape it, even if you want to, but I thought that it would be nice if everybody had a chance to see it this morning before we got started. So I believe we have cued it up and here we go.

(Thereupon a video was played.)

CHAIR NICHOLS: So that's it.

(Laughter.)

CHAIR NICHOLS: It's not your typical public service commercial. It was something that we really felt was going to succeed in sparking interest among people who are potential car buyers, but not necessarily tuned into the idea of electric cars. It obviously features no one single brand. Although, you see quite a few different -- different brands flashing on the screen.

And so I think we will be able to monitor what the traffic is like to the website and see if it's actually working. But so far, it's got a lot of -- a lot
of attention, and especially in the advertising world as just something -- something different.

So I'm excited about it. Okay. So to get on to the work of the morning. Our first item is number 19-6-1, the proposed alternative certification requirements and test procedures for on-road heavy-duty electric and fuel-cell vehicles and proposed standards and test procedures for zero-emission powertrains, otherwise referred to as the Zero-Emission Powertrain Certification or ZEPCert regulation.

The first hearing for this proposal took place in February. The proposed regulation would create an optional certification program for battery electric and fuel-cell heavy-duty vehicles that would encourage industry best practices while supporting upcoming zero-emission regulatory effort and financial investments.

As a complement to other measures, this certification program is intended to help accelerate the development of the heavy-duty zero-emission market and Californians transition to more zero-emission technologies.

There were a number of comments made at the last hearing by public -- members of the public and Board members. As a result of which, the staff has made modifications to the original proposal and they hopefully
will address many of the remaining issues and concerns.

Mr. Corey, would you please introduce this item?

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

Staff will present its final proposal for the
Zero-Emission Powertrain Certification or ZEPCert
regulation as you noted.

The proposed regulation would establish a
certification framework that addresses key barriers
hindering the growth market-ready on-road heavy-duty
emission vehicles available today, while still promoting
innovation in the more cutting edge technology
applications of tomorrow.

And as noted, the proposed rule would also
support CARB's other upcoming efforts geared towards
increasing deployment of zero-emission technology in the
mobile source sector. At the previous hearing, staff had
proposed several modifications to address concerns from
stakeholders received during the 45-day comment period.
Following the hearing, staff continued to work with
stakeholders and made a number of additional modifications
to the proposal.

What staff will present to you today is a
culmination of those efforts, a more refined final
proposal with restructured warranty reporting and recall
provisions, as well as other flexibilities that reduce
compliance costs without reducing the overall effectiveness of the regulation.

Staff is recommending that the Board adopt the proposed Zero-Emission Powertrain Certification Regulation.

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

David.

(Thereupon an overhead presentation was presented as follows.)

AIR RESOURCES ENGINEER EIGES: Thank you, Mr. Corey. Good morning, Chair Nichols and members of the Board. This is the second of two hearings on the proposed Zero-Emission Powertrain Certification, or ZEPCert regulation.

In the first hearing back in February, staff presented the original proposal, as well as a number of planned modifications to be made through the 15-day change process.

The Board adopted Resolution 19-7, directing staff to return to the Board to present responses to any comments raising significant environmental concerns and to present the final regulatory proposal for consideration for adoption.

Today, I'll be recapping the proposed regulation,
providing a summary of the 15-day changes, and discussing
the environmental analysis.

--o0o--

AIR RESOURCES ENGINEER EIGES: The proposed
ZEPCert regulation is intended to promote the development
of effective and reliable on-road heavy-duty electric and
fuel-cell vehicles. It would assist in the transformation
of the heavy-duty sector by establishing a framework --
certification framework that could be used to protect
consumers purchasing such vehicles as part of future
technology-forcing zero-emission measures and incentive
programs.

Although we have seen tremendous growth in the
deployment of heavy-duty zero-emission vehicles over the
past few years, certain fleets that have adopted such
vehicles have had less than perfect experiences. Some
fleets received products with poor workmanship, some
experience extended downtime, while others did not have
access to consistent product support. These bumps in the
road, however, were not unexpected as this was and still
is a new and emerging market.

That said, the technology itself is ready for
greater deployment, and as such, staff is moving towards
fleet rules that require the purchase of zero-emission
vehicles as well as greater investment in heavy-duty
zero-emission technology. But new market issues are still a concern, so additional safeguards are now appropriate to protect fleets from purchasing products that could poison the well as well as to continue providing good stewardship over public funds.

The proposed ZEPCert regulation would establish such safeguards through a balanced certification framework that includes robust requirements that could be used to help strengthen the market for more mature applications, while still allowing cutting edge newer applications to continue to be certified through the less stringent certification process that currently applies today.

Ultimately, fleets need these vehicles to work. If they don't, fleets will return to using fossil fuel vehicles instead.

--o0o--

AIR RESOURCES ENGINEER EIGES: In December 2018, the Board approved the Innovative Clean Transit Regulation, which represents the first regulatory step in a broader statewide strategy to transition the heavy-duty sector to zero-emissions technology. Additional measures to support the continued growth of the heavy-duty zero-emission industry are just around the corner. The first of these measures is the Zero-Emission Airport Shuttle Proposal, which will be presented to the Board for
consideration later today.

A number of other items are slated to be brought before the Board in the next few years. The growth and successful adoption of heavy-duty ZEVs, which will lead to reductions in mobile source emissions, are critical to California meeting its air quality and GHG reduction goals.

--o0o--

AIR RESOURCES ENGINEER EIGES: To date, ARB has administered over $500 million to fund on-road heavy-duty zero-emission vehicles. And that number is expected to continue to grow. The money has come from sources designated to provide cleaner transportation, such as Cap-and-Trade, and the Goods Movement Emission Reduction Program. Funding has gone towards commercially available heavy-duty zero-emission vehicles through first-come first-served programs, as well as a variety of other projects designed to fund zero-emission trucks and buses in their pre-commercial stages through pilot and demonstration programs.

The State is at a point now, where it is appropriate to have a process, such as the one that would be established by the proposed ZEPCert regulation that could be used to ensure that investments prioritize well-supported zero-emission vehicles.
AIR RESOURCES ENGINEER EIGES: Current certification requirements for heavy-duty vehicles with zero-emission technology are minimal and provide little assurance that manufacturers will provide adequate support for their products. The proposed ZEPCert regulation would modify the existing certification process for heavy-duty vehicles and establish certification conditions consisting of expected industry best practices for battery-electric and fuel-cell heavy-duty powertrains and vehicles.

Although the ZEPCert proposal would be an optional process, upcoming zero-emission regulations could make it mandatory as part of their specific measures. Similarly, if appropriate, future incentive programs could also incorporate the proposed ZEPCert process.

In addition, even as an optional process, some manufacturers may voluntarily choose to certify through ZEPCert as a selling point to instill more confidence in consumers looking to purchase their product.

--o0o--

AIR RESOURCES ENGINEER EIGES: I'm now going to provide a short recap of the proposed regulation.

The ZEPCert proposal would establish separate processes for certifying powertrains and vehicles, analogous to the way heavy-duty combustion engines and
vehicles are certified today.

The powertrain certification would cover the electrified portions of the propulsion system, including components such as the battery and the motor. The vehicle certification, on the other hand, would cover the mechanical components found in a typical internal combustion vehicle downstream of the powertrain.

These components, collectively referred to as vehicle integration components, would include the driveshaft, transmission, and axles.

--o0o--

AIR RESOURCES ENGINEER EIGES: The ZEPCert powertrain requirements are designed to ensure consumers are provided with consistent, transparent information that could be used to inform fleet purchase decisions, assess operating efficiency, and evaluate the condition of the battery. In addition, the proposed regulation would require manufacturers to provide and facilitate effective product support by making available repair and diagnostic information and tools to third-party repair facilities, providing powertrains with a minimum warranty and recalling powertrain models if pervasive and severe problems are identified.

--o0o--

AIR RESOURCES ENGINEER EIGES: The ZEPCert

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vehicle requirements largely share the same objectives as those being proposed for Zero-Emission Powertrain Certification. They are designed to ensure that information regarding the vehicle performance and warranty is clearly and consistently communicated to fleet purchasers and that manufacturers provide and facilitate greater product support for electric and fuel cell vehicles.

--o0o--

AIR RESOURCES ENGINEER EIGES: While being proposed as an optional process, staff chose to complete a conservative cost analysis using the assumption that all vehicles and HVIP, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project, a program designed for commercially-ready zero-emission products would certify through the ZEPCert process.

The cost for reporting, testing, labeling, and preparation of certification applications were included in the analysis under the assumption that these were requirements above and beyond common industry practice. However, tasks like developing an owner's manual or diagnostic and repair manual were considered actions manufacturers would already be taking to produce a road -- a robust product, so those costs were not included in the ZEPCert proposal's cost analysis.
In total, the estimated cost of the proposed ZEPCert regulation would be $720 per vehicle and would cost California businesses approximately $250,000 during the first five years of the program.

--o0o--

AIR RESOURCES ENGINEER EIGES: As indicated at the previous public hearing, staff continued to work with stakeholders and released modified language for public comment through a 15-day change process that started on May 13th and ended on May 28th of this year.

The modifications included clarifying the intent of the recall requirements, streamlining the warranty reporting and recall requirements by removing redundant provisions, and adding flexibility in how the diagnostic information is obtained from vehicles.

Lastly, staff made other small editorial updates to add clarity and eliminate redundancy. Staff believes these changes would reduce the overall compliance burden of the proposal without impacting its effectiveness.

--o0o--

AIR RESOURCES ENGINEER EIGES: The proposed ZEPCert regulation was included in a joint Environmental Analysis with the proposed Zero-Emission Airport Shuttle Regulation. The draft Environmental Analysis concluded that implementation of the proposed projects could bring
beneficial impacts to energy demand, greenhouse gases, and long-term air quality. This analysis also analyzed and disclosed several potentially significant and unavoidable environmental impacts associated with the Zero-Emission Airport Shuttle Regulation component, primarily related to short-term construction activities.

However, there were no comments raising environmental issues on the ZEPCert components of the draft Environmental Analysis during the 45-day comment period, the previous Board Meeting, or the 15-day comment period.

The draft Environmental Analysis was released for a 45-day comment period that began on January 4th, 2019 and ended on February 19th, 2019.

While staff previously circulated the proposed 15-day regulatory modifications for public review that are before you today, those modifications do not change the regulatory proposal in any way that is anticipated to affect the conclusions of the Environmental Analysis.

The written responses to the comments on the draft Environmental Analysis were posted on CARB's website on June 24th. And the final Environmental Analysis was also posted on June 24th.

--o0o--

AIR RESOURCES ENGINEER EIGES: Staff recommends
that the Board approve Resolution 19-15, which would approve the written responses to environmental comments, certify the Final Environmental Analysis, and adopt the required CEQA findings and staff's final regulatory proposal.

This concludes my presentation. Thank you for your consideration.

CHAIR NICHOLS: Thank you. We have four witnesses who've signed up to speak on this item. So why don't we hear from them first beginning with Timothy Blubaugh from EMA.

CHAIR NICHOLS: Good morning.

MR. BLUBAUGH: Good morning. My name is Timothy Blubaugh and I am with the Truck and Engine Manufacturers --

Hi.

CHAIR NICHOLS: Hi.

MR. BLUBAUGH: Tim Blubaugh with the Truck and Engine Manufacturer's Association.

First, I would like to thank ARB staff for the constructive dialogue we have had on these proposed certification requirements. We sincerely appreciate staff's willingness to listen and make changes to try to accommodate our concerns.

Specifically, we support the important changes to
the original proposal that were in the 15-day notice. However, even with the constructive dialogue since the original proposal, the ZEP Certification requirements are complicated and extensive. They won't pose costs and burdens on the emerging zero-emission commercial vehicle market -- zero-emission commercial vehicle marketplace that are well in excess of the estimates in the Initial Statement of Reasons.

Manufacturers will need to make significant investments to redesign products, to adjust service and after-market procedures, and to put in place certification compliance reporting procedures and processes needed to meet the new requirements.

There is no doubt that it will cost the manufacturer significantly more to achieve the certification of one ZEV family than the $10,000 estimated in the ISOR. That amount would not even cover the cost of one certification engineer for one month.

Although the ZEP Certification requirements are identified as optional, this is misleading. The requirements -- as staff noted, the requirements will become mandatory with the Airport Shuttle Regulation, and they most likely will become mandatory sooner by the essential ZEV incentive programs that are required to sell the product.
Due to the extensive upfront work manufacturers must complete to ensure compliance with the new rules, the requirements should remain optional until 2023 at the earliest.

To provide adequate lead time to manufacturers, we ask that ARB change the applicability of the new requirements to model year 2023 or later. Additionally, ARB should be prepared to revisit the rules as manufacturers uncover issues during initial implementation.

This novel rule went through extensive changes during a compressed rulemaking schedule, and the 15-day notice included 51 substantive changes to the original proposal. We believe that more modifications inevitably will be needed to make the rule workable and implementable and not overly burdensome to the ZEV market.

Accordingly, we ask that ARB commit to revisiting the ZEP Certification requirements as needed with a subsequent rule.

EMA and its members look forward to working with ARB and staff to make the ZEP Certification Rule as workable and as implementable as possible for the zero-emission commercial vehicle market.

Thank you.
Claire Garcia. Just come on down when your -- when it's your turn.

MS. CLAIRE GARCIA: Hello, Chair Nichols and ARB Board members. My name is Claire Garcia and I'm part of the Lion Electric Company. We appreciate the opportunity today to support the proposed zero-emission -- or ZEPCert regulations.

As a background, Lion is a leading provider of all electric medium- and heavy-duty vehicles, including zero-mission shuttle, buses school buses, and heavy-duty zero-emission trucks. We have over 200 electric school buses in operation in North America that have been safely carrying kids to and from school every day for the past three years with over two million miles of service.

Building on the success of our zero-emission school bus, our zero-emission shuttle bus utilizes the same powertrain, loader, and batteries. Our team specializes in zero-emission heavy-duty vehicle deployment and are one of the few manufacturers in North America to dedicate its production entirely to zero-emission fully-integrated heavy-duty vehicles.

We support the ZEPCert regulation today as it will promote consistency and reliability for medium and heavy-duty zero-emission vehicles.

We look forward to continuing to work with ARB to
deploy more zero-emission heavy-duty vehicles across California.

Thank you.

CHAIR NICHOLS: Thank you.

MS. McGHEE: Good morning. My name is Lisa McGhee with San Diego Airport Parking Company.

And I do want to thank this Board for coming up with a measure to support the zero-emission powertrains. They do speak to the fact that there have been problems in the industry and fleets have been taking the risk associated with this particular technology and it is at a cost. And without some type of standard and measure, then we're not going to get where we need to get to with this technology. And we're spending thousands and millions of dollars on taxpayer's money.

So I do want to say thank you wholeheartedly for creating the standard and a regulation moving us forward towards the future. It really is addressing problems that we've already experienced from lessons learned.

I do have concerns as it relates to several things within the measure, which include the fact that the Class 2b and 3 vehicles, which are on your HVIP and are commercial heavy-duty vehicles are being -- are not included in this measure. And ARB -- and the air shuttle buses are 40 percent of those vehicles.
And so I'm concerned with that. And more importantly on the CFR code 16, part 309, it addresses the aftermarket kits that go into these 2b/3 vehicles, which are completed vehicles. And when you install a kit that's electric onto an existing vehicle before it's ultimately sold to the purchaser, it's considered to be the manufacturer's responsibility.

And so without creating the same types of procedures and benchmarks for these vehicles, we're still going to have the same gap and the same problems. For example, you know, I've witnessed literally in my battery modules wood at the ends of each side of the module just to pack it, you know, right next to things that have high voltage. These types of things need to stop.

These are risks that we're taking when we're driving these vehicles, which is no different than air quality. So I'm employ to make sure you take a deeper dive into why are you separating this vehicle out or that class of vehicle out?

Best practices should be included for all commercial motor carriers. We are held to high safety standards and we have motor carrier operating permits. And we have CHP inspections every six months to one year, and we have mandatory inspections that we have to provide written reports every 90 days. And those are -- those are
things that we're held to the safety standards within those vehicles. And defaults, any failures all have to be written, and a receipt to fix that vehicle before it can go back on the road.

And so these types of real on-the-ground issues are the things that I'm concerned about. And the repairability is just another thing that we won't have support without having standards for this particular class of a vehicle.

So thank you.

CHAIR NICHOLS: Thank you.

MS. WAHL: Good morning, Chair Nichols and members of the Board. My name is Francesca Wahl and I'm here today on behalf of Tesla.

Similar to some of the previous speakers, we greatly appreciate staff's efforts over the past year to really work with stakeholders and modify the original 45-day language in the proposal to incorporate our stakeholder feedback. And we look forward to continuing to provide feedback as it moves forward.

We believe the modifications that have been made to many of the initial proposals in the certification better reflect the current state of the industry. And again, we believe that those can continue to be refined as the market moves forward. So we look forward to
continuing to work with the Air Resources Board on the ongoing efforts underway to incorporate this proposal and other programs, and to make sure that we are able to remove the barriers that made California a home for light-duty zero-emission vehicles, and can also help grow the heavy-duty zero-emission vehicle market here in this state.

So we thank you for your leadership on this effort and we look forward to continuing to work with everyone in the implementation phase.

CHAIR NICHOLS: Thank you.

And we do have one more witness who signed up after the first list.

Hi.

MS. GOLDSMITH: Hi. Good morning, Chair Nichols and members of the Board. My name is Hannah Goldsmith and I'm with the California Electric Transportation Coalition. Thank you for revising the list to let me speak.

So we've been coordinating an internal working group of around 20 manufacturers over the course of this proceeding to provide feedback that includes both traditional manufacturers as well as those that produce only zero-emission technologies.

CARB staff have put in a lot of time to work with us on this on proposal and we appreciate their commitment
to taking our feedback seriously and their willingness to work with us on amendments. We're pleased to say that we're neutral on the proposal as revised by the 15-day modifications. However, we do have one recommendation, as you heard before, from Mr. Blubaugh from EMA.

Given that the proposed regulations would require many changes to current warranty recall documentation and reporting practices for medium- and heavy-duty zero-emission vehicles starting with model year 2021, we do think that they should remain voluntary, as currently drafted, until model year 2023.

The regulations will still result in substantive changes to current practices and add costs to the manufacturing of zero-emission vehicles. We believe that keeping certification optional for this two-year period will allow for manufacturers, fleets, and stakeholders, and CARB staff to work together to implement the certification process to refine the regulations, if necessary, to ensure they support the objectives of the regulations and accelerate and promote ZEV deployment.

By voluntary, we mean that the regulations would not be required as eligibility criteria for any funding program like HVIP, or the VW NOx Mitigation Fund, or regulation until model year 2023.

We also recommend that staff report back to the
Board on the implementation of the regulations once
adopted and amended, and before the regulations are made
mandatory through a funding program or regulatory action.
This review could be similar to the direction that was
provided in the resolution for the Innovative Clean
Transit Rule.

This is a particularly challenging ZEV market
segment and one that CalETC believes is essential to meet
the State's clean air, climate change, and economic goals.
We recognize that a balance must be struck between the
objectives of this certification program and promoting and
accelerating zero-emission vehicle deployment.

Thank you.

CHAIR NICHOLS: Thank you. Could you stay up for
just a minute. I don't necessarily think you are required
to speak on behalf of your entire industry or all your
members, but I actually have questions about how this is
going to work and specifically about your recommendation
in making it voluntary.

Because as with many things in this area, this
whole electrification effort that we're embarked on, we're
trying to provide some level of consumer protection
frankly and assurance to the public, at the same time, we
are responsible for helping to make this whole industry
viable more rapidly than it is now. So there's a little
bit of tension around those things.

But it doesn't seem to me that just saying you don't have to do it until the 2023 model year is going to get us where we need to go in terms of having those who have equipment that should get certified actually come in and learn how to do it. I've been thinking about this ever since I, you know, spoke with you and representatives of your organization a week or so ago, and wondering why we couldn't have a system where everybody is required to apply for certification, but we don't necessarily have the requirement that you have succeeded in getting a certification, you know, before a somewhat later period?

And so I'm looking for a compromise here, whereby every -- everybody is learning as you say. There will be changes. I think there's just no doubt about it, that, you know, as we go along we'll learn some things and everybody will learn some things about how this equipment actually functions and how the certification needs to work.

But at the same time, just putting it off for a couple years doesn't get us where we need to go. So I'd really like to hear from you some suggestion about something more than just, you know, extending the deadline as to how we could collaborate, frankly, because this really is a partnership at this point and I'd like to keep
it that way, how we could make this work more effectively and not just wait.

MS. GOLDSMITH: Yes. No, I agree with what you said. I think what I've learned from our members as well as other manufacturers that we've worked with is that they would want to come in starting with model year 2021 to get certified.

CHAIR NICHOLS: Um-hmm.

MS. GOLDSMITH: The concern is that there may be hiccups in that process that could slow down the market and would result in a delay in rolling out vehicles under HVIP or something if it were tied to that program. It's not that we would want the regulations as drafted for that model year 2021 to change to model year 2023. We really just are looking for a commitment from the Board that once it starts to be implemented and manufacturers are coming in, and complying, and getting certification, if there are issues starting with model year 2021 or 2022 that need to be worked out, we would like to see that worked out before it's tied to a funding program.

CHAIR NICHOLS: Um-hmm.

MS. GOLDSMITH: The concern is really that we would adopt the regulation today, and then in October, or soon after, say, okay, this is now required for HVIP starting with model year 2021 before we have experience
implementing the program and jumping through any hurdles or fixing things that may need to be fixed.

CHAIR NICHOLS: Right.

MS. GOLDSMITH: I hope that helped.

CHAIR NICHOLS: Well, thank you for that clarification. And I don't know if other Board members have questions or comments about how to deal with this situation or if the staff wants to respond to the question at this point.

Maybe, staff.

MOBILE SOURCE CONTROL DIVISION ASSISTANT CHIEF CARTER: Sure I could start. Everything you said, Mary, I couldn't -- I couldn't have said it better. I mean why wait the two years. And if you take a worst case, for example, if a certain incentive program or regulatory program required this as 2021, those issues that Hannah raised would be brought before this Board for that particular measure. If there is something unique about a measure or regulatory -- incentive program or regulatory measure, those issues would be raised at that time.

But to delay it two years when you may have manufacturers that want to use the procedure in '21, it makes no sense. Some of the manufacturers want to use it, even as Hannah said, for marketing purposes or whatever. So we see no reason to delay.
VICE CHAIR BERG: So I'd just like to follow up on that. So what I'm hearing though from industry is a confusion of what does it mean to start. So if people are coming in and starting the process of getting certified for 2021 and 2022, and they're in that process, does that mean they're in compliance and will be able to apply for funding programs?

MOBILE SOURCE CONTROL DIVISION ASSISTANT CHIEF CARTER: If the particular funding program requires this procedure, then yes. But it would depend -- it would depend on the specific funding program, if they require this procedure.

VICE CHAIR BERG: Okay. So what I'm hearing from you then is that those -- those programs that are going to require, it would come back to the Board and it would be part of a new discussion, and timing, and other concerns would come up at that time for us to be able to readdress it. There's nothing today that goes into effect after we vote by 10:00 o'clock that says as of 10:00 o'clock today, there is something in effect that they have to apply -- that does affect them today?

DEPUTY EXECUTIVE OFFICER CLIFF: Vice Chair, Berg, if I may. This is a voluntary certification. It will be required as part of other programs. So eventually, we expect that it would be included in any of
those funding programs, the incentive programs like HVIP. And the Board would then consider the start date that these -- this voluntary certification would be required as part of that future program.

What you will hear today -- the next item is the airport shuttle bus -- will tie this voluntary program to the requirements for airport shuttle bus. So it’s true that this is voluntary and you will be considering, after you vote on this, the Airport Shuttle Bus Regulation, which then would require the certification that is used here for that program.

VICE CHAIR BERG: But we'll be able --
CHAIR NICHOLS: And out of the box, they're going to say we're not ready, because they haven't lived with it yet.
VICE CHAIR BERG: So we'll be able to discuss timing though --
DEPUTY EXECUTIVE OFFICER CLIFF: That's correct.
VICE CHAIR BERG: -- when we talk about that at the airport shuttles?
DEPUTY EXECUTIVE OFFICER CLIFF: That's exactly right. And for any --
VICE CHAIR BERG: Okay. Thank you.
DEPUTY EXECUTIVE OFFICER CLIFF: -- future program, such as HVIP, new -- a new proposal would have to
come in front of you to change those rules for that
program.

VICE CHAIR BERG: That helps me. I'm
comfortable. Thank you.

CHAIR NICHOLS: And so I understand that this
needs to be free-standing approach, because it has its own
set of technical requirements and that you will be able to
continue working on it. But I think it's important that
everybody understands that this is going to be a
work-in-progress, and that -- I mean, from my point of
view, it's not that I'm unwilling to be updated on how
things are going. I would love to be. But, you know, if
there's going to be 51 technical changes in the
documentation every time there's a new application for a
funding program, I'm really not sure that that needs to be
coming to the Board. I'd like to think that that -- that
those changes could be made by the staff on an ongoing
basis. And if we need to take some action to direct that
that happen, I think -- I think we should do that.

VICE CHAIR BERG: And I would agree with that,
Chair Nichols. And on top of that, when we do have
hiccups and problems, they send -- they tend to make their
way to the Board.

CHAIR NICHOLS: Um-hmm.

VICE CHAIR BERG: And there also are
opportunities through public testimony at the end of every Board meeting to bring problems back to the Board. So I would agree that the details we would really like to have the staff work through and understand that we all are on a learning curve. So don't be so tied to what you perceive outcome is, keep open, because there's going to be lots of changes and lots of learning. And so we're counting on you, staff, to be the leaders in recognizing when changes need to be made and truly be proactive in that.

CHAIR NICHOLS: Thank you.
Any other comments or questions at this point.
If not, I can ask for a motion and call the question.
BOARD MEMBER DE LA TORRE: So moved.
CHAIR NICHOLS: Motion
VICE CHAIR BERG: Second.
CHAIR NICHOLS: And a second.
All right. I think with the direction that you've heard, all in favor, please say aye?
(Unanimous aye vote.)
CHAIR NICHOLS: Opposed?
Any abstentions?
Okay. Thanks. Onward.
CHIEF COUNSEL PETER: Chair Nichols, I think you closed the record, but I just want to confirm that the record is closed. I mean, you had the vote, but the
record was closed and then you voted, is that correct?

CHAIR NICHOLS: I'm sorry?

CHIEF COUNSEL PETER: I just wanted to confirm on the record that the record was closed before --

CHAIR NICHOLS: Oh, I did not formally announce that the record was closed.

CHIEF COUNSEL PETER: I'm not sure that you did. We were having that other discussion --

CHAIR NICHOLS: Yes.

CHIEF COUNSEL PETER: -- and you might have. I just missed --

CHAIR NICHOLS: No, I didn't actually say those words. I just kind of said we're done and let's get the discussion under way. So we did formally close the record --

CHIEF COUNSEL PETER: Thank you

CHAIR NICHOLS: -- before we voted.

Okay, on to 19-6-2, the proposed Zero-Emission Airport Shuttle Regulation. The first hearing for this proposal took place in February. This regulation was developed to help transition one important element of the heavy-duty sector to zero-emission's technology. And it would also fulfill a commitment in the 2016 State Implementation Plan for airport shuttles to complement existing programs to achieve NOx and greenhouse gas
reductions.

During the February hearing, there were a number of comments by members of the public and Board members. As a result, staff modified the original proposal to address these concerns. And the staff and interested parties have worked together during this process to make sure that the transition to a zero-emission future goes as smoothly as possible and that airport shuttles continue to be as reliable and clean as possible.

So we're now moving on to the actual application of what we just talked about.

Mr. Corey.

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair. Staff, as you noted, will present its final proposal for the Zero-Emission Airport Shuttle Regulation. The proposed regulation is identified in the 2016 State Implementation Plan to help contribute to CARB's air quality and climate goals while providing a bridge towards zero-emission pathways in other sectors. Previously, as noted, the Board identified this sector as one that would aid the expansion and implementation of zero-emission medium- and heavy-duty vehicles.

During the February Board meeting, many of the public and the Board supported the overall goals of the regulation. However, there were also comments that
expressed concern about various aspects of the proposal. These concerns included the need for language to address emergency use, as well as a public process to assure transparency for any requested compliance flexibility.

The proposal that will be presented today has been modified accordingly and includes added language that clarifies and addresses these issues.

With almost 1,000 airport shuttles in operation, the proposed regulation is expected to reduce greenhouse gas emissions by 500,000 metrics tons and result in a corresponding beneficial impact of about 30 million.

These enhancements to the proposal will encourage fleet owners to convert to cleaner technology, ensure that airports and other shuttle operators will have a sustainable economic path forward, and that operators will continue to have access to federal and State incentive funding during a majority of the transition period.

The updated proposal will also ensure that public and private airport shuttle fleets will be able to provide reliable, efficient zero-emission services for California airport travelers.

Staff is recommending that the Board adopt the proposed Zero-Emission Airport Shuttle Regulation. With that, I'll now ask Anthony Poggi from our Mobile Source Control Division to give the staff presentation.
Anthony.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST POGGI: Thank you, Mr. Corey. Good morning, Chair Nichols and Board members.

Today, I will present for your consideration our Zero-Emission Airport Shuttle Regulation. This is the second of two hearings on this item. In the first hearing in -- back in February, staff presented the original proposal and recommended modifications based on stakeholder comments. Additional changes, which were made available during a 15-day comment period are responsive to Board direction and additional stakeholder comments, and are reflected in the updated proposal we are bringing to you today.

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AIR POLLUTION SPECIALIST POGGI: In this presentation, I will review why zero-emission vehicle, or ZEV, technology is a good match for the airport sector and present a recap of staff's Zero-Emission Airport Shuttle proposal along with the proposed 15-day changes. I will also present the results of the final Environmental Analysis and staff's recommendations to the Board.

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AIR POLLUTION SPECIALIST POGGI: Staff developed
this proposal to fulfill a commitment in the 2016 State Implement Plan, or SIP. The SIP called for an airport shuttle measure to complement existing programs to achieve reductions of greenhouse gases and oxides of nitrogen through the use of zero-emission technology.

By transitioning airport shuttles to zero-emission technology, the regulation will help expand the reach of the first wave of this technology in the heavy-duty sector.

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AIR POLLUTION SPECIALIST POGGI: Airport shuttles present a great opportunity for this expansion. Shuttles operate up to 200 miles per day on short, fixed routes with low average speeds and stop-and-go operation. ZEVs have an advantage over internal combustion vehicles in terms of energy and fuel efficiency as well as maintenance costs when operating in this type of duty cycle.

Airport shuttles are centrally maintained and fueled, which presents opportunities for overnight and mid-day charging. As the technology evolves, costs and performance will continue to improve furthering the transition to ZEVs in the airport sector.

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AIR POLLUTION SPECIALIST POGGI: In fact, ZEV shuttles are already operating or on order at 10
California airports. This includes shuttle purchases announced since our February Board hearing by San Francisco International Airport and San Diego International Airport.

In addition to the 48 ZEVs currently operating, nearly 100 additional zero-emission shuttles have been ordered. Combined, on order, and in-use ZEV shuttles represent over 15 percent of all airport shuttles in California. This is a significant portion, but continued adoption is needed to meet our air quality and climate goals.

Outside of California, major airports in New York City, New Jersey, Atlanta, Kansas City, Indianapolis, and Raleigh, North Carolina have adopted zero-emission shuttles. These projects further demonstrate the technological and market readiness of ZEVs for airport operations.

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AIR POLLUTION SPECIALIST POGGI: The cornerstone of our proposal, which will drive the transition, is the in-use fleet ZEV requirement. In addition, we are also proposing reporting requirements and a no backsliding provision.

Beginning in 2022, fleets will be required to report the details of their zero-emission shuttles.
Starting in 2023, if fleets are replacing a ZEV shuttle, the replacement vehicle must also be a ZEV. Beginning with model year 2026, heavy-duty shuttles must comply with the Zero-Emission Powertrain Certification Regulation in order to be counted towards compliance with the Zero-Emission Airport Shuttle Regulation.

The in-use fleet requirements are phased in from 2027 through 2035 as shown here. This schedule is designed to allow fleets to remain eligible for incentive funding during a majority of the transition period, use their current shuttles for the remainder of their useful life, and provides adequate time for infrastructure planning and installation.

Throughout the transition period, CARB staff will work together with airport shuttle operators and stakeholders of other CARB zero-emission regulations to facilitate the sharing of technological information and implementation strategies.

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AIR POLLUTION SPECIALIST POGGI: Since the previous Board hearing, staff has continued to work with stakeholders while developing the 15-day changes. The changes made, include refining the language concerning compliance flexibilities of the proposal, which ensures service continuity throughout the transition period.
As discussed during the February Board hearing, staff has added language to exempt emergency usage situations. Staff has also added flexibility by allowing on-line verification and removing the three-year record keeping requirement.

In response to comments from the Board during the February hearing, staff also added language to clarify compliance dates for fleets containing one or two shuttles and added a 30-day public comment period to the compliance extension applications for greater transparency.

Staff has also continued discussions regarding the various incentive programs available to airport shuttle operators. Communication with the Federal Aviation Administration has reinforced that federal incentive funds will remain available to California airports. And, as the 2019-2020 funding plan continues to take shape, we'll use our listserve to alert our stakeholders to any new or changing incentive opportunities.

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AIR POLLUTION SPECIALIST POGGI: Economically, the switch to zero-emission vehicles will result in long-term savings. Staff has prepared an economic analysis detailing potential economic impacts. This analysis shows that zero-emission airport shuttles, like
most new technologies, may have a higher upfront cost, but they have lower operating costs than their internal combustion counterparts.

Overall, our analysis estimates that the proposal will yield cost savings of $30 million to airport shuttle operators from the year 2020 to 2040. These savings are due to reduced fuel and maintenance costs and include the use of Low Carbon Fuel Standard credits for electricity.

Although, each shuttle fleet is different, we've found that zero-emission airport shuttles have a positive payback over their useful life and overall savings begin to weigh -- outweigh the overall costs in eighth year of operation. This payback occurs even in the absence of available incentive opportunities that can reduce or eliminate much of the upfront costs of ownership.

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AIR POLLUTION SPECIALIST POGGI: Staff previously prepared a Draft Environmental Analysis, or Draft EA, for the proposed regulation and released it in January for a 45-day comment period. The Draft EA concluded that implementation of the proposed regulation could bring beneficial impacts to energy demand, greenhouse gases, and long-term air quality.

It also concluded there could be several potential -- potentially significant adverse impacts
primarily related to short-term construction activities.

While staff previously circulated proposed 15-day regulatory modifications for public review that are before you today, those modifications do not change implementation of the regulation in any way that is anticipated to affect the conclusions of the Environmental Analysis.

Staff prepared the written responses to all comments raising environmental issues on the Draft EA. These comments were received during the 45-day comment period, the previous Board meeting, and a 15-day comment period. The written responses were posted on CARB's website on June 24th as was the Final EA.

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AIR POLLUTION SPECIALIST POGGI: The analysis shows that the proposal will contribute to air quality improvement throughout the State, including low income and disadvantaged communities, especially those in proximity to major airports. The results of the analysis included statewide emission reductions of 138 tons of NOx and a 90 percent reduction in greenhouse gases from the airport shuttle sector by 2040. Although the total tons of reductions are not high, the proposal yields additional important benefits.

The deployment of ZEVs will also reduce reliance
on petroleum fuels and support job creation from the manufacturing of ZEVs, and the installation of fueling infrastructure. It will also support the SIP goal to increase adoption of ZEV technology in the heavy-duty sectors. By requiring ZEP certification, not only will shuttle purchasers benefit, but the proposal will also encourage increased manufacturing and elements like workforce training and maintenance expertise. We are committed to partnering with stakeholders to augment these processes, which will increase consumer confidence in zero-emission vehicles.

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AIR POLLUTION SPECIALIST POGGI: I'd also like to note that this proposal is only one of several efforts to reduce emissions associated with airports. South Coast Air Quality Management District is working with their airports on memorandums of understanding to achieve addition -- additional emission reductions. They hope to finalize that process later this year.

Additionally, the recently approved Senate Bill 1014, authored by Senator Skinner, requires transportation network companies to reduce greenhouse gases and transition to ZEVs in California. Staff plans to bring a proposed regulation with annual reduction targets to the CARB Board in 2020. This Clean Miles Standard regulation
will require emission reductions for ride-hailing companies, including those that operate on and around airports.

    Staff is also developing a proposal that would achieve emission reductions by requiring zero-emission airport ground support equipment.

    Finally, it should be recognized that airports have also implemented other efforts, such as electric rail and links to public transit, that may reduce their reliance on airport shuttles.

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    AIR POLLUTION SPECIALIST POGGI: Staff recommends that the Board approve the resolution, which would include approval of the written responses to comments, the certification of the Final EA, adoption of the required CEQA findings and the adoption of the proposed regulation.

    Moving forward, we will keep monitoring the status of zero-emission shuttles and market developments. We will also continue to work with airports, businesses, and other stakeholders to implement the Zero-Emission Airport Shuttle Regulation.

    This includes my presentation. Thank you.

    CHAIR NICHOLS: Thank you very much.

    We have a good list of witnesses here, so let's get started, some of them testified on the earlier item.
Welcome you back.

MS. CLAIRE GARCIA: My Chair Nichols and ARB Board members again. I'm still Claire Garcia with the Lion Electric Company.

I don't need to go over background again, but I would like to thank you for the opportunity to support the Zero-Emission Airport Shuttle Regulation. We support this regulation and believe it is a practical approach to allow airports time to plan and procure zero-emission shuttle buses, while maintaining the State's strong environmental goals and policies.

We strongly support continued funding of incentive programs as available throughout the entire life of the regulation. We look forward to continuing to working with ARB, as well as the airports across California, to deploy zero-emission shuttles.

Thank you

CHAIR NICHOLS: Thank you.

Good morning.

MR. O'DEA: Good morning, Chair Nichols, Board. Jimmy O'Dea, Union of Concerned Scientists. On behalf of our members across the state, we support this standard. And just want to point out a few points -- you know, it might seem like a smaller standard, 1,000 vehicles, and we have, you know, 1.9 million trucks and buses across the
I just want to point out what this standard means from a policy standpoint. It's one of the strongest policies I can identify to date on electric vehicle transition. A 2035 goal is at least five years ahead of what the Transit Bus Standard that the Board passed in December will achieve. So I think the Board has a lot of reasons to be proud about advancing the technology in these areas that are most suitable at a quick rate.

Second, of course, I just want to point out that for every heavy-duty vehicle you replace, there's a lot more bang for buck -- your buck than on the light-duty side. So even, you know, 1,000 vehicles on the bus side is about 7,500 vehicles on the car side from a GHG perspective.

So a good bang for their buck. And finally, as staff pointed out, this regulation is for shuttle buses. But all you have to do is look at what a shuttle bus is. And, you know, you see a Hilton logo on a Mercedes Sprinter van, and that's the same vehicle as an Amazon delivery van, just with a different logo and maybe different interiors.

So I think that this standard will really set a precedent for manufacturers to start thinking about vehicles that they make, not just for shuttle buses for
the much larger truck sector.

Thank you.

CHAIR NICHOLS: Thank you.

Yeah, it's a nice fleet demonstration program, a good size, and in a sector where there's a lot of emissions as well, so thank you.

MS. SAMBLANET: Good morning, Chair Nichols and members of the Board. My name is Paige Samblanet, and I'm here today on behalf of Earthjustice.

On behalf of the Right To Zero team at Earthjustice, I'm here to support moving forward with the Zero-Emission Airport Shuttle Regulation.

Climate change is one of largest threats we face today, and greenhouse gas emissions are a major driver of this threat. Reducing greenhouse gas emissions is not only suggested but necessary in order to prevent the global temperature from increasing past 1.5 degrees Celsius and changing life on earth as we know it.

California has always led by example by creating regulations and strategies to combat climate change and reduce greenhouse gas emissions through cutting edge innovative ideas. With such bills as the 2016 SB 32 and plans such as the 2016 Zero-Emission Vehicle Plan, it only makes sense to create a regulation such as this that will turn our airport shuttle industry into a zero-emission
The Zero-Emission Airport Shuttle Regulation helps to achieve necessary emissions reductions that California has promised in its State Implementation Plan, while doing so in a way that makes the process streamlined and produces numerous benefits.

The 2027, 2031, and 2035 benchmarks and the funding and grant opportunities provide the requested flexibilities for the industry, but also ensure the ultimate destination of a zero-emission airport shuttle fleet is actually realized.

Zero-emission shuttle technologies are also currently available, which further bolsters the fact that the transition is feasible. Currently, there are already roughly 110 zero-emission airport shuttles that are either in-use or on order in California. And numerous shuttle operators have already expressed their recognition of zero-emission vehicles being a good fit for this industry. And this just reaffirms the appropriateness and practicableness of this regulation.

And additionally, while regulations such as this that have clear greenhouse gas emissions reductions that will decrease California's emissions from the transportation sector, there's also one additionally extremely important benefit, and that's healthier air near
the airport communities.

And the goal of reducing greenhouse gas emissions and being in compliance with federal air quality standards is only truly realized by looking at the communities that benefit from the improved air quality and the improvement of community health in and around the airport shuttles.

The airport shuttles run constantly and emit air pollution along these routes. And this regulation will help to decrease transportation emissions and show these communities that their lives are important and that California will continue to go green, not just to reduce greenhouse gas emissions, but to improve lives.

Earthjustice supports moving forward with this regulation and continuing advancing zero-emission technologies.

CHAIR NICHOLS: Thank you.

MS. SAMBLANET: Thank you.

MR. BARRETT: Good morning. I'm Will Barrett with the American Lung Association speaking in support of the rule today. The Airport Shuttle Rule provides the most recent example of CARB's Dedication to protecting public health in California through the transition to zero-emission technologies. We appreciate the dedication of your staff to this important effort over the last year to two years.
This proposal keeps the SIP commitments to protect public health and to meeting our climate standards, and we appreciate you moving this forward today.

This week over 70 health organizations across the United States released a call to action on climate, health, and equity. One of the clear statements and calls to action that we made in that document was supporting the rapid transition reduction of petroleum and natural gas in the transportation sector and the transition to zero-emission technologies.

Earlier this year in California, health organizations issued a similar call that was specifically referencing the airport shuttle segment as ready for zero-emission technologies.

So we do encourage you to move forward with rule, make sure that this proposal spurs that transition we need zero-emission technologies to protect public health from combustion emission sources, especially in our most disadvantaged communities like the previous speaker noted. The airports are going to collect a lot of that local source pollution and this rule will really help to alleviate that.

So we do look forward to working with the Board and the staff going forward to make sure that as more of
these targeted very strong zero-emission technology standards come forward, that the public health community is ready to work with you to ensure that they move forward as quickly as possible to protect public health through cleaner air and a stable climate.

So thank you very much.

CHAIR NICHOLS: Thank you.

MR. LITES: Good morning. Jim Lites, Executive Director of the California Airports Council.

California airports are indeed already moving forward with electrification, as the staff report showed. In fact, the San Jose Airport is pretty much finished with the process, and Sacramento and several others not far behind. So we've been encouraged by the work with the staff and in particular conversations that will examine airport progress on complete electrification, as we do approach a date where our FAA funding eligibility for California airports for this purpose will potentially or effectively become in question. And so we look forward to those conversations as we go forward.

Thank you very much.

CHAIR NICHOLS: Thank you.

MR. LEACOCK: Good morning, Chair Nichols --

CHAIR NICHOLS: Good morning.

MR. LEACOCK: -- and the rest of the Board. I'm
Kent Leacock. I'm with Proterra, a leading manufacturer of zero-emission buses in the U.S. And rather than repeat over and over again, I will say that we have successfully deployed zero-emission buses at San Jose Airport. We will be deploying zero-emission buses at Sacramento Airport, and we will be deploying zero-emission buses at San Francisco Airport. So the technology is ready. It's here. The airports are implementing them.

And so we'd just like to congratulate the staff and thank them for their hard work over the last couple of years. This is a process that has moved very efficiently and I think it will work out well for all parties involved.

In the interests of efficiency, I didn't sign up to speak about the ZEP Certification. I know how you love efficiency, Chair Nichols. So my given time, I will also say that we support and congratulate your positive vote on the certification regulations, because we think that despite the fact that electrification is a nascent sort of industry, those types of certifications are necessary for the end consumer to ensure that the State's valuable dollars are being used to support technology that is safe and reliable. So we look forward to engaging with CARB and staff as we move forward in progressing the certification process and look forward to supporting the
growth of zero-emission in the heavy-duty sector for airports.

Thank you.

CHAIR NICHOLS: Thank you very much.

Good morning.

(Thereupon an overhead presentation was Presented as follows.)

MS. SICKLER: Good morning, Chair Nichols. Heidi Sickler with the Silicon Valley Leadership Group. Thank you for allowing me to show this PowerPoint presentation. If you'd please advance it to slide 2.

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MS. SICKLER: Silicon Valley Leadership Group is proud to be in strong support of this regulation. I want to thank you and your staff for all your hard work on it as my colleague Kent Leacock just commented. We've seen tremendous success so far at San Jose Airport, where they've deployed ten zero-emission buses along with 10 interoperable charging systems, one for each bus. And I want to take the next two and a half minutes to show one of our -- Proterra's success story with San Jose Airport. We're very proud of their work and they're one of our member companies.

So thank you for your consideration and in your leadership on this rulemaking.
CHAIR NICHOLS: Thank you. One of the things that
doesn't get highlighted enough I think is how quiet
electric shuttles are.

(Thereupon a video was played.)

CHAIR NICHOLS: Great.

(Laughter.)

CHAIR NICHOLS: Amazing.

(Laughter.)

CHAIR NICHOLS: Was that built into the video?

(Laughter.)

CHAIR NICHOLS: It should be. Thanks very much.

That was great.

MS. McGHEE: Good morning. San Diego Airport

San Diego Airport Parking really does appreciate
this measure. However, I am concerned with two of the
items associated with the measure. The kilowatt hour used
as fuel for commercial use is not reflected based on
real-world use. Kilowatt hour prices change by time of
day, by season, or hourly. The electric prices are an
average of the California market for facility and
residential uses. This does not reflect its use as fuel
for commercial vehicles that are exposed to high demand
fees.

SDG&E trends since 2005 is 9 percent higher than
PG&E and SCE. It is higher than the Consumer Price Index. Please consider an accurate kilowatt hour price analysis in San Diego, as operators in San Diego will face the burden of higher kilowatt hour cost when driving ZEVs.

Number two, again, the Class 2b and 3 vehicles will not fall within this measure. 19,500 active vehicles exist in ground transportation operators at LAX, San Francisco, and San Diego and results in 10.7 million trips annually. However, only 752 vehicles, or 4 percent, are incorporated by this measure out of the 19,500 ground transportation vehicles.

What is interesting, 4.4 million trips out of the 10.7 million trips annually could potentially be ZEV miles if the Class 2b and 3 vehicles were part of this measure.

However, due to the fact that Class 2b and 3 are not included, this will continue to make these adopters of this class as taking risk without a ZEP certification.

This also eliminates an opportunity of 1.8 million annual trips, which is 300 vehicles or 40 percent of the on- and off-airport vehicles. Please, consider supporting all classes of the on- and off-airport vehicles to reduce another 1.8 million annual trips to ZEV miles at the large California hub airports.

Use cases by airport operators. Just as an example, San Diego Airport Parking Company has -- you
know, we're parking close to 700 to 1,000 vehicles every day. We're parking those vehicles for the customers that go to the airport and they stay for an average of three to five days. These are opportunities that we have to continue to impact electrification.

In addition to that, our fleet miles traveled are 600 miles a day. And we're a small operator. So we all are using a lot of miles daily running at 24/7 operation, which continues to find ways that we could support electrification, if you can continue to find ways to help support this measure for us.

Thank you.

CHAIR NICHOLS: Thank you.

Sorry. Do we have Vincent?

If not, we can move on to Mr. Rushing.

MR. RUSHING: I am not Vincent.

CHAIR NICHOLS: Who are you?

(Laughter.)

MR. RUSHING: Good morning, Madam Chair and Board Members.

CHAIR NICHOLS: Hi.

MR. RUSHING: My name is Rocky Rushing.

CHAIR NICHOLS: Hi, Rocky.

MR. RUSHING: I'm representing the Coalition for Clean Air.
CHAIR NICHOLS: Thank you.

MR. RUSHING: CCA ports the Zero-Emission Airport Shuttle Regulation and thanks staff and stakeholders for the hard work that has brought this proposal before you today. Converting California's airport shuttle to zero-emission is one factor in a many faceted equation to meet our state's air quality, greenhouse gas reduction, and public health targets.

The transportation sector is California's hard nut to track when it comes to combating climate change and meeting federal air quality standards.

In the South Coast Air Basin, home to about half of California's population, more than 80 percent of smog-forming NOx can be attributed to mobile sources. Statewide, they're responsible for 50 percent of GHG emissions. As others have mentioned, this regulation was included in the 2016 SIP, so we're happy to see it reach the Board for a final vote today.

The timeline for total fleet transition to 100 percent zero-emission by 2035 will give airports and fleet operators ample time to plan and seek incentive dollars before the first fleet requirements take hold in 2027.

In addition to the air quality improvement, this regulation will bring the communities surrounding airports. Moving California's airport shuttle buses to
zero emission will assist other medium- and heavy-duty players in the transportation sector to make that transition as well.

The emission benefits of this and similar regulations, coupled with our electrical grid moving to 100 percent renewable by 2045 will move California closer to a carbon free future.

Thank you for your consideration.

CHAIR NICHOLS: Thank you.

Ms. Collins.

MS. COLLINS: Hi. Good morning. My name is Mei Collins, and I'm a current college student in support of the proposal on behalf of CALPIRG and Environment California.

We are thankful for the steps that California has taken to state at the forefront of climate action by committing to carbon-free electricity by 2045. This measure is yet another step to achieve that goal and is especially important to protect the health of Californians.

Activity at airports produces significant amounts of ozone and other harmful chemicals contributing to a lack of attainment to federal ozone standards in many portions of the state.

Transitioning to zero-emission airport shuttles
means that the millions of travelers arriving in California will have the confidence of a breath of fresh air upon landing in the Golden State.

Thank you for your time.

CHAIR NICHOLS: Thank you.

Mr. Kenny.

MR. KENNY: Hi. Good morning, Chair Nichols, members of the Board. My name is Ryan Kenny with Clean Energy. We are the nation's largest provider of renewable natural gas transportation fuel.

And I come before you in the spirit of collaboration. As you may recall, our company and industry was concerned about this moving forward. And some of the issues that we have with it is that we do believe it's overly optimistic, based on timeline and cost. We are concerned that it does underestimate the potential public health and economic cost to society, and not incorporated in the overall strategy, both on a short-term and near-term timeline.

We also are concerned that it's not as cost effective by having an overall strategy with both near-zero and zero, and that we also provide immediate solution, whereas this may take some time to be implemented. We're also a non-fossil solution with the renewable natural gas.
That being said, with this very likely moving forward this morning, the near-zero industry is ready to support our customers should there be any issues with implementation. We also would like to be considered a partner with ARB to ensure that no backsliding occurs in or around the airport facilities.

So please take that into consideration as this moves forward. I'd like to make one also -- one point also, that there is a general sentiment that if this does not move forward as planned, as far as implementation, that ARB could just amend this at a later date. And I think that might be a sentiment across other programs and rulemaking as well.

But I would like to add that market certainty is important. Business investment is important. And the signals provided to the business community are heard loud and clear. So as this moves forward and near zero is phased out, those decisions will be made. So we'd like, you know, the Board to take that into consideration as well in a more long-term strategy with the business community.

Thank you.

CHAIR NICHOLS: Thank you. Appreciate your comments.

MS. KATHERINE GARCIA: Good morning, Chair
Nichols and Board members. I'm Katherine Garcia, Policy Advocate for Sierra Club California. And on behalf of our 400,000 members and supporters statewide, we strongly support the proposed Zero-Emission Airport Shuttle Bus Rule.

California has made adequate funding available through incentive programs to assist airport shuttle bus fleet operators in paying for the capital costs for transitioning to zero-emission shuttle buses.

It is noteworthy that the additional revenues received from these grants, the total cost of ownership becomes even less, producing more savings for operators. This proposed rule is both economically feasible and cost effective.

The Zero-Emission Airport Shuttle Bus Rule offers many benefits, including reductions in criteria pollutants especially in disadvantaged communities, reductions in greenhouse gas emissions to mitigate climate change, growth of the California economy, creation of good -- excuse me, good paying jobs, improvements in worker health, and long-term financial savings for airports and shuttle operators.

California is offering a model for the nation and the world on how airports can successfully transition to zero-emission vehicles.
Thank you to the CARB staff for working on this project. Sierra Club California urges CARB to approve this measure today.

CHAIR NICHOLS: Thank you.

And last, CalETC.

MS. GOLDSMITH: Hi. Hannah Goldsmith with the California Electric Transportation Coalition. And I will briefly say that Vincent Wiraatmadja let me know that he had to run. He's here on behalf of BYD and they support the measure.

So we also support the proposed measure. And we particularly support the proposed regulation achieving 100 percent zero-emission airport shuttle fleets in California by the end of 2035. This measure is an important step to transition the state's fleets to zero-emission vehicles and realize our climate change and clean air targets.

We believe the proposed regulatory timeline is appropriate. It allows for about seven years of planning time before the first regulatory purchase requirements kick-in at the end of 2027.

We hope that this timeline will encourage fleets to take advantage of both vehicle and infrastructure incentive opportunities in the near term. And I will note that we are comfortable with the link in this rule to the Zero-Emission Powertrain Certification Program, because it
We appreciate staff's commitment to involve us and other stakeholders throughout the development of this proposed regulatory concept.

Thank you.

CHAIR NICHOLS: Thank you.

And we do have one card that just came in from ChargePoint.

MS. LEUMER: Thank you, Chair Nichols and members of the Board. My name is Alex Leumer and I'm here on behalf of ChargePoint to provide strong support for the Zero-Emission Airport Shuttle Regulation.

This rule builds on the policy framework that CARB established through the Innovative Clean Transit Regulation and will support the adoption of clean electric transportation at airports throughout the state.

At the -- as the largest electric vehicle charging network, ChargePoint looks forward to working with airport fleet operators to help fuel this new fleet of zero-emission shuttles and to help our airports continue to be leaders in sustainability.

I would like to thank the staff and the Board for your leadership on supporting the electrification of the medium- and heavy-duty sector. And I respectfully ask for your aye vote.
Thank you.

CHAIR NICHOLS: Thank you. And that does concludes the list of witnesses. Does staff have any comments that they want to make? I think you've got nothing but support here. So I'm not sure that you need to respond to anything, but if you feel like you do.

No.

Okay. Any questions?

Yes, Supervisor Serna.

BOARD MEMBER SERNA: Thank you, Chair.

I'm certainly prepared to move the item at the right time after my colleagues have their opportunity to make their comments. But I guess I wanted to just issue a statement or perhaps form it as a question for our staff. And that is, given the fact that airports naturally kind of have the, you know, appropriate characteristics for the deployment of zero-emission shuttles, what, if anything, are we doing to look at, for instance, our public campuses, our university systems here in the state of California? It seems to me that that presents an even greater opportunity for us to take advantage of kind of the right environments for fixed route, to deploy even more zero-emission shuttle vehicles.

So I don't know if there's an answer to that. But if there's some comments that staff want to offer in
that regard, I'd like to hear that.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:

Certainly, Supervisor. This is Jack Kitowski.

You may remember in the transit area, I think your point is right on, the campuses were some of the leading people even before the transit agencies in utilizing zero-emission shuttles. So we have worked with them. We've provided funding with them.

In regard -- and we've done outreach and coordination with them. In terms of regulatory aspects, there -- they were not part of the transit rule. They're not part of this. They don't quite fit. But they will be part of the broader Advanced Clean Truck Rule -- truck and bus really.

You know, we've talked at this Board about sort of the Google shuttles as well. And so a preview of what you'll be getting in December, we're going to be coming in December with a proposed rule that will be targeted at the manufacturers to make sure they start building a certain number of these vehicles over time, as well as a second part of that is going to be a reporting requirement by fleets throughout the state, so we can better assess how to target sort of the second stage of that. And then we're going to come back in a couple of years with appropriately structured fleet rules. And so the campuses
would be part -- wrapped into that part of it.

BOARD MEMBER SERNA: Great. Thank you.

CHAIR NICHOLS: Other comments?

Starting down on the end. Ms. Takvorian.

BOARD MEMBER TAKVORIAN: Thank you.

I just wanted to express my appreciation for the staff and the work that you've done to bring us to this point and the 15-day changes. I think that you've been really responsive to the comments in the hearing that we had previously.

I also want to appreciate all of the folks in the community and the industry who have come forward and worked with you. It's -- I think it's a huge step that we're taking and one that we should really notice as very important. I was particularly pleased with the emergency response -- or the emergency utilization provision that you included. And I also appreciated the incorporation of the impacts on disadvantaged communities. And while we noted that airports are often adjacent to or in disadvantaged communities, I also wanted to note that both storage yards and maintenance facilities for these shuttles are often in disadvantaged communities as well.

So I think we're having an impact as we electrify these vehicles as we go forward. So I'm happy to second Supervisor Serna's motion when he makes it.
CHAIR NICHOLS: Great. Well, we can have a motion on the floor at this time and still have any comments from Board Members who would like to comment further.

Dr. Sherriffs.

BOARD MEMBER SHERIFFS: Thank you.

Great presentation. Appreciate all of the testimony. So already 15 percent of the shuttles overall are electrified. We've got examples like San Jose that are 100 percent. And we have a couple of other airports that look like within the next year or 18 months are going to be 100 percent. What percent of those have we incentivized? Do we have California climate investments or other -- any guess?

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:

Actually, surprisingly maybe, very little of those. They've been available. Our funding has been available to them, but they've gone either -- they've gone other routes to get funding for those programs. We're starting to see a little bit of interest through the HVIP Program now.

BOARD MEMBER SHERIFFS: Okay. Great. You know, looking at the timeline and hearing about the successes already, you know, boy, eight years to double the percent that are currently electrified going from 15 to 30, 33
percent, 16 years to go to full electrification. In some ways, it seems like a long time given the demonstrated success. And I guess I would also recognize one thing, because I know staff has worked very hard with the stakeholders on this, obviously, it's more difficult than that, and one size doesn't fit all, different solutions for different airports. And it is a complex problem.

But I guess I also look and think about the success. And looking 16 years to 100 percent, boy, I think we need to think about the things we can do to help people get there quicker, because clearly it's quite feasible, technologically it's feasible. It's not a big leap.

So I want to be sure that it's not, okay, great job. There's great agreement. Done. Onto the next thing.

No, I think there's still a lot of work to do with this. And lots of the benefit, I think, will come from us helping people adopt well before 2035, because that is -- that is so possible.

MOBILE SOURCE CONTROL DIVISION CHIEF KITOWSKI:
Yes, Dr. Sherriffs. I would agree with you. Similar to our strategy on transit, we are going to be taking the implementation of this very seriously in what we can do. And I can envision a scenario where we reach a
tipping point and it moves faster than the regulation in
front of us, and that's a great thing.

But I think the regulation is set in a sort of
sound methodical way. There are real issues in terms of
infrastructure to work through, workforce training, you
know, sort of a build-up that, you know, we need to make
sure it's done right and don't take the market. But I'm
in complete agreement with your comment.

CHAIR NICHOLS: Great. Thanks.

Anybody else?

BOARD MEMBER RIORDAN: Madam Chair?

CHAIR NICHOLS: Yes, Ms. Riordan.

BOARD MEMBER RIORDAN: One of the things that
occurs to me is we are moving forward on this, which is a
great program, great opportunities. We also in terms of
transit, we're moving forward on that.

I think we need to always be in touch with the
producers of these vehicles to make sure that they are
able to fill what may be many, many orders. And that if
there are things that we need to do to monitor that
capability, we've certainly had the support of our
buildings, but there may be some constraints there truly,
which will be exciting, but albeit maybe delaying some of
our accomplishments. So I would just suggest staff remain
pretty close to those builders.
CHAIR NICHOLS: Good point.

If there are no further comments or questions, why don't we call the question.

I will close the record at this time and remind everybody that this is the second of two votes on this item. So this is the -- this is the final vote. And once we act, it will -- the rule will be sent off and go into effect.

So without further ado.

All those in favor, please say aye?

(Unanimous aye vote.)

CHAIR NICHOLS: Opposed?

It passes unanimously. Thank you very much and good work. Congratulations.

Okay. We're moving quickly through our agenda this morning.

BOARD MEMBER RIORDAN: Good for us.

CHAIR NICHOLS: Good for us, yes.

The next item, as people are beginning to take their seats, is the public hearing on Electric Vehicle Supply Equipment Standards, which was developed in response to Senate Bill 454. And I would note that we're not in compliance with the original timeline, but I think there's a good reason, which is that this has proven to be somewhat more difficult than was originally expected.
So this law requires the payment hardware, labeling, and an interoperable billing standard. The proposal is intended to provide the greatest possible access to public charging for public -- for plug-in electric vehicles drivers regardless of whether they're a member of any particular group that has sponsored that particular charging station.

The proposed regulation establishes requirements for payment hardware, consumer labeling, and interoperable billing or roaming standards, and data reporting.

It's an important regulation for removing the barriers to ZEV adoption. We know that current ZEV owners already express frustration with the situation when it comes to being able to use charging stations that look like they're publicly available. And we know for a fact that as we move beyond the early adopters into the realm of what you might call normal consumers, people are going to expect an experience which is something closer to what they have today with the existing system with fueling.

So it's important that we're taking steps to simplify this consumer fueling experience and improve access to the charging infrastructure that California is now building out with a considerable investment of public as well as private dollars.

Mr. Corey, would you please introduce this item?
EXECUTIVE OFFICER COREY: Yes. Thanks, Chair Nichols.

We routinely area that varying access and payment methods at existing public charging infrastructure confuses and inconveniences plug-in electric vehicle drivers. If a driver is not a member of a given network, they may not be able to initiate a charging session. If they are successful, they may still encounter unclear charging session pricing.

In 2013, the California Legislature adopted Senate Bill 454, the Electric Vehicle Charging Stations Open Access Act. This legislation established a series of requirements for public charging stations, including payment methods, pricing disclosure, and location reporting.

Staff assessed progress by charging infrastructure provided -- or providers over the past several years and believe regulatory requirements are appropriate and necessary for meeting the statute's intent.

Staff's proposal creates a minimum standard of access for public electric vehicle charging, facilities[SIC] roaming agreements between charging infrastructure providers, creates a more complete database of charging station locations and pricing information for
consumer use, and ensures transparency in the price of a charging session.

These requirements will provide all electric vehicle drivers greater confidence in accessing charging infrastructure in California.

I'll now ask Stephanie Palmer of the Sustainable Transportation and Communities Division to begin the staff presentation.

Stephanie.

(Thereupon an overhead presentation was presented as follows.)

AIR RESOURCES ENGINEER PALMER: Thank you, Mr. Corey. Good morning, Chair Nichols and members of the Board. I am here today to present staff's proposed Electric Vehicle Supply Equipment standard.

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AIR RESOURCES ENGINEER PALMER: The requirements presented today affect manufacturers and operators of Electric Vehicle Supply Equipment or EVSE. This slide provides examples of the fueling infrastructure for electric vehicles. And EVSE is similar to the pump at a gas station. Fueling sessions are initiated and ended by users, and the unit controls the flow of electricity to the vehicle.

The connector or charger on an EVSE is like the
nozzle at a pump. Connectors plug into a vehicle and enable electricity flow from the EVSE to the vehicle. The hardware and software requirements of this regulation pertain to the EVSE and not to connectors.

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AIR RESOURCES ENGINEER PALMER: California's need for plug-in electric vehicle infrastructure is well recognized. In conjunction with the 2017 Climate Change Scoping Plan, Governor Brown issued an Executive Order in January 2018 directing California's State agencies to work with the private sector and other appropriate levels of government to spur the installation of 250,000 plug-in electric vehicle chargers, including 10,000 direct current fast chargers by 2025 to support the State's goal of over 1.5 million zero-emission vehicles on the road by 2025.

The Executive Order also established a target for five million zero-emission vehicles on the road by 2030. The proposed regulation will facilitate consumer access in use of this needed and anticipated infrastructure.

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AIR RESOURCES ENGINEER PALMER: California currently has approximately 5,200 station locations with 1,159 public direct current fast charger EVSE and approximately 8,800 hundred public Level 2 EVSE. These two categories represent approximately 20,600 publicly
accessible electric vehicle charging connectors to serve light-duty vehicles.

A larger number of charging connectors are located in non-public spaces, such as private residences, multi-unit dwellings, and private workplaces or fleet yards, which are not accounted for in the public connector account shown here.

Just like at gas station pumps EVSE may have multiple connectors refueling a vehicle at the same time. Of the station locations that are fee-for-service, there are 566 locations that are installed in disadvantaged communities. CARB staff worked with the National Renewable Energy Laboratory, or NREL, Alternative Fuels Data Center staff, to obtain this EVSE count.

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AIR RESOURCES ENGINEER PALMER: A variety of methods are used to access public networked EVSE. Drivers may use an RFID card issued by a network, a mobile application tied to a singular network, a mobile application that reads QR codes, or in limited cases a credit card to initiate a charging session.

Use of RFID cards and mobile apps require drivers to sign up for a membership with a network service provider. Membership includes, but is not limited to, registering with a cell phone number, email address,
credit or debit card, agreeing to be assessed a monthly fee, having funds reserved on a credit card by the network service provider, and loading a set amount of funds into the membership account, which may auto reload.

Many drivers become members of several charging infrastructure networks in case they need to use an EVSE in that network. Staff developed this proposed regulation in response to Senate Bill 45 by Senator Corbett to ensure easy access to EVSE.

Staff's proposal is intended to achieve that goal by ensuring that consumers have a similar experience fueling plug-in electric vehicles as they have fueling gasoline vehicles. Under the proposed regulation, drivers will be able to drive up to an EVSE, see a ubiquitous and easy-to-recognize payment method, and quickly initiate a charging session.

Under Senate Bill 454, drivers would not have to become a member of any network service providers.

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AIR RESOURCES ENGINEER PALMER: Senate Bill 454, Electric Vehicle Charging Station Open Access Act was signed into law in 2013 and requires the following:

Drivers wishing to use any public EVSE shall not be required to pay a subscription fee or become a member. Drivers shall have the choice of paying with a credit card
or mobile payment or both. All fees that are assessed at
the EVSE shall be disclosed at the point of sale. All
publicly available EVSE shall report the station location
to the Alternative Fuels Data Center. And lastly, the
adoption of an interoperable billing standard will
facilitate driver roaming between networks.

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AIR RESOURCES ENGINEER PALMER: Improved driver
access to charging infrastructure has many benefits.
Current plug-in electric vehicle drivers will have greater
confidence in using public infrastructure resulting in
greater utilization of the infrastructure and therefore a
higher usage of electric vehicles.

Drivers will have payment options that do not
require membership in a network or providing personal data
to network providers. Lastly, new plug-in electric
vehicle drivers will have an easier time fueling their
cars in public with consistent and familiar payment
methods.

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AIR RESOURCES ENGINEER PALMER: CARB staff worked
with stakeholders representing charging network providers,
infrastructure manufacturers, utilities, automakers, and
environmental organizations individually and collectively
for nearly two years to develop the proposed regulation.
Two stakeholder working group meetings were convened to discuss which different payment methods would be the most ubiquitous. Public workshops and webinars were held to discuss regulatory concepts and proposed requirements.

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AIR RESOURCES ENGINEER PALMER: The proposed regulation has six parts: payment methods with proposed modification, roaming standards, display of fees, labeling, consistent, reporting with proposed modifications, and penalties.

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AIR RESOURCES ENGINEER PALMER: Staff's proposed payment method requirements are based on the Senate Bill 454 requirement that an electric vehicle charging station, which requires a payment of a fee, shall allow a person desiring to use the station to pay via credit card, or mobile technology, or both. The proposed minimum form of payment hardware required for EVSE that assesses a fee for use is the EMV chip reader and a Near Field Communication reader that accepts mobile wallet payments.

Network providers will also need to comply with industry data security standards. Payment hardware may be located on the individual EVSE or a kiosk. This flexibility allows the network providers and site hosts to
choose which method better suits their needs. These images show the EMV chip on the left and the NFC symbol on the right.

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AIR RESOURCES ENGINEER PALMER: Credit and debit cards are the most common form of payment available to the largest consumer base. The payment industry has pushed to have the Euro MasterCard Visa chip, or EMV chip, as a minimum standard for data security reasons. It is ubiquitous for consumers.

Near Field Communications, or NFC, is used to enable mobile payment solutions for driver choice. These payment methods are important because drivers should have the choice to become a member of a network if that fits their needs, not as a requirement to use an EVSE.

All drivers -- not all drivers have smartphones nor should that be a requirement for using public EVSE.

Lastly, payment methods that do not rely on cell phone service are important, because even in this age of advance technology, there are plenty of parking locations that have poor to no cell reception.

Staff appreciates all of the stakeholders' comments submitted during the 45-day comment period. Stakeholders have stated that the EMV chip technology is outdated, costly, and especially should not be required
for Level 2 EVSE.

Stakeholders have also stated that roaming agreements will eliminate the need for the credit card requirement as drivers with a single membership will be connected to most, if not all, publicly available EVSE.

While staff is encouraged by the announcements from the network providers regarding roaming agreements, the details and timelines for full implementation have not been released. Staff proposes to keep the EMV chip requirement, because it is the most ubiquitous payment method available to drivers. It should be available on Level 2 EVSE as well as DC fast chargers, just as other services that are in similar locations as public charging infrastructure already deploy EMV chip readers.

An example is curbside parking meters as shown on the right. These meters are remote, incorporate network communications, and are used in varied environments.

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AIR RESOURCES ENGINEER PALMER: The new hardware installation compliance dates and the publicly released staff report are July 1, 2020 for DC fast chargers and July 1, 2023 for Level 2.

The staff report presents a five-year phase-in period for hardware compliance based on the existing EVSE open date. Existing DC fast chargers must meet payment
hardware requirements by July 1, 2020 or five years from their open date, whichever is longer. Existing Level 2 EVSE must meet payment hardware requirements by July 1, 2023 or five years from their open date, whichever is longer.

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AIR RESOURCES ENGINEER PALMER: Since issuing the Initial Statement of Reasons, staff has continued to work to address a number of issues raised by stakeholders. It has been brought to staff's attention that infrastructure contracts may have an automatic noncompliance issue. This is due to the amount of time it takes to design, permit, construct, and interconnect an EVSE. Staff is recommending modifications to extend the new DC fast charger new installation compliance date to January 1, 2022.

This will give sufficient time for current projects under contract or committed under government funding programs to complete installation before new hardware requirements come into effect.

Stakeholders have also commented that the useful life of an EVSE is 10 years. Staff recommends compliance with the payment hardware requirement upon replacement but no later than July 1, 2033 for all existing DC fast charger and Level 2 EVSE.
The above-recommended modification ensures that an expected 10-year useful life will be available to all existing EVSE and preserve the investments made by the State, private parties and industry.

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AIR RESOURCES ENGINEER PALMER: Senate Bill 454 states if no interoperability billing standard has been adopted by a national standard organization by January 1, 2015, the State Board may adopt interoperable billing standards. Staff proposes that all network providers install and maintain the California Open Charge Point Interface Test Procedures for networked EVSE. The test procedures codify Open Charge Point Interface 2.1.1, an open source communications protocol widely used in Europe. The timeline to implement this standard is one year after the effective date of the regulation. Additional communication protocols, such as Hubject's Open Intercharge Protocol, may be used as well.

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AIR RESOURCES ENGINEER PALMER: Drivers currently sign up for a membership with a network provider to use the public EVSE associated with the network. Each network maintains its own membership. As a result, drivers often have multiple apps and RFID cards to carry around if they expect to be using multiple networks to meet their public
charging needs. Adopting a standard lays the foundation for networks to enter into roaming agreements using a singular common standard.

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AIR RESOURCES ENGINEER PALMER: Senate Bill 454 states, "the total actual charges for the use of an electric vehicle charging station, including any additional network roaming charges for non-members, shall be disclosed to the public at the point of sale".

It is important that drivers know the full extent of what they are paying when initiating a charging session to avoid any unexpected fees. The sale of electricity as a transportation fuel must be displayed in dollars per kilowatt hour or the dollars per megajoule to be consistent with the California Department of Food and Agriculture, Division of Measurement Standards requirements. The display of fees must also include a parking fee, non-member, and general plug-in fees, if applicable.

The implementation timeline for this requirement follows the proposed timeline for the payment methods, July 1, 2020 for all new DC fast charger and July 1, 2023 for all new Level 2 EVSE.

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AIR RESOURCES ENGINEER PALMER: Senate Bill 454
states electric vehicle charging stations shall be labeled in accordance with Part 309, Title 16 of the Code of Federal Regulations. This label is useful to drivers because it confirms the EVSE will dispense electricity, the rate and amperage of which the EVSE is capable of dispensing electricity, and the manner in which the electricity is dispensed, conductive or inductive.

All publicly available EVSE shall have this label installed by July 1, 2020 for DC fast charger and July 1, 2023 for Level 2 EVSE.

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AIR RESOURCES ENGINEER PALMER: Staff is proposing modifications to extend the timeline for implementation of the consumer information and labeling requirements for DC fast charger to January 1, 2022.

This change aligns the labeling requirements with the proposed modified payment hardware compliance date. It is important to align with hardware requirement implementation dates, so network providers will not have to make more than one site visit.

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AIR RESOURCES ENGINEER PALMER: Senate Bill 454 states that, "the service provider of electric vehicle service equipment at an electric vehicle charging station or its designee shall disclose to the National Renewable
Energy Laboratory the electric vehicle charging station's geographic location, a schedule of fees, accepted methods of payment, the amount of network roaming charges for non-members, if any”.

The purpose of having networks report to NREL's Alternative Fuels Data Center is to have a single public repository of data that drivers can access. The information that is reported to the Alternative Fuels Data Center will also be used for compliance tracking by staff.

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AIR RESOURCES ENGINEER PALMER: Reporting requirements include station location reporting to the National Renewable Energy Laboratory and initial and annual reports to CARB. Service providers must report new and retired station location information at least on a monthly basis to the national lab.

The initial reporting will begin 45 days after the effective date of the regulation. Initial reporting will be used to create a baseline database of existing EVSE and identifies a single point of contact for the network provider.

The first annual report will be due March 1st, 2021 for calendar year 2020. The annual reporting requirement includes a listing of new, retired, and decommissioning EVSE and pricing payment and uses metrics
reported per EVSE.

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AIR RESOURCES ENGINEER PALMER: Staff is recommending modifications to the annual reporting requirements in response to stakeholder comments received during the 45-day comment period.

Stakeholders have indicated that the annual report requirement for total number of charging sessions started with each payment type is difficult to do per EVSE. Staff recommends that the total number of charging sessions started with each payment method be reported in a statewide aggregated number instead of per EVSE.

The first report will be moved to be due March 1st, 2022 for calendar year 2021. The proposed modifications also clarify that EVSE not requiring fee for use are not subject to annual reporting requirements pertaining to payment.

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AIR RESOURCES ENGINEER PALMER: If a service provider fails to comply with the proposed regulation, they may be assessed a penalty per violation. Failing to meet the labeling requirement may result in a $300 fine. Failing to meet the payment method requirement may result in a $600 fine. Failing to implement the roaming standard may result in a $1,000 fine. Failing to comply with
reporting requirements may result in a $600 fine.

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AIR RESOURCES ENGINEER PALMER: Staff conducted an economic analysis of the proposed regulation and completed a Standard Regulatory Impact Assessment report that was filed with the California Department of Finance.

For the given time frame from 2020 to 2030, the baseline regulatory cumulative costs are estimated to be $115 million. The estimated hardware cost for the payment methods is $379 per EVSE.

The cost estimate for the hardware is conservative and is expected to drop over time. The majority of the projected costs arise from the rolling five year phase-in requirement for existing EVSE. With the proposed modifications presented today, the estimated costs are expected to decline to approximately half of what was estimated in the public staff report.

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AIR RESOURCES ENGINEER PALMER: Staff recommends that the Board approve the proposal with staff's additional modifications to standardized public charging infrastructure consumer access. Staff will continue to work with stakeholders throughout implementation and will continue to monitor payment, hardware changes, and any growing market trends that promote consumer access to
EVSE.

We are committed to revisiting the regulation in the future, if we determine that the credit card requirements become obsolete or no longer serve the goals of the regulation.

This concludes my presentation.

It is now my pleasure to introduce Senator Ellen Corbett the author of Senate Bill 454. Senator Corbett represented California's 10th District in the California Legislature from 2006 through 2014 and served as Senate Majority Leader in 2010 through 2014.

Senator Corbett.

SENIATOR CORBETT: Thank you very much. It's a pleasure to be invited to be here today. As the person introduced me, I was the author of SB 454. And it's really great to see the regulations being put together today.

I'm sure you want me to tell you a little bit about the intent of the measure. And obviously, if I could sum it up in one word, it's "access". There's a reason that the bill was called the Electric Vehicle Charging Station Open Access Act.

One of the most important things we wanted to do was to create consumer confidence in the use of electric vehicles. And clearly, individuals who were starting to
purchase electric vehicles, it was a newer technology six years ago and people had questions about how far can this vehicle take me? Can it take me to work and back?

We wanted to make sure that this legislation created a situation that it was just as easy and common as understandable as pulling into the gas station and fueling your car.

Obviously, the staff report has talked about how the bill is interested in ensuring that there are easy payments -- easy payment methods, that there's an opportunity for the posting of prices, and obviously, that there is location information.

We wanted to make sure that people had a knowledge of the costs, they knew once they got in the car where the could fuel up along the way, and obviously, most importantly, the form of payment needed to be very easy and accessible to all. That's why the requirement for card leaders. And I don't think need to talk any -- anybody -- anymore about those details, because the staff report has very clearly talked about the importance of that.

So I would encourage you to pass regulations today. I think it is very important if we're going to reach our goals. The Legislature has had many conversations in the Governor's office, many conversations
about the important of reaching our goals, and all of the
benefits that that brings to us, including doing what we
can to stop global warming. So I will be available for
any questions that you may have.

But once again, very clearly, this intent is all
about access. And it was not a bill that was introduced
to create barriers for charging of electric vehicles, but
to a allow for very, very easy access just as simple as
gassing up your car.

So thank you all very much and look forward to
any questions you may have.

CHAIR NICHOLS: Thank you for coming and sharing
your experience on this issue with us. It's really good
to see you.

Thanks.

SENATOR CORBETT: Thank you so much. And the one
last thing I would just say, I very much hope that
whatever regulations are adopted today, they can move
forward as quickly as possible. I understand that there
have been conversations to try to make sure that we listen
to both sides on this issue, but the sooner the better. I
think it's very important. And after all, this bill was
signed in 2013, so I think it's time to move forward.

Thank you very much.

CHAIR NICHOLS: It's time. Thank you.
very much.

Excuse me. Oh, we have question from Dr. Sherriffs

BOARD MEMBER SHERIFFS: Yeah. I had one little question. Access was the intent.

SENATOR CORBETT: Yes.

BOARD MEMBER SHERIFFS: Regardless if it's -- the ambiguity potentially of some of the language, but access is the intent, as easy, and simple, and could I add as familiar --

SENATOR CORBETT: Absolutely.

BOARD MEMBER SHERIFFS: -- as what we do --

SENATOR CORBETT: As familiar as possible.

BOARD MEMBER SHERIFFS: -- for fueling our vehicles?

Okay. Thank you.

SENATOR CORBETT: It's the same mindset you would have when you jump in the car in the morning and you know you might need to get some fuel on the way to work, you would have all the information you need, cost, location, and you'd have your debit card in your pocket, so you could pay.

BOARD MEMBER SHERIFFS: Thank you.

SENATOR CORBETT: You're welcome.

CHAIR NICHOLS: Thanks.
Okay. We do have substantial list of witnesses. The first page has just arrived. I understand we've got more on into a second page. And it appears as though they're actually fairly evenly split between supporters and opponents of the proposal, so that will make it interesting.

And I think we should just get started. I would note though that with that many witnesses, this is going to take a lot of time and we want to really be able to listen. So I think we should plan on taking our break somewhere in the middle and not trying to finish the item up. That would be my thought.

So if that's the case, I think if you'll agree with me, that we should try to go to 12:15 or so, 12:15?

VICE CHAIR BERG: I just checked with the court reporter and if we could go till 12:00 o'clock.

CHAIR NICHOLS: Is the court reporter ready to --

VICE CHAIR BERG: No, 12:00 o'clock he said.

CHAIR NICHOLS: Oh, 12:00 o'clock. Okay. Fine. Then we'll continue until 12:00 and then take a break.

(Laughter.)

CHAIR NICHOLS: We work for the court reporter.

(Laughter.)

CHAIR NICHOLS: He is more essential than any of us. Okay. Thanks. That will be great.
Let's get started then with Anna Alvarado from San Jose. Good morning.

MS. ALVARADO: Good morning, Chair and members. Anna Alvarado with Cruz Strategies on behalf of the City of San Jose. The San Jose supports the Board's goal to increase access to EV service equipment, but do have some concerns and three recommendations for the Board.

One, that the Board allow local agencies to grandfather current charging stations and only apply the proposed rulemaking when stations are upgraded with new equipment. Two, for ARB to be cognizant of the innovations surrounding payment in this space to prevent obsolescence and stranded assets. And three, encourage ARB to work with statewide and local agencies in developing the proposed regulations with CALeVIP, which will help limit redundant data, collection, and reporting.

And I'd also like to reiterate the importance of extending the compliance timeline for all existing EVSE to the time of replacement, but no later than 2033. So we really look forward to working with you all and thank you for your time.

CHAIR NICHOLS: Thank you.

MS. HAHN: Good morning, Chair Nichols and members of the Board. My name is Jenna Hahn and I'm here with -- on behalf of the City of Sacramento.
I'm here to express the City of Sacramento's strong support for the proposed extension to the compliance timeline that CARB staff presented today. We commend staff for their hard work on this complex issue, and we appreciate the ongoing engagement we've had over the past year.

Sacramento is committed to becoming the ZEV capital of California with programs and policies dating back to 1994. We currently operate 54, mostly grant funded, public Level 2 EVSE, and we are working to dramatically increase public charging installations, aligning with our EV strategy and goals.

Public agencies like ours have been leaders in providing public charging for years, filing market gaps to provide charging access to our communities. The associated impact analysis only looked at public chargers that were reported through LCFS, or assuming only 29 public chargers are operated by public agencies. As noted, the City of Sacramento operates 54 alone.

A five-year compliance timeline would be an unfunded compliance mandate for which we have no resources. Public agencies like ours would be penalized for being early adopters and providers of public chargers. This could result in unintended consequences, including the removal of existing infrastructure before the end of
its useful life to avoid compliance costs, delaying
installation, or disincentivizing participation in
incentive programs like CALeVIP. Extending the compliance
timeframe is a critical revision to ensure public agencies
are able to continue operating public Level 2 charging.

We highlight two more points. Firstly, it is
critical for CARB to coordinate with CALeVIP incentives.
$14 million is currently available in Sacramento alone,
but none of the Level 2 chargers eligible for those
rebates currently meet the proposed standards. We
strongly urge the Board to amplify State funded EVSE
programs like CALeVIP. An extended timeline can mitigate
that issue, but we urge the Board to grandfather or exempt
equipment funded by CALeVIP.

Lastly, we recommend that CARB staff continue to
assess the impacts of monitoring and compliance on local
governments. Resources put into compliance would be
dollars taken away from investment in new EVSE.

To close, we strongly urge the support of the
extended timeline, we think CARB staff recommended changes
are necessary to allow local agencies like ours to
continue operating public Level 2 charging and we look
forward to continued collaboration.

Thank you.

CHAIR NICHOLS: Thank you.
MR. HARRIS: Good morning, Chair Nichols and Board. My name is Frank Harris. I'm with the California Municipal Utilities Association. I appreciate the opportunity to comment on this item.

I'm particularly pleased that Senator Corbett was able to come here and speak about the enabling legislation. CMUA's member electric and water agencies own public EV charging stations. We provide incentives for our customers to install charging stations, and strongly support transportation electrification, and the State's clean transportation goals.

CMUA agrees that access to EV charging is a critical point in the deployment of electric transportation. We were initially concerned with some of the rules in the 45-day language, but CMUA fully supports the change in the language that staff has proposed to phase in the regulatory requirement over the equipment's expected useful life.

Although, we do share the idea that -- we share the position that we would prefer to have existing, that is EV charging equipment that has already been deployed to be fully grandfathered, we believe that by extending the phase in to 2033 this will allow for the bulk of the currently deployed stations to run through their expected useful life.
In addition to the change that staff has made, CMUA supports the staff's intent to follow the development of the technology, so that the standards could be updated to reflect the state of roaming and other technology. We'd like to see that somehow reflected in the regulation, so that perhaps regular check-ins could be made, so that we could ensure that the regulation doesn't sort of inappropriately or uselessly lock in technology that's no longer being used.

It may seem like a relatively small thing, but I -- the card -- the chip technology and the ability to physically access the card as opposed to other methods does actually add cost. And my members are telling me that any additional cost could slow this down.

We are -- I agree with some of the comments the City of Sacramento made. I'm not sure where some of the data came from. I've heard from multiple members that have more than double the number of publicly available fee-based charging stations than what was listed in the SRIA for the entire state. So I think that the costs might be a little bit higher than what has been reflected.

But in generally -- generally, CMUA fully supports electric transportation. We believe that the changes that staff has made to the 15-day package address many of our concerns, so that we can continue to deploy
charging and grow the state's clean transportation goals.

Thank you very much.

CHAIR NICHOLS: Thank you.

MS. LAKHCHAURA: Good morning, Chair Nichols and Board. Megha Lakhchaura on behalf of EVBox. EVBox is a manufacturer of EV charging stations ranging from residential chargers to ultra DC -- ultra DC fast chargers. We're headquartered in Amsterdam and we have currently over 75,000 installations in 55 countries. And these stations are not equipped with credit card readers.

We are concerned with how this regulation will impact the deployment of future charging stations in this state. And part of this comes from the way we do business with two things in mind, one is future proofing and the other is keeping costs low.

Parties have repeatedly articulated at recreating the gas station experience for EV drivers at charging stations. Why? Fumes, credit card readers that don't work, and even bad coffee.

(Laughter.)

MS. LAKHCHAURA: Instead, we should focusing on creating a pleasurable charging experience for EV drivers, quick and functioning payment systems, in clean ambiance where someone can get over with the payment quickly and go ahead and get a decent cup of coffee.
Plenty is -- will be spoken about, you know, the current state of regulation and some changes have been made. I want to talk about the future. This regulation will adversely impact the future of EV deployment in California.

First, this added cost undermines how much more infrastructure can be deployed. We saw the $110 million number here. But by -- sensitivity analysis says that the estimates can range between 110 to 400 million dollars. $400 million will get you 67,000 charging stations out there, double port. And even if you were looking at 110 million, 16,000 double ported charging stations out there.

Also, more importantly, no one has answered a fundamental question. For 110 to 400 million dollars, how many more drivers will have access to charging stations, if we didn't install these EMV chips?

And as someone who works closely with, you know, the business, we can tell you this, the business case demonstrates that the cost of the chip reader cannot be absorbed by the site host. This will lead to two consequences, either the site host will shut down the charging station or will massively raise the price of charging.

The will disproportionately impact the low income population and lead to shut down of stations in
disadvantaged communities, because that is where utilization is the lowest.

Also, since card readers are external to charging stations, weather elements can lead to malfunctions to the detriment of a reliable charging experience. In Europe, public charge -- public chargers do not have displays and card readers and they're up 99.7 percent of the time. We're not going to see that here.

There are better ways to do businesses. We are open to other payment options, including contactless cards. More importantly, as an industry, we have signed roaming agreements with each other, whereas a customer can access 100 percent of charging stations with a single RFID card.

And furthermore, CARB further specifies certain roaming standards. Are we carving out California as its own island with its own standards for payment and roaming protocols? If we are -- for these reasons, we urge you to vote against this regulation.

Thank you.

CHAIR NICHOLS: Since your the first one up, I'm just going to ask you this question. So you don't like this proposal, because you think it will slow down your investment in new charging stations. There's a lot of other people out there who are building charging stations.
MS. LAKHCHAURA: But the -- it slows down the investment. But for a site host or so the economics of it just don't make sense. After you pay for the cost of electricity, and if your utilization is two hours or so or four hours, you're left with almost $300 to $600 a year. And CARB's own estimate says that, you know, the cost of this is $270 a year. How much are you left with to recover your reinvestment, to cover any kinds of O&M cost, to cover anything? Most likely, you're going to shut down the station or just make it private.

CHAIR NICHOLS: But we're talking about new stations, not old ones. I mean, the two -- I thought you were making a distinction there. You were saying the new stations wouldn't get built because there'd be a requirement that you'd have to make them accessible.

MS. LAKHCHAURA: Yes. Like for the Level 2 stations, we can -- you know, that could be a major case, because for a private business owner, it just doesn't -- the economics it won't add up, if an EMV chip reader is installed.

And I can't speak of this from, you know, experience. I can only speculate, because we don't have, you know, charging stations with EMV readers. In Europe, between Rotterdam and Amsterdam, we have close to 5,000 public Level 2 stations, none of them has a credit card
reader on it. We use RFID cards and we use roaming agreements. And 70 percent of our customers are not our customers, they come from other networks.


BOARD MEMBER FLETCHER: I just have a question on this. How -- and I think we've all probably taken a countless number of meetings on this. And I just have a question about how -- how is it possible that the vending machine I can by a coke in is able to take a credit card when a -- and figure out how to make that work, when the charging station -- it doesn't seem like an insurmountable task. When I look at the variety of things in every aspect of my life that I use a credit card to deal with. I'm struggling to understand why it's an insurmountable task for a charging station.

MS. LAKHCHAURA: Well, first off, you know, charging stations are, you know, subject to more external environments. They could be out in the desert. They could be out in the sun. You know, they're subject to weather conditions.

The problem with the EMV chip reader is it's external to the charging station. If you used a contactless one, it would still be inside the casing and protected. This thing is external. When it's external,
as charging companies, we don't have a lot of control over it, we don't know how it's used, and we don't, frankly, know how to repair and, you know, operate it. So it's really, you know, dependent on -- you know, because it's out there in the external environment.

BOARD MEMBER FLETCHER: But I feel like I use external ones quite a -- quite a bit as well. So I just -- I'm kind of struggling to understand. I understand it would be a cost to folks and folks would rather not do it. I do understand.

I just don't -- I'm not convinced that it's an insurmountable task. And then the second point you mentioned about you would have the need to close down charging stations in low-income communities. We don't have any charging stations in low-income communities, so there's really nothing to close down.

MS. LAKHCHAURA: Well, we do have --

BOARD MEMBER FLETCHER: I mean, I could show you the map of our communities. It's not -- you know, I just don't know that's your strongest argument.

MS. LAKHCHAURA: Well, it might not be. I concede to that. But what I do want to say is that, you know, if we have charging stations that are in disadvantaged communities or low-income communities, which aren't being used a lot, like say two to four hours, the
economics just don't make them sustainable to operate. So I was trying to, you know, link the fact that, you know, if chargers are in low-income communities, they aren't used enough to cover the cost.

BOARD MEMBER FLETCHER: So it's not because of the credit card.

MS. LAKHCHAURA: No.

BOARD MEMBER FLETCHER: Thank you.

CHAIR NICHOLS: Thanks.

Next.

MR. SAFFIAN: Good morning, Board members and members of Board staff. My name is Scott Saffian. I'm general manager for the Western United States for FLO. FLO is owned by AddEnergie, which was founded in 19 -- in 2009 and now the largest Canadian EV charging station manufacturer.

AddEnergie and FLO are an integrated charging solutions provider, meaning we manage the stations on the FLO charging network, which is the largest Canadian EV charging network. We've recently launched both our network and our charging solutions here in the United States and are currently selling both our residential and commercial charging solutions in California.

We currently have approximately 160 employees, all based in North America, which includes our
manufacturing facilities team members.

I'd like to thank Board staff for their work on this and other issues related to EV charging. We certainly appreciate the significant work that has gone into staff's recommendation's today.

As a new entrant into the California charging market, we considered our involvement in this rulemaking process carefully. We believe strongly as a company in the benefits that are possible when State and local governments work to advance electrification. And very few places in the world can claim to have had as much positive impact on the advancement of EVs as California.

Following our review of the proposals here today, we felt that it may be helpful to share our perspective on mandatory EMV chip reader installations requirements as a company that is both the market leader in charging station manufacturing and network operations in Canada and at the same time a new entrant into the California market, for which requirements regarding installation of EMV chip readers in DCFC Level 2 public charging stations will have significant impact.

We strongly support new features that support the uptake of electric vehicles and provision of reliable, affordable, and convenient charging services to users and are always looking for features that will help meet these
objectives.

As a general principle, the addition of new features typically involves a balance between usefulness of the feature to end users, on the one hand, and any safety and security concerns and affordability on the other. For example, our company is very supportive of roaming agreements with other secure, well-run networks that expand user convenience across North America and we have entered into these agreements with ChargePoint.

CHAIR NICHOLS: Your time is up.

MS. SAFFIAN: Am I done?

CHAIR NICHOLS: That's it.

(Laughter.)

MR. SAFFIAN: Sorry, you had three minutes, yeah.

MR. SAFFIAN: Thank you all.

CHAIR NICHOLS: Have you submitted your written testimony?

MR. SAFFIAN: Thank you.

CHAIR NICHOLS: Thank you.

VICE CHAIR BERG: And as our next speaker is coming down, if you could keep your eye please on the list and come up. We're running both stations here. And we could move along a little quicker. Thank you.

MR. MONBOUQUETTE: Thank you. Good morning, Chair Nichols and fellow Board members. My name is Marc
Monbouquette and I represent eMotorWerks and electric vehicle charging technology provider.

We appreciate the effort of staff and stakeholders to implement the provisions of SB 454 and support the principles of open access to public EV charging stations. However, we oppose three aspects of the proposed regulations as written, which we believe will work at counter purposes to the State's transportation electrification goals.

First off, we believe it is inappropriate to hard code EMV chip readers as the only acceptable method of credit card payments for public EVSE. Credit card payments technology is evolving rapidly, and other forms of payment, such as contactless credit cards, will increase in ubiquity over the coming years and are cheaper to implement for hardware providers. The regulations will impact charging hardware decisions for years into the future and we should not bind ourselves to a 2015 technology.

Second, while we appreciate staff's proposed revision this morning to extend the grandfathering period for existing EVSE, we still believe any requirement to retrofit EVSE in good working order is profligate given the hundreds of million of public dollars that have been invested to deploy public charging infrastructure.
Existing EVSE should be upgraded to the new requirements when deemed appropriate by the EVSP, or EV service provider, or the site host.

Finally, annual data reporting to CARB on the payment methods used to initiate charging sessions goes above and beyond the statutory requirements. And despite staff's propose revisions presented today would still represent a considerable burden on EVSPs in terms of time and cost. Such data are not necessary for CARB staff to deem compliance with the regulations and we would instead propose that CARB request such data, in the event that they revisit the payment requirements in these regulations down the line, as mentioned would be -- they would potentially do in this morning's presentation.

So for these reasons, I respectfully urge the Board to strike these elements of the regulation and would point to eMotorWerks written comments for further discussion on these points.

Thank you.

MR. WINKLER: Good morning. My name is Josh Winkler and I am from Blink Charging. We are an EVSP. And I would like to speak in opposition of some of the items within the standard as also aforementioned here today.

While we appreciate the fact that CARB is
desiring to support open access and support roaming an interoperability, we are strong supporters of that as well. We also echo the concern related to the requirement for the EMV reader, since it is an outdated technology and within the next five to ten years could be replaced by other more innovative technologies, including more reliable methods like contactless readers.

Also, our concern is related to having to retrofit existing infrastructure that has been deployed. And because of the number of systems that have already been deployed, it could represent an impact to a single company of a double digit millions of dollars in order to retrofit the readers out there.

Also, California is a leader in the United States in terms of setting precedent. So other states are likely to follow the standards that are being set for California, which could also impact installations in other states.

So we urge CARB to reconsider the requirements for retrofitting existing infrastructure, and also we urge CARB to reconsider the requirement for EMV readers. We are not opposed to credit card readers, since we believe that does support open access, as well as other authorization methods. But to require a specific technology like EMV for payment is definitely not future-proofing this industry and products as a whole.
Thank you.

VICE CHAIR BERG:  Mr. Winkler.

CHAIR NICHOLS:  Excuse me.

VICE CHAIR BERG:  Mr. Winkler, could I just ask you a quick question. Are you in disagreement with CARB's understanding that these chargers have about a 10-year useful life?

MR. WINKLER:  No, we are in agreement that the useful life is 7 to 10 years.

VICE CHAIR BERG:  Okay. Thank you.

BOARD MEMBER SPERLING:  Could I ask something too? Did I understand you to say that if -- or interpret what you said, if the requirement was either contactless or a chip card, then you would support the requirement as opposed to only contact?

MR. WINKLER:  Correct.

BOARD MEMBER SPERLING:  Okay.

MR. WINKLER:  So contactless is a future-proofed technology.

CHAIR NICHOLS:  Thanks.

Okay. Please, come down.

MS. SICKLER:  Good morning, Chair Nichols and the Board. Heidi Sickler again with the Silicon Valley Leadership Group.

We appreciate the work that staff has done to
ensure the goals of wanting to expand access to EV charging stations across the state in order to support California's ambitious climate goals. We respectfully urge the Board to request modification in the regulation in order to not require EMV chip readers, but rather allow chargers to accept credit card payment in the method of the EVSE's choice, whether that be contactless credit card or EMV chips cards per SB 454.

This would provide adequate flexibility to charging station providers to choose a payment technology they prefer without jeopardizing consumer access to charging stations. This will save tens of millions of dollars in retrofit costs for existing stations and reflect the direction payment technology is going. Within the next year or two, contactless credit cards will be the industry standard.

Additionally, chip readers significantly increase maintenance costs and heightened risks of credit card fraud. We worry this will be a disincentive for site hosts to invest in publicly available stations. Given California's EV deployment goals and desired expanded access, we believe giving industry the flexibility to respond to customer choice and technology innovation will better serve these goals rather than mandating a little used and soon to be outdated payment method.
Thank you, Chair Nichols and Board members for your leadership on zero-emission vehicles and EV infrastructure deployment.

CHAIR NICHOLS: Thanks.

MR. BIVINS: Good morning, Chair Nichols and members of the Board. My name is Sam Bivins and I'm here on behalf of Siemens. Siemens employs over 4,000 personnel across 82 locations in California, and among other things manufacturers EV chargers and electrical make-ready equipment to connect charges to the grid.

Siemens is grateful for the opportunity to express its support for staff's proposed regulation in order to adopt the new Electric Vehicle Supply Equipment standard, even though we're disappointed by the delay in the compliance dates.

Siemens maintains its preference for an earlier implementation date for new DCFC and Level 2 chargers, specifically July 1st, 2021, because the requisite charges with readers are already available in the market and July of 2021 provides enough time to account for grant programs and regulatory proceedings that the CEC and the CPUC have initiated.

The fundamental goal of SB 454, the bill authorizing staff's development of the proposed regulation, was to ensure that EV drivers could seamlessly
charge their vehicles at any public charging station by requiring universal open access. The proposed regulation would eliminate the current access problem in which EV drivers must do the following to be able to use a public charger: have a smartphone, have reliable cellular coverage, download a proprietary app, give private information to the charging provider, provide credit or debit card data online, or call a 1-800 number and provide the payment information manually.

None of these payment steps are required to fill gas at a Shell or a Chevron station. So why are EV drivers being penalized for opting to fuel with clean electrons at charging stations, many of which were installed using public funds?

It is the customer who should have the choice of the payment method and not be dictated to by a list of predetermined payment options.

Turning to technology. We would like to address the major arguments being made against the draft regulations requiring an EMV chip card reader, which also handles debit and prepaid cards making it truly universal.

It is alleged that the card reader is insecure and would increase fraud. But on the contrary, according to MasterCard, introduction of EMV chip cards has reduced fraud by 75 percent since 2015, and 40 percent of the
fraud has since shifted to the type of online payment that is currently being used to pay for EV charging.

It is also alleged that physical cards are becoming obsolete. However, only 16 percent of Americans have ever used a digital wallet or contactless card, according to JP Morgan. And the Federal Reserve reports that debit cards are the number one payment choice.

On March 25th of this year, Apple announced its own physical credit card. Why would the world's most innovative company launch a product that is supposedly obsolete and old technology?

Finally, on the cost impact of the regulations, our focus is on the going-forward costs, because new chargers will quickly overtake the installed base as EV adoption grows. Siemens estimates that the cost increase per new charger is de minimis, well under four percent for Level 2 chargers and less than one percent for DC fast chargers in the context of the total installed cost.

In conclusion, we stand for open universal access to public chargers for all Californians, especially for chargers that will be funded by public dollars.

Thank you.

CHAIR NICHOLS: Thank you.

MR. GROETERS: Thank you, Chair Nichols and the Board for having the time to have us here today. And I
also want to thank the CARB staff who's had an open
dialogue and a collaborative process with us.

Despite that dialogue, I am still here to oppose
the regulation today as proposed.

I'd like to open by stating that we all have,
every EVSE company in this room, the State's climate goals
and CARB's goals as well are all aligned to advance
deployment and access to EVSE technology. It's in our
direct business interest to do so.

But we're opposed for two main reasons. One is
the EMV chip reader mandate. We have several concerns
there. One of them is largely fraud, which some members
of other hit on already -- or some previous speakers.
Credit card fraud is a growing pervasive issue. The U.S.
Secret Service has been working and doing task force to
stop this.

Hear a lot of people talk about the gas station
model when they're using their card. A gas station is a
well attended, well lit, observed station. And most EV
charging stations are not. They are in parking lots that
are not well lit, that do not have attendants, and will
make it easier for a credit card frauder to attach a
skimmer to read someone's card and take their data.

Just two weeks ago, a new report was released on
this specifically about the risk for EV drivers.
Eighty-three percent of the tax credit recipients for the electric -- federal electric vehicle tax credit are $100,000 income household or above, creating a high-value target for credit fraud. We also have the same issues with maintenance and upkeep that some others have referenced before.

Our main reason that we're opposed to this is the access piece. The former Senator and original sponsor of SB 454 came up here and said that access is the number one key issue to this regulation. And this regulation will do the opposite. Many have mentioned that site hosts will be forced to make a choice neither to comply, take their network private, or completely take their network offline. That's something that our company strongly believes will happen and have already started communicating to our clients about the potential harm of this regulation. This reg will not increase public access to charging, and, in fact, it will do the opposite.

Thank you.

MR. BULLIS: Good morning, Chair and Board members. Cory Bullis on behalf of the Electric Vehicle Charging Association.

EVCA is comprised of companies that design, manufacture, install, and operate EV charging products and services. Many of our members are headquartered here in
California. We recognize that the rollout of infrastructure has not always been a perfect process or experience. EV drivers are having to rethink what it means to drive and fuel their car, which is no small feat.

Issues like interoperability for EV drivers, which is a primary goal of this regulation, have taken longer to solve than we hoped. But it's important to note that the industry has been solving for it with tremendous progress in the last 6 to 12 months alone. You've heard it before earlier today, but I'll say it again, is that many -- with many of the roaming agreements that have been announced in that time frame, drivers will have access to over 90 percent of publicly available charging stations from one account or one card. This gets at that access issue in our view that we keep talking about today.

So interoperability is not some distant future. It is being achieved now. This is the standard in Europe and Canada, and it will soon be the standard here as well.

However, should the Board adopt a requirement for EMV card readers, we believe this will negatively impact station deployment as you have heard today, as well as reliability, which is not good for the consumer experience, and it's not good for EV deployment in our view.

EMV readers can create reliability issues for the
operability of stations because of weatherization. The State wants to deploy 250,000 charging stations by 2025, and if we're going to get to 5 million EVs by 2030, that number is going to need to ramp up significantly more beyond 250,000.

But just to give you a sense of comparison, California only has 8,000 gas stations. The demands of maintaining such a vast network will inherently be more complex, if we have to maintain an EMV reader as well.

There is no data to show that EMV readers will have high utilization rates on stations. And, in fact, you'll hear testimony later today showing the opposite, as it relates to charging stations.

The payment industry has already started replacing EMV chip cards with contactless cards. And this is an international trend. And while the U.S. might be a few years behind compared to the rest of the world, big banks have already been issuing contactless cards to replace their EMV cards.

In the end, full-scale EV deployment requires a robust and reliable infrastructure to support it. And we believe that roaming agreements paired with contactless credit cards will enable a seamless and reliable charging experience without the reliability and cost issues that you keep hearing about today.
So in light of this, we respectfully ask your consideration to remove the EMV -- or to reconsider the EMV reader mandate.

Thank you.

MR. MULLER: Good morning, Chair Nichols and members of the Board. My name is Miles Muller speaking on behalf of the Natural Resources Defense Council. Here in support of the proposed regulations. I'd like to start off by thanking ARB and staff for their work on these regulations, which are aimed at addressing a critical barrier that has beleaguered many EV drivers in California for several years.

To meet California's statewide goals of creating a mainstream market for electric vehicles and increasing access to those vehicles for low income households, and for residents in disadvantaged communities, it's imperative that all drivers have convenient and reliable access to electricity as a transportation fuel where they live, work, and play.

Senate Bill 454 was enacted by the Legislature to accomplish exactly this. And ARB's proposed regulations appropriately align with the vision of SB 454 by setting EVSE performance standards that provides drivers convenient and simple payment methods for charging.

The proposes regulations would promote reliable
access by requiring stations to accept credit card payment in the forms that most align with customer expectation and open access, in addition to mobile payment technology. Customers should be able to pay for charging at these stations, just as they would expect to be able to at gas stations or parking meters, not resigned to the alternative payment methods which many customers may lack.

The proposed regulation set out standards that are aligned with both the present and the future of customer charging needs ensuring equitable access to charging as electric vehicle adoption expands to a broader and more diverse base of drivers.

We appreciate the opportunity to comment on the proposed regulations and look forward to working with ARB on continuing to promote the achievement of California's climate, air quality, and equity goals.

Thank you.

CHAIR NICHOLS: Thank you.

MR. FRIEDLAND: Good morning, Chair Nichols and ARB Board members. My name is Jay Friedland and I'm a Senior Policy Advisor for Plug In America. We're a non-profit advocating for hundreds of thousands of EV drivers. I also represent today a broad coalition, which includes EV charger manufacturers, EV charging networks, environmental groups, and consumer groups. As we -- and
we also speak for a broad organization or broader group, who -- of people who wish to become EV drivers, especially those in disadvantaged communities.

We were the original sponsor of Senator Corbett's SB 454 in 2013. We've been working on the consumer protection issue for more than seven years, including two with ARB staff. They have tried hard to balance the concerns of all the stakeholders. It's almost there and it's in your hands today. And we actually think that some of the compromises that have been proposed really move there. And I think you'll see that many of our organizations are willing to say, yes, these compromises are legitimate. And I think you'll see that some of the EV charging companies are not willing to compromise at all.

Imagine how you would feel if you pulled into a gas station and you didn't know if it would take your credit card for payment or how much the fuel costs? And then in order to fuel, you had to download an app, or call an 800 number, or join a club just to fill your car?

SB 454 was created to eliminate that, to make sure that that didn't happen. Card readers are the most basic way to solve the issue of never leaving any driver stranded at a public charger. Consumers will buy more EVs if we eliminate this barrier and make fueling a familiar experience.
We have three core principles. One, to ensure open and universal access to publicly available charging stations, especially since many of them were deployed using public funding; to ensure that such open access takes into consideration the needs of disadvantaged communities, many of whom do not possess smartphones, credit card, or even bank accounts; and to protect the existing investment that California has made so far in building public EV infrastructure.

We suggest changing the staff's proposed modifications to find the best compromise in terms of timing and preventing the issue from being relitigated again just two years from now.

One, protect existing infrastructure eliminate the retrofit requirement on L2 chargers installed prior to January 1, 2020, but retain the retrofit requirement for card readers on the 566 chargers that are publicly available in disadvantaged communities.

And then for all L2 chargers add a requirement that a toll-free number, which accepts credit, debit, and prepaid cards be available. This is something everybody should do now.

In order to send a strong signal to the market, ARB should encourage incentives to reward early adoption of card readers prior to the implementation date,
especially in disadvantaged communities. Again, it's a small number. And we think that this could really be done both via ARB internal programs and working with other State agencies like the CEC and the CPUC. The regulations opponents you'll here from today, and you've been hearing from, want you to believe that the cost to add card readers will place an extreme burden on them and previous installations will be ripped out. But these numbers have been inflated out of proportion and the costs are modest, especially if you do the grandfathering as staff has proposed.

CHAIR NICHOLS: Thank you. Your time is up.

MR. FRIEDLAND: Thanks very much.

CHAIR NICHOLS: Appreciate your testimony and I know we have something in writing from you as well.

BOARD MEMBER TAKVORIAN: Can I ask a quick question?

MR. FRIEDLAND: Sure.

BOARD MEMBER TAKVORIAN: Sorry.

(Laughter.)

CHAIR NICHOLS: Go. Yes, go ahead. Of course.

BOARD MEMBER TAKVORIAN: I have to ask her first, but yes.

(Laughter.)

BOARD MEMBER TAKVORIAN: Sorry.
Can you tell us more about how you -- for your recommendation number 1 in regards to eliminating the retrofit requirement for those chargers installed prior to January 1, 2022, can you tell us a little bit about why you selected that date?

MR. FRIEDLAND: Sure. Basically, what we tried to do is balance the dates. So the original staff proposal, I believe, had 2021 and then the new staff proposal has 2023. So we just wanted to pull it in by a year.

We also think that it -- one of the changes you could make would be on manufacture dates. So, for example, you could say all EVSE manufactured by this date. That would not necessarily preclude it from being installed, because the installation issue is an important one, and it does take time for permitting and provisioning and all those kind of things. So we think that there's probably a working way to make this happen sooner rather than later, particularly looking at a manufacture date.

BOARD MEMBER TAKVORIAN: Thank you.

MR. FRIEDLAND: Sure. Thank you.

CHAIR NICHOLS: Dr. Sherriffs. Wait we have one more questions also? No.

Were you not -- were you asking? Oh, I'm sorry. You were just pointing. Never mind. We have a little
confusion here. We don't have a button system that really works.

MR. FRIEDLAND: No problem. And again, thank you for all your work on this and the staff's work.

CHAIR NICHOLS: Thank you.

We'll get there.

MR. DEMETRE: Good morning, Chair Nichols and Board members. My name is Cameron Demetre. And I work for TechNet.

Two key areas of TechNet's portfolio are electrification of transportation and financial technology. TechNet is unique in that we are able to see innovation in these two fields and the intersection between new technology innovations in these fields.

The financial technology market is quickly evolving to meet the needs of consumers and provide consumers with new, secure, and reliable payment systems and financial tools.

Innovation in this market, including mobile payments and contactless cards, has accelerated due to the issues presented by swiping or dipping plastic debit and credit cards. TechNet is concerned that a mandate for credit card readers would not only increase the cost of charging stations and hinder growth in the field, but could also open consumers up to increased fraud.
Contactless cards and Near Field Communication, NFC, chips are cost effective to deploy and operate in the charging station industry and result in quick and secure payment transactions for consumers.

Additionally, TechNet requests the Board consider amending the proposed definition of NFC reader. The definition should accurately capture NFC readers that accept credit card enabled NFCs and allow this technology to qualify as a type of credit card reader.

NFC chips stocked inside credit cards enable contactless payment, which is commonly understood by the industry credit as a credit card payment method, not a mobile payment. A contactless card can provide credit card access to charging stations without the cost impact. Consumer protection issues and technology obsolescence associated with chip readers and swipe machines requiring electric vehicle service providers to retrofit existing stations and prospectively include credit card readers will increase costs.

This will hamper ESVP's ability to allocate resources to research and deploy new innovative payment technologies and will also take critical existing charging stations out of operation. Thank you for your time and we appreciate ARB's continued efforts to electrify the transportation sector and support innovation in achieving
our long-term climate goals.

Thank you.

CHAIR NICHOLS: Thank you.

MR. RODRIGUEZ: Good morning, Chair Nichols and members of the Board. My name is Elias Rodriguez. And I'm here on behalf of Earthjustice.

For the following reasons, Earthjustice supports the Air Resources Board's measures to make publicly accessible Electric Vehicle Supply Equipment available to all users.

First, opening up Electric Vehicle Supply Equipment to non-remembers and requiring credit card readers ensures not only uniformity of service, but critical access to infrastructure that users from local communities may be lacking.

Second, bringing common billing standards to all suppliers provides consumers with less confusion and ease of access.

And finally, transparent fees and energy capabilities ensure clarity to users and safe use of potentially dangerous equipment.

So making clean energy infrastructure, such as EVSE, accessible to all users is an important step in California's goal to become emission free. These efforts are crucial to expand the use of electric vehicles,
because they will influence the decisions of drivers who do not currently own electric vehicles. Consumers are more likely to use products that have -- that provide ease of use.

Earthjustice supports CARB's measure -- excuse me, CARB's adoption of these common sense proposals to make sure electric vehicle charging is available to a broader swath of the public.

Thank you

VICE CHAIR BERG: So in doing our planning, we'll have you be our last speaker. And then Madam Chair -- last speaker before lunch. Thank you. We didn't mean last speaker for the item. So thank you, Dr. Balmes.

(Laughter.)

VICE CHAIR BERG: As everybody is going "Wait". And, Madam Chair, if I could make a comment before we go to lunch. I'm been asked to do a little double duty this afternoon. And I do have very strong feelings about this and I don't know that I'm going to be back prior to the vote.

CHAIR NICHOLS: Oh, okay.

If you would like to make a statement now, that would be fine.

VICE CHAIR BERG: After our speaker.

CHAIR NICHOLS: I do want to say that we're only
taking a half hour break.

VICE CHAIR BERG: Oh, we are. Okay. Then I'll wait. Then I'll wait. A half hour break would be great.

CHAIR NICHOLS: Okay.

VICE CHAIR BERG: Please, go ahead.

MR. WIEDMAN: Thank you, Chairman and Board. My name is Joseph Wiedman. I'm the Director of Regulatory and Legislative Affairs for Peninsula Clean Energy Authority. We are the community choice aggregator serving San Mateo County. We were formed in February 2016 by a unanimous vote of the -- all city councils in San Mateo County and the Board. So that's the first time in 165 years those politicians have agreed on anything unanimously.

(Laughter.)

MR. WIEDMAN: But the mission of PCE, that's why they voted, was to help the county and assist in decarbonization. And the biggest source of carbon emissions in the county is transportation. So within first two years, we are moving to adopt a $20 million programmatic effort on EV transportation. That includes ride and drives, it includes new and used EV incentives, and it also includes a major charging infrastructure program for over 3,500 chargers. So we are here today to talk about these regulations. We've submitted extensive
comments on the regulations, so I'll be brief. And I know we're all waiting for the break.

So we have three main recommendations to the Board. The first would be to clearly grandfather all existing chargers until they are upgraded.

The second would be we strongly support flexibility in standards to avoid technology obsolescence.

And then three, we encourage the Board to collaborate with the Center for Sustainable Energy and the Energy Commission to support the CALeVIP program, and align this program with any proposed regulations coming out of today's vote.

Thank you.

CHAIR NICHOLS: Thanks for those recommendations. It is noon and I think we can take a break at this time. And we'll try to reconvene at 12:30 or as close to that as possible.

Thank you.

(Off record: 11:59 a.m.)

(Thereupon a lunch break was taken.)
AFTERNOON SESSION

(On record: 12:40 p.m.)

CHAIR NICHOLS: We're ready to get back to work.

(Discussion off the record.)

CHAIR NICHOLS: All right. We are looking for Adam Mohabbat. Has Adam made it back yet from EVgo?

How about Lisa.

Oh, okay. There is Come on down. Yes, and then Lisa, and then Rocky.

Okay.

MR. MOHABBAT: All right.

CHAIR NICHOLS: Good.

MR. MOHABBAT: Good afternoon, everybody.

CHAIR NICHOLS: Good afternoon.

MR. MOHABBAT: Thank you so much for the break. I enjoyed a great pita. My name is Adam Mohabbat. I'm here today representing EVgo. We did submit a public comment letter. I appreciate you all taking the time to hear me speak today as well. EVgo is the nation's largest public electric vehicle fast charging network with more than 1,200 DC fast chargers operating across the nation. This includes many legacy L2 chargers on our network as well. Approximately, half of our network is here in California.

We share CARB's mission for a seamless and
accessible customer experience. You do not need a
membership to access our chargers. We are also committed
to ensuring equity and accessibility and electric for all
with 40 percent of California network of ours in
low-income communities.

EVgo shares the State's goal of 250,000 chargers
in the state by 2025, that includes 10,000 fast chargers.
And we're actually currently on track to have more than
1,350 operating DC fast chargers in the state. By the end
of the summer.

Here, today to tell you that the SB 454
rulemaking as proposed puts many of these chargers at risk
and that we respectfully oppose. EVgo has engaged with
CARB throughout this process. We also engage with other
stakeholders. We echo their recommendations and
appreciate some of the recommendations that were
accommodated into the regulations. So thank you for that.

But I do want to share two additional points
today. The first is that EVgo has credit card readers on
our existing infrastructure. And that the reality is
these credit card readers are used less than one percent
of the time. This number has not increased throughout the
years that we've been operating. In fact, our data
demonstrates the opposite. As we expect to see increased
payment sessions from mobile payments including Apple and
Google Pay.

(Phone ringing.)

MR. MOHABBAT: I'm going to keep rolling here.

We also recently launched auto charge for Maven drivers which enables a session without a credit card or any swipe or tap option. We're going to be rolling this out to our chargers -- our CCS capable chargers by the end of the year. And we've shared this one percent credit card usage figure with staff and have not seen any data from CARB that would demonstrate that credit card usage by drivers would increase over time.

We heard earlier that this requirement may increase utilization of chargers. We'd argue that it's difficult to make policy based on a feeling and that regulations should be data driven.

The second point is to in -- is that the increase of roaming agreements that have come to fruition since this legislation was originally written. When SB 454 was passed back in 2013, there was virtually no industry-wide interoperability ability.

However, we're living in a different reality now. With so many of the largest EV service providers, including EVgo, having announced bilateral interoperability agreements. It's important to note that these agreements will have zero extra cost to drivers.
And I can tell you that there are more interoperability agreements coming along.

Thank you for your time. We respectfully oppose.

BOARD MEMBER RIORDAN: Madam Chair, may I ask just a quick question?

And I'm sorry, I didn't hear you, but -- okay. We know you have about a one percent for credit cards. What's the spread with the others or do you separate out those?

MR. MOHABBAT: Absolutely. So we see a large -- a vast majority of payment -- or of sessions being started with RFID cards. And then we're seeing an upward trend with mobile payments. So we're anticipating that that's going to be kind of where the future is at.

BOARD MEMBER RIORDAN: Okay. Thank you. Thank you for the clarification.

BOARD MEMBER TAKVORIAN: I'm sorry, but aren't your mobile payments backed up by a credit card?

I mean, in order to get into your system, people have to have a credit card, so how do you count those?

MR. MOHABBAT: I believe so. So I mean, what that one percent number is strictly talking about credit card readers. So the physical reader on the infrastructure itself.

BOARD MEMBER TAKVORIAN: Yeah. But you're using
credit cards in your system.

MR. MOHABBAT: I believe -- so I don't want to speak totally off the top of my head here, but you can use a credit card or like a debit card. So it's just like whatever monetary account you'd be using, yeah, in general.

BOARD MEMBER TAKVORIAN: Right. Okay. Thanks.


EVSEs and EV technology needs to advance towards performance standards and improve reliability as such. SDAP supports this proposed standard with the following modifications and comments.

Forty percent of existing Level 2 EVs -- EVSEs are not owned by the EVSE providers. They are owned by small private retail sites or workplace likely only at one site. The life of an EVSE is ten years. These private and small entities could support public charging in the future, and it is reasonable to allow grandfathering.

Otherwise, this cost would be a burden and/or these sites my not participate in future public charging, and thereby it will take them out of operation.

SDAP appreciates today's amendments, which preserves the life, but requests grandfathering.

Additionally, not all EV drivers have mobile access or a
smartphone. Only 58 percent have smartphones. Others may not have a credit card. We don't know what the future innovative payment will be. Payments by cash should be available, so all public EV drivers have open access.

The price of a kilowatt hour should incorporate all fees, taxes, user fees, and so forth that are tied to the quantity of the sum of the kilowatt hours that are purchased. This would be the adjusted kilowatt hour or the out-the-door kilowatt hour place. This presents -- this prevents the need for engaging in mathematical calculations at the dispenser and aligns with other conventional fuel pricing by the gallon, which already includes the taxes.

Kilowatt hours disclosed. SDAP appreciates disclosure and would like to request for consideration on the actual throughput of the dispensed kilowatt, as line loss and distance will impact the kilowatt throughput, thereby testing the field after installed will true-up the kilowatt disclosed for every installed EVSE.

And lastly, the response time to failures by the OEM EVSPs needs to be documented and enforced to avoid excessive downtime as some equipment is proprietary.

Thank you.

CHAIR NICHOLS: Okay.

MR. RUSHING: Good afternoon, Madam Chair, Board
members. Rocky Rushing with the Coalition for Clean Air. Just in reference to an earlier speaker, I just want to say for the record, some of America's greatest triumphs was fueled on bad so coffee. So I think all know that and we can move on.

(Laughter.)

MR. RUSHING: CCA supports the proposed Electric Vehicle Supply Equipment standard. We'd like to thank staff for its diligent work on this matter and we -- which we think will be far reaching in giving all EV drivers reliable and equitable payment options. California faces a pressing need to accelerate the transition from the internal combustion engine to zero-emission transportation.

We have the dirtiest air in the nation. We have a climb and air quality crisis and our dependence on the internal combustion engine shares a large part of the blame. We must step up our emission reduction efforts and that means making zero-emission vehicles accessible to the greatest number of drivers.

SB 1275 of 2014 envisioned a market for EVs not just for the tech savvy or the well-heeled, but for low and moderate income households and those living in disadvantaged communities.

The stage for SB 1275 was set in 2013 with the
passage of SB 454. SB 454 provided the framework so EV charging stations could be, as Senator Corbett earlier referenced, just as simple as gassing up your car. If approved today, the proposed resolution before this Board would realize the spirit of SB 454 by setting performance standards for charging stations that provide convenience and easy payment methods. Drivers can fill up at gas stations with a charge card and they should be able to do so at charging stations.

If we are striving for a transition to emission-free vehicles that is as seamless as possible, limiting payment methods to RFID tags, a 1-800 number, or other contactless methods is certainly not the way to get there. California leads the nation in EV adoption. We surpassed a half million in the market in sales last year.

Our sights are set one 1.5 million by 2025 and 5 million by 2030. To achieve these goals, public charging can either be inconvenient or confusing. This Board has before it a resolution that recognizes the needs of consumers today, and what will certainly be the practices of consumers in the future.

To ensure charging access for all EV drivers, we urge the passage of the proposed electrical -- Electric Vehicle Supply Equipment standards.

Thank you so much.
CHAIR NICHOLS: Thank you.

MS. HITT: Good afternoon. My name is Kelly Hitt from the Computing Technology Industry Association, also CompTIA. CompTIA is a non-profit trade association serving as a leading voice in the technology industry that supports technology innovation. We very much appreciate the work that the Board and staff has done to date on these regulations and share the goals of wanting to expand access to EV charging stations across the state, in order to support California's climate goals.

However, we urge the Board to request a modification in the regulation to not require EMV chip readers, but rather allow chargers to accept credit card payment in the method of the EVSE's choice. While the enabling legislation SB 454 provides an option to pay via credits cards, it does not mandate that physical credit card readers be installed in all stations.

Specifically, it states, "An electric vehicle charging station that requires payment of fees shall allow a person desiring to use the station to pay via credit card or mobile device technology or both". This would provide adequate flexibility to charging station providers to choose a payment technology they prefer without jeopardizing consumer access to charging stations.

For the past 10 years, the Energy Commission has
invested approximately $50 million in publicly available EV charging stations. If this regulation goes into effect as is, not only will existing investments happen in vain, but future investments from ratepayers and the State will only go as far -- half as far, undercutting the amount of infrastructure the State could deploy.

Given the scope of the climate crisis before us, and the immense need for infrastructure to support the State's transportation electrification goals, this is not a good use of State and ratepayer resources for charging infrastructure.

The State needs to rapidly increase infrastructure deployment to meet its greenhouse gas emission reduction goals and ensure electronic vehicle service providers continue to innovate and provide a consumer-friendly charging experience.

Thank you for the opportunity to comment.

MS. WAHL: Good afternoon, Chair Nichols and members of the Board. Francesca Wahl again on behalf of Tesla. First, we'd like to recognize staff for their dedication and hard work on the development of the EVSE standards.

As a California based manufacturer of electric vehicles with a significant California and global charging infrastructure network, including over 1,500 supercharger
or fast charging stalls and over 2,200 Level 2 charging stations in California, Tesla recognizes the importance of providing access to charging infrastructure to help spur the deployment of electric vehicles in California.

Providing a seamless and transparent customer experience has been and continues to be one of Tesla's key objective in developing both our supercharger and destination charging network. Per the language provided in the statute and the proposed regulation, this regulation applies to all publicly available EVSE, which does not include EVSE provided by producer of electric vehicles as a service to its customers.

Tesla appreciates staff recognition that per the statute this regulation is not applicable to the supercharger or destination charging networks. Because charging services are provided to our customers directly and integrated with the vehicle user interface, Tesla has been able to provide access to convenient and affordable charging infrastructure providing a seamless experience.

Nonetheless, we have an interest in the development of this regulation, given Tesla vehicles and our customers represent a significant portion of the EV market in California today. To that end, we submitted written comments earlier this week, where we articulated two different points.
One was on the payment mechanisms, where we articulated that we agree that there should be some level of flexibility maintained within the regulation, and at this point, we do not support a straight out mandate of credit card readers on all new charging stations.

We're worried about the impact that this will have on the charging industry and the lack of data that has been utilized to determine that this requirement is necessary to overcome barriers to charging infrastructure deployment, given no direct correlation has been provided and how credit card readers will in turn make access to charging stations easier for all EV drivers.

There are a number of payment mechanisms, as others have articulated, that are starting to provide more flexibility to drivers. I will not go through all of those currently, but roaming options are also available today. And we've already seen this as a reality across the industry.

Finally, as I've mentioned already Tesla is not subject to this regulations, given that we are providing charging as a service to our customers. We really built our network to install our drives with the confidence of owning an EV and being able to have long-distance travel. And since then, we've continued to invest a significant amount of funds into that network.
However, we've also stated publicly that we are open to allowing other automakers to access the network if certain conditions are met. The current proposed regulatory framework provides a significant disincentive for opening the network to non-Tesla drivers by making it a much more costly proposition that could significantly impact the driver experience.

Therefore, we thank you for considering this as you are considering the regulation before you today.

MS. GOLDSMITH: Good afternoon, Chair Nichols and members of the Board. It's rare that I have the privilege to speak to you three times in one meeting.

My name is Hannah Goldsmith. I'm with the California Electric Transportation Coalition. As I failed to mention before, CalETC is a nonprofit industry association and our members include utilities, manufacturers of light-, medium- and heavy-duty electric vehicles, as well as a few charging station providers and others that are supportive of transportation electrification.

I first just want to thank staff for their efforts to understand and incorporate our feedback during the course of this rulemaking. Our primary recommendation, although we submitted more detailed comments on the 45-day language, is to include an
appropriate phase-in period for existing charging stations of at least 10 years to recognize the useful life of these stations.

The State of California, utilities, and other entities have spent millions of dollars putting in the current network of charging stations and we must drastically increase the amount of charging stations in order to meet the ZEV targets, our air quality targets, and our climate change targets.

Spending public, ratepayer, or other limited funds to replace or retrofit existing stations before the end of their useful life, instead of installing new stations will hinder these State goals. We are pleased to see in the proposed 15-day changes that were shown by staff in their presentation that this is part of the new proposal. And with that change, we are neutral.

As detailed in our letter, we do also recommend that staff evaluate the regulations at designated intervals after implementation begins to ensure that the regulations are not hindering the zero-emission vehicle market and are achieving the intended benefits.

And just to say staff have been very up front with us about their intention to do this. It was also included in the presentation and we're very appreciative of that. So we look forward to continuing to work with
you as you formalize the 15-day modifications.

    Thank you.

VICE CHAIR BERG: Madam Chair --

CHAIR NICHOLS: Yes.

VICE CHAIR BERG: -- as the next speaker comes
up, if you wouldn't mind, if I could just give a couple of
comments before I leave.

CHAIR NICHOLS: Yes, please. I know you have to
leave for a bit, so please go ahead.

VICE CHAIR BERG: Yeah. I have the privilege of
going over to the California Climate Cup and they're going
to be awarding a $25,000 winner to an innovative company.
I'm excited to represent ARB.

But I do feel very strongly about this
regulation, both personally, as an EV owner, and being in
a situation of needing to be able to charge, and also
looking at the choice that we have as policy -- as people
that develop policy and looking out for the consumer. So
I'd just like to make two quick observations that I'd like
to offer to my fellow Board members.

It just appears to me on the technology issue
that there is more opportunity to take a look at what
types of payments and how we should structure this in the
future to pass a regulation that has -- appears
one-size-fits-all, meaning it would have to come back to
us in order to change anything might be a little bit narrow.

So I'd like to offer for your discussion that you might consider that we would direct and give the authority to the Executive Officer the ability to do technology reviews, and be the decision maker on how this technology should change. There could be hybrids between chip readers and contactless. There's all sorts of interesting things coming out in the future. And it seems to me that we have a staff that would be very competent through our Executive Officer to be able to broaden their thinking, understanding that we want to be a combination of what's right here right now, but also having an eye on the trends in the future to minimize a wholesale changeover.

I personally don't know what that should be today, but I really believe that you all are very capable and I would support some language within the resolution that directed and gave the authority to the Executive Officer for that.

CHAIR NICHOLS: Okay.

VICE CHAIR BERG: Secondly, if I was here, I would ask about the implementation date. I am absolutely in favor of those things that are in the works from conception through ready to be plugged in that we should be coordinating with our sister agencies. But also, are
we making sure that things that are an idea are going to
the new standard?

So I would ask if -- I don't know about the
clarification, are -- is that additional time frame that
staff is asking, are we making sure that brand new
projects that haven't been conceived yet really should
go -- especially in the DC fast chargers should go under
the new standard? That's the question I would ask.

So I know I'm leaving this in very capable hands.

Those are my couple of thoughts. Good luck.

CHAIR NICHOLS: Thank you.

VICE CHAIR BERG: And I'll go and celebrate with
the winners of the Climate Cup.

CHAIR NICHOLS: The Climate Cup is From the L.A.
Cleantech Incubator, so it's my home folks.

VICE CHAIR BERG: As well as mine.

CHAIR NICHOLS: And yours to.

Okay. Thank you. Fine.

We'll go to Alex.

MS. LEUMER: Thank you, Chair Nichols and members
of the Board. And congratulations on the award. My name
is Alex Leumer. I'm the Director of Public Policy at
ChargePoint, the world's leading network of electric
vehicle charging stations.

ChargePoint shares the goals of ARB staff in
wanting to expand access to EV charging for all income levels in order to help Californians transition to zero-emission vehicles and to help us -- excuse me -- reach our GHG reduction goals.

However, we do not support the proposed rule as written and are worried about the unintended consequences. As a global company with more than 65,000 ports across our network, including 29,000 here in California, ChargePoint is greatly concerned about the proposed mandate for an EMV chip read on existing and new stations, and the creation of a California specific roaming standard.

The majority of stations on ChargePoint's network are independently owned and operated by workplaces, retail stores, colleges and universities, and public agencies. The cost to replace stations with ones that have chip readers and to maintain those new stations with higher maintenance, data, and security costs will fall on these businesses, many of whom have previously received public or utility funding to deploy their stations. This will lead to fewer stations deployed or kept operational, significantly setting back our State's number of publicly available charging stations, rather than increasing it.

ChargePoint urges the Board to request a modification to enable charging providers to offer credit card payment in the method of their choice including those
currently offered by our companies without requiring
membership, including contactless cards, payment through
an 800 number, and mobile payments for bank cards or
credit cards using Near Field Communication.

The proposed rule would also create a
California -- California-only standard and testing
procedure for roaming between charging networks. This
could have the unintended effect of setting back existing
roaming agreements and making it more difficult for new
charging networks to enter into California. ChargePoint
has already signed peer-to-peer roaming agreements with 95
percent of the industry using a global standard under
development called OCPI.

We have used the same standard in Canada to
implement roaming with FLO, as we have in Europe with
EVBox and in the U.S. with EVgo, Electrify America, EV
Connect and others.

Each one of these agreements requires business
discussions, legal documentation, and engineering to make
sure that the back end of both networks can provide a
seamless charging experience for drivers without any
additional roaming fees. Staff proposed California-only
standard does not support existing roaming agreements, nor
does it provide any additional guidance to streamline or
encourage new agreements to be in place.
ChargePoint remains committed to working with all the networks, small and large, to establish roaming agreements. But we must warn the Board that this proposed rule may delay our progress on implementation. It will also expose our customers to propose $1,000 fine per port for compliance that we feel will strongly discourage public stations from being installed or operated.

Given California's EV deployment goals and desire to expand access, we believe giving industry the flexibility to respond to customer choice, developments in technology, and global payment trends will better serve these goals. California leads the nation in climate action as well as developing technology.

Let us continue to lead. Thank you.

CHAIR NICHOLS: Thank you.

MR. KARLEN: Good afternoon, Chair Nichols, members of the Board. My name is Erick Karlen and I represent Greenlots. Greenlots is a leading provider of electric vehicle charging and software based in Los Angeles. Greenlots has been actively involved and engaged in growing the market for electric vehicles and transportation electrification across California. And we're involved in a variety of charging with special deployments across the state.

Six years ago, Greenlots was a very vocal
advocate of Senate Bill 454 and its ambition to create an open and equitable access to charging infrastructure for all Californians, while easing barriers to the adoption of electric vehicles and establishing a more sustainable foundation for the growth of the industry.

Today, our support for the goals of legislation and the regulatory process to implement remains strong. During this process, we've shared a perspective on some of the implementation details of the proposed regulation, including the potential effects of some of the retrofit provisions and that making sure we don't adversely devalue or compromise existing investment -- investments.

Greenlots is encouraged by staff's proposed modifications to address these concerns. However, some of the modifications may be too accommodating, but we're appreciative and supportive of staff's efforts to find a compromise.

Separately, Greenlots is supportive of staff's modifications to clarify the definition of publicly available and in refining some of the data collection and reporting requirements. We'd also be supportive of some sort of technology review as others have alluded to here today. We'll provide more detailed comments on these proposed modifications during the 15-day period.

Greenlots is excited about the growth of this
industry and helping the industry reach its sustainability. We recognize that CARB's involvement is a reflection of the growth of the industry and that the topics addressed by this regulation are important elements in maturing this market.

While the State has set aggressive goals, we're now seeing local jurisdictions taking leadership roles to further accelerate towards an electrified future, including the vision contained with City of Los Angeles's sustainability plan. The adoption of consumer protections and standards is critical in supporting the growth -- this growth in meeting driver needs.

And for these reasons, Greenlots proudly supports CARB's actions and the adoption of this regulation as modified in the staff's proposed amendments.

Thank you.

CHAIR NICHOLS: Thank you.

MR. GONZALEZ: Good afternoon, Chair Nichols and members of the Board. I'm Tone -- excuse me. I'm Tony Gonzalez. And I'm here on behalf of Electrify America, LLC.

First, I would like to thank and acknowledge the work of the staff in developing this proposal. We've spent a lot of time together over the last almost two years, and I appreciate -- we appreciate their effort.
Electrify America is an EV charging provider investing $800 million in California with -- we've developed -- or have in development 120 ultrafast public DR fast charging stations open or coming soon in California today and will begin work on Cycle 2 investments in July.

Electrify America is committed to driver-friendly, accessible charging stations. All publicly -- all public Electrify America charging stations include multiple payment options, including credit and debit card readers. And all Electrify America stations also support OCPI 2.1 interface to communicate with other networks and Open Interchange Protocol to connect roaming platforms.

Therefore, Electrify America's public stations comply with the requirements of this proposed regulation today and we support CARB proceeding with a few minor modifications.

Electrify America values the ongoing commitment of CARB staff to conducting stakeholder engagement around the proposed regulations. And Electrify America would like to thank CARB for it's proposed modifications brought forward today, which dramatically improve the proposal.

In particular, Electrify America appreciates that CARB is committed to clarify the definition of workplace
charging. SB 454 explicitly exempted workplace charging from this regulation. Electrify America's vendors, Greenlots, SemaConnect, and EV Connect are installing approximately 1,000 Level 2 chargers at workplaces across California on Electrify America's behalf.

We respectfully request that CARB Board members confirm at this hearing that workplace charging stations installed by our vendors will not be subject to reporting and credit card reader requirements.

Electrify America also appreciates that CARB has reduced the reporting requirements. We -- but the regulation would still require reporting that is burdensome on industry. We urge that reporting of transaction type be made voluntary and mandatory reporting be limited to the reporting to NREL referenced in SB 4.

Electrify America has determined that compiling the annual report of transaction types will require Electrify America to integrate multiple data reports from, one, it's network provider, and two, its credit card processor.

To meet an auditable standard of accuracy Electrify America will need to make new ZEV infrastructure investments in reporting capacity and capability. If CARB does plan to proceed with the reporting requirements of transaction types, Electrify America urges CARB to clarify
its definitions of payment types.

For example, Electrify America would appreciate knowing whether a credit card transaction made using tap Near Field Communication technology should be considered, A, a credit card purchase, or two, an NFC purchase.

And lastly, if I may, Madam Chair Nichols. Electrify America appreciates the opportunity to comment and looks forward to work -- to continuing to work with CARB charging providers and EV drivers to build a robust system for electric vehicles.

CHAIR NICHOLS: Thank you. When did you begin installing charging stations?

MR. GONZALEZ: About a year ago. Yeah.

CHAIR NICHOLS: Okay. So you don't have any of the old Level 2 chargers out there at all?

MR. GONZALEZ: We are installing level 2 chargers now.

CHAIR NICHOLS: You are installing Level 2s though?

MR. GONZALEZ: Yes. Yes.

CHAIR NICHOLS: Okay.

MR. GONZALEZ: Absolutely. Thank you.

CHAIR NICHOLS: Thank you.

All right. Hi.

MR. SHAH: Good afternoon, Chair Nichols, members
of the Board and ARB staff. My name is Rajiv Shah, and I
am the Director of Regulatory Affairs at FreeWire
Technologies. FreeWire is a California start-up based in
a disadvantaged community in San Leandro. We are a LACI
portfolio alumni.

And we are supportive of the spirit and intent of
the legislation in implementing regulations, but have some
concerns about whether this might, you know, hinder
innovation and the rapid deployment that is necessary to
meet the State's ambitious EV goals.

I'll just make a couple brief points on some of
our specific concerns and not kind of go through a lot of
the comments that have been well summarized by some of the
other manufacturers and providers in this space. FreeWire
manufacturers battery-integrated charging equipment. We
have a mobile unit that can be flexibly deployed anywhere.
And it is capable of not just providing EV charging, but
also serving as a power source to replace traditional
fossil fuel based generators.

Under the proposed regulation, as I understand
it, chargers that are offered free of charge would be
subject to certain reporting requirements. And we think
that this would create a burden, you know, and really keep
people from installing and offering charging as a free
service and amenity.
But then I think the other -- the other aspect here that's a little troubling for us is that our mobile unit does not have an EV chip -- or a credit card chip reader installed on it. And in our current deployments in California, a lot of them are in sort of a concierge charging model, where people -- primarily used in workplace. But in these workplace settings, you're having a driver drive anywhere in the parking lot, access an app, drop a pin, requesting a charge, and our mobile unit is manned by an attendant who delivers the charging to them.

We envision that this could be also deployed in public parking facilities, like parking garages. In that situation, the EV driver would never be interacting with the charger. And so this requirement that they pay via credit card on -- located on the charger at -- or at a kiosk just wouldn't really apply to us.

In that case, what if the -- what if the EV driver was trying to pay a human attendant located at the facility? We just think that, in short, that this regulation really doesn't think about the evolution and potential innovation that could occur in the EV charging industry.

CHAIR NICHOLS: Thank you.

I believe this is our last witness.

MS. HOSTETTER: Thank you, Chair Nichols and
members of the Board. I'm Obrie Hostetter with Hubject. And we appreciate the opportunity to provide feedback and comments on the implementation of SB 454. We strongly believe that open access to EV charging will help California meet its goal of five million zero-emission vehicles on the road by 2030.

And just to give a tiny bit of background. Hubject's missions is seamless EV charging for everyone everywhere. We were founded in 2012 to solve the issue of consumer anxiety about access to public charging stations, meaning we do roaming.

To date, we've connected over 100,000 charge ports in more than 26 countries and over 300 business-to-business partners.

We utilize a communications protocol called the Open InterCharge Protocol, or OICP, which is the most widely adopted and implemented protocol worldwide. The Open InterCharge Protocol is inclusive of all market participants, regardless of the size of their network and enables an easy and cost effective connection via one interface and one contract.

We understand that ARB staff is currently recommending proposing to require the installation of a different protocol, which is the Open ChargePoint Interface, or OCPI, because it was the only available...
protocol that was truly open source at that time.

However, we are proud to let members of the Board
know that the Open InterCharge Protocol, or OCPI, has
recently been made freely available and is now truly open
source, meaning OICP is free and publicly available either
in a hub based or peer-to-peer network connection.

So first, we want to thank staff for recommending
the use of additional interoperability protocols which
would include OICP. And we very much thank the staff
today, including Stephanie Palmer for mentioning that
today. However, with the opening of this protocol, we
would like to respectfully request reconsidering OICP as a
listed protocol in SB 454 and be included in the 15-day
language.

So we thank for the opportunity to partner with
ARB staff on the successful implementation of SB 454.

Thank you.

CHAIR NICHOLS: Great. We do have one more card
that was submitted Bill Boyce from SMUD.

MR. BOYCE: Good afternoon. I'd like to thank
the Board and Chair Nichols for opportunities to make some
quick comments.

Primarily, our comments are with regards to the
longer timeline for compliance and also the aggregated
reporting. There's a large slug of charging
infrastructure going in in Sacramento over the next year to 18 months and we thought that the extended timeline would be necessary to allow useful life of that equipment as that deployment goes forward.

Those were reflected in the latest version with staff so we support that. We want to thank staff for.

And that, I'll conclude my comments

CHAIR NICHOLS: Okay. Thank you.

So your -- your particular concern was satisfied by the staff agreement.

Okay. That concludes the list of witness that we have. And so I will close the record for this hearing at this point. Although it may be necessary to come back again for further 15-day changes, if changes are needed.

But I think it's time to enter into some discussion here. I find this -- there's a lot of dissonance in this area shall we say. But despite the protestations about interest in seamless charging and all working together, I'm really not hearing any constructive proposals at this point coming from most of the people who've spoken on behalf of this industry.

And I'm hearing a lot of things that don't strike me as very plausible, like the argument about how, you know, credit card readers are subject to fraud, unlike any other kind of payment method, of course, you know, or
other arguments that just don't seem to me to carry a lot
of weight.

So on the other hand, there's -- however many
hands I have, I'm troubled by the -- particularly by the
fact that it's true that we're in a dynamic, fast-changing
world, and we're dealing with an industry that's changing.
The business model that they had doesn't seem to work
anymore and they're trying to figure out how to change it
themselves with all these new agreements between the
different companies.

But from the perspective of the Air Resources
Board, if I try to bring it back to what our
responsibility is here, on behalf of the State, and we do
have other State partners here too, because the funding
that's gone out in grants to subsidize both the new ones
that are coming online soon and some of the old ones
primarily came through grants that were -- that were done
through the Energy Commission. And so we have to be
working in partnership with them on whatever it is we do.
And to the extent that we're dealing with electricity
providers, we have the PUC to deal with as well.

I also am an electric vehicle driver. I'm on my
second electric vehicle. And I have had the experience,
and almost everybody I talk to, once you start the
conversation, has had the experience, of trying to get
charging when you were very low and worried about it
having to abort a trip, or stand in a parking lot in the
dark, in the rain, in scary place, you know, trying to
figure out how to be allowed to charge.

And the situation doesn't seem to me to have
gotten better in, you know, just the last few weeks. So I
think that implementing the legislation, at least, you
know, starting from anything going forward, we just have
to. I mean, there's just -- there's really no excuse for
not setting out criteria that would at least prevent State
money from going to putting in charging stations that are
automatically going to become unaccessible, you know, from
the moment that they're put in.

But, beyond that, I know other people have
different concerns or issues that they'd like to raise.
And so I think I would just like to open it up for
discussion on the part of the Board. I started there the
last time. I going to go down this side the next time.

BOARD MEMBER FLETCHER: Thank you. Thank you,
Madam Chair. I spent four years, prior to coming here, at
a technology company. And so I'm acutely aware of how
fast things change in today's world. I'm also very aware
of the fact that when you're in a business, your primary
motive is to make money. That is your business model.

And so you will do the things that give you an
advantage for yourself. And so if you are in this business, and you can have an app, and folks can only use your charging stations, you build up brand loyalty, you build customer loyalty. That is -- that is in your business model. That makes sense to me. I understand that.

When it comes to having to change things, or change your model, or add things, that is a burden to you. That is something that cuts into your potential profit margins. I understand why -- why one would oppose that.

But our obligation is different. Our obligation is to build out a system that ensures that we can meet the goals we need to meet, that the adoption of electric vehicles can be easy, can be seamless, can be integrated, can be regional. And we have to take actions for what would do that.

If at the early days of the gas station, they had allowed there to be 17 different nozzles, and every company that did it could do their own, there would be tremendous outrage about why didn't have a unified seamless system to do this. And so we're at a point now where I think -- I think we have to take action.

I just want to point out, this is an area that's seen considerable public investment. And a lot of folks we heard from today joyfully take that public investment,
which I believe is needed, and I'm certainly supportive of. But when there is a public investment, there is a public obligation to make sure that there's access, and to make sure that there's interoperability, and to make sure that there is equity in terms of how this is happened.

And it was wonderful to see Senator Corbett, who I had the pleasure of serving with in the Legislature, here. And I want to point out that we are talking about something that was passed and signed into law in 2013. So in 2013, this was State law. And so everything that has happened from 2013 to today, absent the regulatory framework, was still incompatible with State law.

And so to act like it's a surprise that CARB, six years after State law, said this is what's going to happen would be putting in place rules surrounding this as if it -- I mean, it shouldn't come as a surprise that this was coming.

And so I spent a considerable amount of time on this. And I just haven't been convinced of a lot of the arguments and opposition. One of those said this will lead to less chargers. Well, okay, I don't know that that's how supply and demand works. I think that the number of chargers that will be in the market in California will be somewhat proportional to the number of electric vehicles that are in the market in California,
not a fixed amount of what payment method is accepted.

Now, it might be less convenient to put those chargers out there, but I don't believe that there will be less chargers because of this. I think that the number of chargers will increase in some commensurate number to the number of electric vehicles that are out there.

When it comes to the chip readers, as the Chair mentioning, we have the magnetic strips. The reason that you have chips is because they're more secure. That has been the mass adoption that has happened, why is we've seen a 75 percent reduction in fraud with the adoption of the chips. The chips are exponentially more secure than the other forms.

Now, it is true that markets are changing. And we hear that -- you know, where I've read that we're 10 to 15 years behind the European market when it comes to adopting a contactless thing. This has been written on extensively. There was a very long piece in the financial times talking about why America is behind the European Union and other places. We have a much more fragmented financial market. It's more difficult to have widespread adoption of changes in the financial industry.

But if we assume we're 10 to 15 years behind, we can't assume that we should not move forward with where we are now, because it's going to change tomorrow. I don't
think that it will change tomorrow.

When you look at where we are today, over five --
only five percent of credit cards are contactless today
and only 0.18 percent of credit card transactions are
utilized via a contactless system. I don't know that we
can adopt a standard for 0.18 percent of credit card
transactions.

I am open to the notion of giving some
flexibility. Because if this market were to rapidly
change, then we would want to be able to change as well.
But the notion that we have to wait for a future
technology that may come at some point in the future when
we don't know when that will be, I can promise you we
could wait 10 years and if in 10 years we're contactless,
then we would be sitting in this same room and we'd say,
no, you can't do contactless, because there's a new thing
that's coming and we have to wait for that thing.

And you can't future-proof anything. You have to
move forward in the world that you're in with the payment
method that the overwhelming majority of folks use. And
if it changes, then we as an entity have to be flexible
and adaptable in how we would change that.

I also, in wrapping up, think that there are very
real equity issues here. And we have real challenges in
air quality in disadvantaged communities. And there are
financial barriers to entering the market in electric vehicles, and we're all working to try and address that. But we cannot compound that by adopting a payment system that only a small fraction of the most privileged and elite will most likely have access to.

And then finally, one point that was raised that did get my attention said that these things are in unsafe areas that are not well lit and so you're more likely to have fraud. And if that is true, we certainly do not want people to be unsafe. And so perhaps we should look at further guidance around lighting and safety around electric vehicle charging stations, because I hear the concern. If these are unsafe, then I think we all want to move to try and make them as safe as possible.

And then in closing, I'll just say we can't provide choice. We talk about consumer choice. There cannot be choice if the choice that the overwhelming majority of consumers would make today is not available to them, then there is no -- there is no choice.

In the building where I work every day, I met with a group of electric vehicle advocates, folks on the vehicle side, folks on the charging side, folks on all sides this week at the County of San Diego as we develop an electric vehicle roadmap and charging station. And I heard horror stories of our own charging stations in our
own parking garage, which is underground, about you cannot
use them, because there is no cellular connectivity down
there.

(Laughter.)

BOARD MEMBER FLETCHER: And so they cannot
download the app in our own building for the facilities we
put in to come to the meeting about what the future of
charging stations would be.

And so I'm not unsympathetic to the folks' concerns, and I understand where you're coming from, and I
realize it would be easier to continue the way they're going, but we simply can't -- with the goals we have as a
state, we cannot have a fragmented system that is not accessible to the most amount of folks.

And so I'm open to the notion of flexibility. But I think given where we are today with what the market
looks like today, I'm supportive of moving forward with this.

Thank you.

CHAIR NICHOLS: Thank you.

Any other comments here?

Do you want to go next, Dan? Okay.

BOARD MEMBER SPERLING: So this is a real -- to me, this is a really difficult one. One the hand to --
you know, what Chair Nichols said in the beginning, on the
one hand, you know, we're committed to accelerating the technology and the investment, on the other hand, looking out for the interests of the users and the consumers.

And, you know, how much you weight each one is difficult. And I kind of think of it as we're at the early stage, so I'm a little more inclined to support, you know, the focus on innovation, and technology development, and new business models. And so, you know, I respect the idea that, okay, if you look at it from a business perspective, you know, you think of it one way.

But another way of thinking about it is that this is not a normal business. No one makes money from selling electrons. You know, if you just think about it in a very simple way, you know, say, a big battery, 50-kilowatt hours, times $0.10 or $0.20, you know, you're talking about $5, $6, $7, $8 at most where as a gas -- and if it's fast charging, you get that in 30 or 45 minutes. If it's, you know, level 2, that's many hours. And you compare that to a gasoline stations where in five minutes, you know, you sell $80 worth of gasoline.

And so it's a very different situation. And so I think about it in terms -- and we're at the very early stage. So I keep hearing the stories about different kinds of businesses models and different circumstances. You know, the last one about the parking lots and having
kind of a mobile service in a parking lot. And it seems
like there's a lot of opportunity for innovation.

And so I support -- you know, so the staff laid
out a number of changes. And I think all of them -- I
didn't delve deeply into all of them, but they -- you
know, the idea of -- or the requirement for roaming
standards, fees -- display of fees, labeling, consistent
reporting, they all make a lot of sense. It's real -- I
think we're all here -- I think the debate is mostly about
requiring a credit card.

And I guess I -- so one way I think about it is,
okay, there's Level 2 and level -- and fast charging.
Fast charging I'm much more comfortable with this idea of
requiring a credit card and however that evolves. There's
more revenue. It's more of an opportunity charging
situation. And you want that kind of compatibility.

With the Level 2, you know, this is an experience
where it's several hours. You know, it's not a gasoline
type purchase. It's a very different kind of thing. And,
you know, I know, yes, they're going to have to sell the
lattes to, you know -- go back to our earlier story.
They're going to have to sell -- just like gasoline
station -- even gasoline stations with all that revenue,
you need to do other things.

And so all these charger companies are making
money only by having a workplace subsidize it or the city hall subsidize it, or the retailer subsidize it. And so if we kind of restrain innovation and -- and we see it, it's innovation in terms of the technology as well as the business models, it worries me a little, because it's already an uphill battle to get these chargers out there. You know, we have to -- someone was to subsidize them for them to happen. And so by making it more difficult and more expensive, you know, we are slowing it down.

Now, what troubles me is we don't really know what the future is. We don't even have good analysis of even how these chargers are used today, never mind in a few years. So I'm kind of -- I come down -- you know, so I come down to the idea, okay, a little flexibility. How -- what would that mean? You know, you raise the question flexibility.

And so I think, at a minimum, what we're doing with -- you know, requiring roaming arrangements and making sure that, you know, when you roam, you're not paying some big premium. I don't know if that's part of the regulation, but that would be something to think about. Make sure there's no abuse going on.

And, you know, making these 800 numbers really work. So, I know, you can call these 800 numbers and they
say, you know, go -- get on our website and enroll, you
know. And that's pretty lame. So that's not acceptable.

CHAIR NICHOLS: Right.

(Laughter.)

BOARD MEMBER SPERLING: And almost everyone on
this Board has a bad experience.

(Laughter.)

BOARD MEMBER SPERLING: So maybe -- okay. So one
thing is the technology. You know, as Vice Chair Berg
says, I support something like what she said where we need
to be agile in appreciating how the technology is
changing. And I support that idea of the Executive
Officer and the staff, you know, reviewing that.

But I do -- I'm having a lot of trouble with the
idea of having credit cards for the Level 2. It does
increase cost for something that doesn't have a good
business model to start with.

CHAIR NICHOLS: Well, except that that's what
Electrify America is actually doing. I asked the question
and that's what he said. And they're in this to make
money. They're not doing it for the subsidies.

BOARD MEMBER SPERLING: Yeah, they kind of are in
an awkward situation, but, okay.

CHAIR NICHOLS: Well.

(Laughter.)
BOARD MEMBER SPERLING: So, you know, I've not heard -- so I guess I'll leave it there, is that --
(Laughter.)

BOARD MEMBER SPERLING: I would support the idea of -- I would personally prefer that for the time being we said roaming arrangements required with some kind of oversight of those 800 numbers required, where they actually, you know, work. And I'd probably be comfortable with the credit cards for the fast chargers. But the Level 2, I just -- it just makes me very apprehensive that --

CHAIR NICHOLS: How about if we put a sticker on every station with your phone number on it --
(Laughter.)

CHAIR NICHOLS: -- and it says if you didn't have a good experience, call this number?
(Laughter.)

CHAIR NICHOLS: Because we're going to get to that point soon the more cards that are out there.

BOARD MEMBER SPERLING: You know, there is one question to staff I had. And that is that what do we really know about reliab -- you know, the reliability of these credit cards? Because, you know, the argument that's made is that if it's in a exposed area -- and so I know that I had a charger and it was left outside for a
few years, and it did go bad, and that was supposed to be
impervious to the weather. So a credit card I know is a
lot more vulnerable.

So is there data or evidence about the
reliability of credit card readers that are exposed,
number one. And number two, this idea -- this problem of
what they call skimming, you know, fraud -- and I know
fraud is already high with credit cards. And I have been
hearing a lot of stories about how, you know, credit card
readers that are left relatively unattended are especially
vulnerable to this skimming. And can you explain what
skim -- how that really works by the way? We're not --
we're note -- most of us here are not involved in these
criminal activities.

(Laughter.)

BOARD MEMBER SPERLING: That I know of.

BOARD MEMBER FLETCHER: All of us are not
involved in this.

(Laughter.)

BOARD MEMBER SPERLING: What are they talking
about? How does that really work? And is that really
relevant?

CHAIR NICHOLS: Okay. Thank you. Yes, Mr.
Eisenhut, we skipped over you.

CHAIR NICHOLS: Oh, sorry. Staff wanted to
respond. Okay. Please go ahead.

AIR RESOURCES ENGINEER PALMER: Hi. This is Stephanie Palmer. In response to the reliability of the EMV chip reader, we have actually looked at parking meters, specifically curbside parking meters and their reliability, because we know they're being used today.

It is my understanding that when the parking meter does have issues, it is actually not because of the EMV chip reader. It is primarily because of vandalism from outside sources.

STCD ASSISTANT DIVISION CHIEF BEVAN: And on the question of fraud, our investigation of how fraud happens with EMV chip readers with mag swipes and with Near Field Communication, mag swipes are the most vulnerable and that's why we've moved to the EMV chip. The credit card companies, Visa, has told us that EMV chip readers and Near Field Communication have similar and equal vulnerabilities in terms of fraud and all the concerns over security.

In the case of the EMV chip reader, what might happen is something like shimming, where a device is placed inside the reader and it isn't actually getting information necessarily from the chip. It may be getting that from a mag swipe as it goes by. The way the chip works is it's a small computer that fires up when it comes
in contact with the reader, and it transmits information about the credit card number, and its expiration date, and a dynamic CVV number, that three digit number that you would place when you're entering a credit card on a computer. It uses a dynamic number in the case of a reader.

The same can happen with Near Field Communication. There can be a Near Field Communication reader that's placed on surreptitiously on the device, which takes the same information. The only difference between an NFC and a chip reader is the NFC has an antenna, so that it's wirelessly communicating with the device, the point of sale.

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

CHAIR NICHOLS: Yes, go ahead.

BOARD MEMBER FLETCHER: Have you seen the -- because I think the parking meter is a good analogy or comparison. In San Diego, we just went not to the kiosk model. I mean, the kiosk model is one model that perhaps I think could be adopted under these. But ours in San Diego, we converted the individual parking meters for each stall all take a credit card.

And so are you aware of any -- obviously, they were able to make that work in a tiny little parking
device. And it would seem if a tiny little parking device
could make the electric credit card reader work, a massive
charging station that has the capacity to connect to a
grid and move significant amounts of electricity could do
it. But have you seen any significant problems or
challenges in the parking meter market in response to
this?

AIR RESOURCES ENGINEER PALMER: In response to
the EMV chip? No, actually, major cities within the State
of California are actually deploying that today.

BOARD MEMBER FLETCHER: And they're still
deploying that today.

AIR RESOURCES ENGINEER PALMER: The EMV chip
reader, that is right.

BOARD MEMBER FLETCHER: Right. Right in parking
meters.

AIR RESOURCES ENGINEER PALMER: In the curbside
parking meters. That is correct.

BOARD MEMBER FLETCHER: Okay. Thank you.

STCD ASSISTANT DIVISION CHIEF BEVAN. And we are
offering the option of installing a kiosk, if there's a
back of chargers, so that's also envisioned within the
regulation, a single kiosk for a number of stations.

BOARD MEMBER EISENHUT: I'm carefully sandwiched
between two people on this Board whose opinions I very
much respect --

(Laughter.)

BOARD MEMBER EISENHUT: -- and who now differ.

I have one very focused question. I believe that the most fungible commodity are dollars. And I'm assuming that a prepaid card, one that you could obtain from Amazon or Walmart, satisfies the requirement of the proposed regulation?

STCD ASSISTANT DIVISION CHIEF BEVAN: Correct.

BOARD MEMBER EISENHUT: I just want to verify that.

STCD ASSISTANT DIVISION CHIEF BEVAN: Yes. So a prepared credit card that you can load funds onto can typically be used in an EMV chip reader. That's -- as we talked with visa, they explained that rollout of new technology -- new reader technology tends to start with traditional credit cards, then it moves to debit cards, and finally it gets to EM -- to prepaid credit cards.

So we finally see today that if you go to Target or you order a card on Amazon, a prepaid Visa, they now have chips. And that's one of our concerns with adopting Near Field Communication as the -- as an option to EMV, is that we don't foresee Near Field Communication technology being rolled out on prepaid credit cards until after we see it rolled out on traditional credit cards and debit
cards. And that may take some time.

BOARD MEMBER EISENHUT: Okay. Thank you. To me, that's a critical component of our -- of the environmental justice community's access is that device. I would be -- I am supportive of the staff recommendation for a variety of reasons, which we don't bear repeating. But -- and I -- I am very sympathetic to what I'll call the Berg amendment, which I think might somewhat split the difference between may neighbors. I say that. I'm not looking for affirmation.

(Laughter.)

BOARD MEMBER EISENHUT: And I realize I would -- if we do head in that direction, I would encourage those of you in the audience who are advocates not to rush to the CEO's office, because I think those exceptions will be handled out -- handed out sparingly. And this topic, while I was not part of the process, was -- came through the Legislature with, I assume, very much the same discussion, very much from the same group of advocates.

And there's a legislative backing to the action that we're taking that's now five years old. It's time for that adoption. It's time to move forward. And so I think that's -- those are my comments.

Thank you.

CHAIR NICHOLS: Yes.
BOARD MEMBER DE LA TORRE: Thank you.

I want to, first of all, say that I agree with Supervisor Fletcher's comments. And thank you, Senator, for being here. If I had written a bill and six years later it hadn't been implemented, I'd be right there too. (Laughter.)

BOARD MEMBER DE LA TORRE: So that's for starters.

Second - and these will be just very brief - implementation dates of '20 and '23. There's time here.

Number two, we are driving this market. The State of California is driving this. Our dollars are funding the stations. Our dollars are supporting the vehicles. We are absolutely pushing this. And one area that I discussed that we -- that hasn't come up here today that I want to see us do more on is the secondary market, electric vehicle secondary market. That is something that we absolutely have to do if we want to get into underserved communities. We're going to figure something out in that space as well. As we do that, this issue is going to become even more important. So that's what I'm looking at.

To that point, one of my calls with one of the interested parties, they told me with pride that about 80 percent of the people have smartphones with capability to
get into one of these programs -- one of these electric
charging programs. I said what about the other 20
percent?

Well, they can -- you know, over time, they'll
all -- well, as members of this Board, we represent 100
percent of Californians. We don't represent the 80
percent that have this or the whatever percent that have
some other contraption. We represent everybody. And that
is where we're going with this legislation. I know that's
what the Senator was thinking when she wrote it.

As we move forward, the next steps -- and I know
there's some transparency measures here -- the next steps
for us are going to be about transparency and cost. We
have to get -- we, as a state, not just this Board -- PUC
will have something to say about. The munis will have
something to say about it, et cetera. We have to get to
some clarity of what this costs. We cannot be pushing
this as much as we are and then have sticker shock at the
end for the consumer.

We're not there yet, but I absolutely am
supportive of moving in that direction after we take care
of this piece.

Thank you.

CHAIR NICHOLS: Thank you.

Ms. Riordan.
BOARD MEMBER RIORDAN: Madam Chair, one of my concerns I think has been resolved, which is the early adopters. I never want to penalize early adopters and who -- people who have helped us in this process. So I think that is resolved.

And I would certainly support as what has been referred to as the Berg amendment. I think technology is moving. And I don't think it's something that needs to come back to this Board. I think it can easily go to staff and to make the adjustments. So I am very supportive.

CHAIR NICHOLS: Thank you.

Now, headed down in this direction. I'll just go in order. Go ahead.

BOARD MEMBER SHERIFFS: Thank you.

Yeah, once again, we are between encouraging technology and being sure we're not setting up barriers. But the public interest and access it's huge. You know, I was thinking about my wallet, and I was thinking about, you know, I don't have anything contactless in my wallet. You know, it's all credit cards. And I think that speaks to what's out there. And we're -- we are looking for a system of access. We're looking for the -- I don't -- I didn't buy any EV so I could have a new charging experience --
(Laughter.)

BOARD MEMBER SHERIFFS: -- a new fueling experience. No. No. You know, it was enough of a change to get an EV. I wanted the world to look as much the same as possible, in terms of convenience, and ease, and all of this. And maybe, you know, part of the unpredictable future that would answer some of these worries about fraud and safety, well, I still envision the fueling station of the future. And it's everything under one pull-up. You know, all the fuels are there. You can get your hydrogen and you can get your electricity, you can get your petroleum products, you can get your renewable natural gas in and one place. And that would answer a lot.

I don't know what the future is going to look like, but it always seems to me that -- that model might be important.

But I also then realized, wait a minute, I do have a contactless reader in my pocket. And it's a BART card. And let me tell you, when I go to San Francisco and use my BART card, I really feel like I've arrived. I'm -- you know, I'm really 21st century.

(Laughter.)

BOARD MEMBER SHERIFFS: And why do I have a BART card? Because I'm a senior.

(Laughter.)
BOARD MEMBER SHERIFFS: Okay. And it was worth going down to the Ferry Building and getting the BART card as a senior, because, you know, it discounts the travel. And so that's another suggestion.

Hey, you know, you -- the -- these providers want, for whatever reason, the consumer to use their card. And I'm assuming, what little I know about Silicon Valley, you get information that you're not going to get out of a credit card or a debit card. And I understand that's the model.

But BART made it worth my while to get their card. And so I got that contactless card. And I presume that's really the way they'd like us all to behave in the future. But it comes in steps. And right now, most of the public is going to use their credit card or a debit card, and especially communities we worry about. We want to be sure that these things are accessible to disadvantaged communities, to communities in the Valley, the Inland Empire, who -- you know, the statistics tell us are not the leading change agents the way people in the Bay Area and South Coast.

So I want to be sure we have access. I want to be sure it looks as much like the current experience. And I have great confidence in the staff and their flexibility, paying attention to how things are rolling.
out and whether what we're doing is really being a barrier to implementing new technologies. And if it is, we consistently hear about it, and we think about another way to approach and encourage it.

So I don't know about the Berg amendment. Somebody is going to have to explain it to me again before I'm into that one, because I think staff has done a good job, and has made some, you know, major adjustments that answered a lot of -- a lot of the questions for people. And I'm quite satisfied with that.

CHAIR NICHOLS: Mr. Serna.

BOARD MEMBER SERNA: Thank you, Chair. So a lot of this has already been said about what's in front of us. And I won't belabor a lot of that. I do agree with a lot of the comments that my colleagues have already issued.

For me, this is not as complicated as it may seem. When you look down the list of oppose, neutral, support, and you have X's in the boxes of the entire field, you might think, well, this is -- this is, you know, a somewhat complicated matter before this Board. But I go back to the genesis of why we're here. And I'm thankful to the Senator for really giving us the -- I think, the appropriate context for us to consider this and for the public that has taken the time to provide
testimony to consider this.

And it really has to do with an Executive Order that lays out a very bold ambition for the state of California. And it comes down to the intent that was articulated about access. And so when I look at those two objectives, for this Board member, it's -- this is not -- I won't call it a no-brainer. It's never a no-brainer. There's always room for improvement and productive discussion in terms of amendments and whatnot.

But that's really the lens that I'm looking through. But with that said, we heard from one particular interest, Electrify America, who, as was noted, is very busy trying to increase charging access across the State of California, and most notably here in the county that I represent as a supervisor.

They did provide in writing a couple of questions or need for clarification on two matters. So I would like staff to respond as best they can to the workplace charging definition question, and also the reporting question that Electrify America brought up in their testimony.

STCD ASSISTANT DIVISION CHIEF BEVAN: Okay. This is Analisa Bevan. On the question of workplace charging, we do explicitly exempt workplace charging in the regulation, so long as it's not open to the public. If it
is open to the public after hours or even during the work hours, then it is considered public.

We're -- we did have a lot of comments from different providers who wanted to exempt those stations that were at workplaces that might be open at specific hours, apart from their regular business hours, to be -- to not have to have the credit card reader. We are being consistent with Department of -- sorry, Department of Measurement Standards, and their definition of public, which is if the public sees the charger and they have to pay, then it is public, and it would have to comply with the requirements associated with public chargers.

BOARD MEMBER SERNA: Okay. And reporting?

STCD ASSISTANT DIVISION CHIEF BEVAN: And on the reporting, so we are not particularly excited about making reporting voluntary. Some of the questions raised or some of the concerns raised by the providers was that we didn't have data, and it wasn't for lack of asking. And additionally, we were told that they didn't have the data. So we want to make sure that they're actually collecting data about how chargers are being used, what payment types are being used, and that we can have access to that on a statewide aggregated basis, so that we can assess how technology is changing and how technology is being used.

I'm check -- I have a copy of the written
comments, so I'm checking the other question.

CHAIR NICHOLS: Well, if there was software on the chargers, it would probably be directly accessible to us without having to have it be collected by them. We could just set it up, so that we could get the data directly without having to go through the owner of the charging station.

STCD ASSISTANT DIVISION CHIEF BEVAN: Okay. Yes. The other thing with clarifying payment types, and we will make sure that the language that we have in the regulation is sufficiently clear to delineate the different between a credit card -- sorry, a transaction started with a credit card using an EMV chip versus NFC, and then separately using the -- a mobile payment, and then separately using an RFID cards that's part of the network, or the app that a network might have.

BOARD MEMBER SERNA: Thank you for that clarification.

One last question. I think we're all familiar with the fact that -- you know, there's been a lot said today that what we're considering should be somewhat analogous to the ease with which we're accustomed to using standard gas stations. We know that in many cases gas stations will have a separate pricing structure for cash versus credit cards. Is there anything in these standards
that prohibits charging service providers from having a
different price structure depending on payment type?

STCD ASSISTANT DIVISION CHIEF BEVAN: There is not. There was nothing in the bill that spoke to
different price structures. And that's one of the reasons
that we think it is so important that those price
structures be communicated to drivers before they initiate
a charging session, so that they know what they're paying,
either using a credit card or using the network price, and
if there are roaming costs, or connection fees, or a
different fee for using a credit card versus the network.

BOARD MEMBER SERNA: So claim's that there might be additional expense because there's not an optimal
payment type, you know, claimed by a particular electric
charging service provider, they could roll the dice, take
their chances with the market and consumers, have an
increased price structure to try and recoup those costs,
and that's -- you know, that will help them with their own
bottom line, correct?

STCD ASSISTANT DIVISION CHIEF BEVAN: Right. There's nothing in the regulation that speaks to that.

BOARD MEMBER SERNA: Okay. Thank you.

CHAIR NICHOLS: Thank you.

Ms. Takvorian.

BOARD MEMBER TAKVORIAN: Lastly and briefly. A
lot has been said. I just wanted to express my appreciation to Senator Corbett for your leadership and foresight and for your patience, not only for the last six years, but today. I appreciate it.

(Laughter.)

BOARD MEMBER TAKVORIAN: And I think that you said it all when you talked about access. And I think that's our job. And I think we're making good progress and I'm prepared to support the proposal.

I wanted to just say a couple things. One is it -- and I think this has been said before, but from public support, not only for the establishment of these charging stations but for the whole industry of charging stations, really comes because of the leadership of our Legislature and because of the leadership here at CARB.

So this whole infrastructure and charging business model wouldn't exist if we didn't have the leadership that we have in the state of California to push forward electric -- electrification of vehicles.

So you're welcome for that, and -- because I didn't hear anybody thanking the Legislature or CARB for having done that, and for having created all these business. And so, yeah, I'm a little cranky about now complaining about these publicly supported institutions that are now having to come up to speed to be accessible.
to at least part of the population. And I really want to underscore Mr. Eisenhut's and Assembly Member Garcia's thoughts about ensuring that we are accessible to all members of the communities. And I appreciate the fact that we can use these prepaid cash cards or credit cards, which may be more accessible for disadvantaged communities. And I think I would be thrown out if I said we hope that there -- they could accept cash as well.

(Laughter.)

BOARD MEMBER TAKVORIAN: That's a joke, along with the coffee.

But really, if we're talking about access, that would be -- that would be another step that we would --

that we would take.

So I just -- my question is, in all seriousness, it sounds to me like the rule is really setting a floor and not a ceiling for technology. So if a company wants to roll the dice with another technology, they need to incorporate the technology that we're requiring in this proposal, but they could use contactless or other kinds of technology, if that's what they thought the market would bear, is that correct? Am I understanding that correctly?

STCD ASSISTANT DIVISION CHIEF BEVAN: Yes.

BOARD MEMBER TAKVORIAN: Okay. So go for it, right --
(Laughter.)

BOARD MEMBER TAKVORIAN: -- is partly what I would say is folks can take chances with that and see if that's what the market would bear. And I agree I think with the Berg amendment that says that if we have proper reporting, then CARB can track that and see how that's working, so that in the future we can make those amendments and revisions that would be appropriate to make the rule more applicable in the future.

Thank you for all your hard work and for everyone who was here today.

CHAIR NICHOLS: Okay. Coming back to this Chair, I -- I've just been looking at the resolution while listening to my fellow Board members' comments. And I think it's open to the interpretation that the Executive Officer can make modifications as he goes along. But if we're -- if we want to be clear on some sort of a regular assessment of the situation, and the action by the Executive Officer that doesn't have to come back to the Board, I think we may need to do some -- a specific amendment to the resolution.

The only other thing I would like to say is having heard many of the comments both from the speakers and from the Board members on this topic, we need to broaden our involvement in this whole issue of the
charging stations, and the deployment, and the
accessibility, of course, but also looking at whether
there are new solutions.

I have to admit when -- I guess it was Dr. Sherriffs who wanted his experience to be just like having
a gasoline car. I actually do not. One of the reasons
why I love my electric car is that I don't ever have to go
to a gas station. I -- my gas station is at home and it
makes my life so much easier. It saves me time and it was
never really all that enjoyable of an experience.

And recently, when I had an opportunity to
address the Board of a very large international oil
company, and said something about -- we were talking about
hydrogen delivery and going through gas stations, I
mentioned that, you know, I would -- used to go take --
when I had a hydrogen car, used to go to a gas station
that had a hydrogen pump. And the comment was, well, we
don't make any money selling gasoline at these stations
either. You know, there is no -- the business model, the
retail store where they sold the gas at the pump, and they
made the money on the gas does not exist anymore. They
make all their money off of the chewing gum and the donuts
or whatever it is that they're selling you, right?

(Laughter.)

CHAIR NICHOLS: So, I mean, it's -- I mean, this
is not even a change in terms of going from gasoline to electric. It's just a change in the way people buy things period.

Anyway, having said that, I do feel that we have an obligation to move on here and to pass something. But I just want to make sure that we've got an agreement from the staff, and I guess I'll ask Mr. Corey or you can delegate this comment if you want to, but, you know, how you propose to respond to the direction that I think you're hearing pretty clearly from the Board about wanting to increase the level of knowledge, awareness, and involvement really in making sure that the infrastructure is rolling out here in a way that supports the kind of market that we want to see.

EXECUTIVE OFFICER COREY: Yeah, a few things. One is the coordination with CEC and the PUC, the utilities, and local utilities as well that are making agencies oversee the utilities both POUs and IOUs making significant investments in this play -- in this space. Our coordination with them is tighter than it's ever been. We need to do more in terms of our advisory role with those agencies. That plays a significant role. Even our coordination on this regulation with the CEC, the PUC has been pretty significant. It needs to improve.

We think that's a key area in terms of data
exchange with those agencies in terms of the data we collect under this program, the data they're collecting as part of the distribution of the networks, the users of those networks, and the associated information.

And I really think this -- this reg, in terms of the data collection is going to represent a pretty significant step change, because there's a lot of questions, several of which the Board members asked, about the nature of charging, the type of charging, the time of the charge, the distribution of those charges, this data will be super useful in terms of the penetration going forward.

So I think a key step really is the data collected under the implementation of this regular, as well as enhanced coordination with the PUC, CEC, and the reporting of that data in different metrics, including the station access, station usability and so forth. So we think that's an initial step on this.

CHAIR NICHOLS: Okay. So as far as assuming that we're going to act on the resolution at this meeting, are -- do we need to make a change here to deal with the phase-in issue? I mean, I would like to make sure that we're not forcing people to retrofit things that don't make sense to retrofit, if they're either just about to go out of business or -- I mean, if they're -- if they -- the
equipment is about to be replaced or if they're just getting started with a grant that the State itself has given them, that seems to me to be a special circumstance and certainly something that would be disruptive.

Do we need language here to make that effective? A conference is taking place.

DEPUTY EXECUTIVE OFFICER CLIFF: Chair, Nichols, the way that the resolution is constructed it would direct us to put in place the 15-day changes that staff proposed in the presentation.

CHAIR NICHOLS: So that's already -- it will come back after the 15 -- that's automatically --

DEPUTY EXECUTIVE OFFICER CLIFF: Yes.

CHAIR NICHOLS: -- included? Okay.

So based on the conversation that we've had here, do you feel like you've got sufficient direction as to what should go into the 15-day changes?

EXECUTIVE OFFICER COREY: We do. I believe that the changes laid out in the Board presentation --

CHAIR NICHOLS: Yes.

EXECUTIVE OFFICER COREY: -- which had multiple elements that were discussed amongst Board members provide, based on the direction here, sufficient clarity for moving forward.

CHAIR NICHOLS: Okay. So again, this will come
back to the Board following the changes being proposed, and there will be another 15-day public comment period before we take final action?

BOARD MEMBER RIORDAN: No, I don't think so.
CHAIR NICHOLS: No.
BOARD MEMBER RIORDAN: Is that right?
EXECUTIVE OFFICER COREY: No. This would be a vote by the Board with direction to the Executive Officer to execute on the 15-day changes.

CHAIR NICHOLS: You would make the changes.
EXECUTIVE OFFICER COREY: Correct.
CHAIR NICHOLS: Okay. Good. That sounds fine. That's consistent with what Ms. Berg was recommending.

BOARD MEMBER RIORDAN: Yes. Yes.
CHAIR NICHOLS: Okay. In that case, do we have --

BOARD MEMBER SHERRIFFS: So moved.
CHAIR NICHOLS: Do we have a motion? We have a motion.
BOARD MEMBER RIORDAN: And I'll second.
CHAIR NICHOLS: And a second. All right. All in favor please say aye?
(Unanimous aye vote.)
CHAIR NICHOLS: Opposed?
All right. Motion carries.
Resolution passes. Are you clear on what we're doing?

No.

(Laughter.)

CHAIR NICHOLS: I'm worried by the conference that's taking place here.

(Laughter.)

CHAIR NICHOLS: Are you comfortable with the discussion?

EXECUTIVE OFFICER COREY: Yes.

CHAIR NICHOLS: All right. All right. Thank you. Great. We did it. Thank you, Senator, for coming and encouraging us. Thanks to all who participated. This is not the end, but it's moving in the direction of getting an improved process for dealing with charging stations and making consumers lives much easier.

Our final item today is a report on the enforcement plan -- enforcement program.

We've got a new team here coming up.

So the last item here is the 2018 Enforcement Report. Every year, the Enforcement Division publishes a report highlighting its CARB-wide enforcement efforts to ensure compliance with our regulatory programs. The 2018 Enforcement Report is now available on our website. And today, the staff will be presenting highlights from that...
Mr. Corey, would you please introduce this item?

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

We protect public health and the environment by developing and implementing regulations that reduce emissions. These programs are only effective because regulated parties meet requirements. Most in industry these requirements, but some don't. Enforcement programs help bring noncompliant entities into compliance, create a level playing field across industry, and ensure emission reductions envisioned when regulatory programs were adopted or achieved in practice, especially in disadvantaged communities, where emission reductions are needed most.

I'll now ask Amanda Amoruso of the Enforcement Division to give the staff presentation.

Amanda

(Thereupon an overhead presentation was presented as follows.)

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

Today, I will be reviewing the 2018 Annual Enforcement Report.

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AIR POLLUTION SPECIALIST AMORUSO: In today's
presentation, I will start with an overview to describing our goals, actions, and highlights from the report. Then I will review how we enforce certification requirements, describe compliance rates in the trucking industry, talk about our enforcement efforts in disadvantaged communities, provide an overview of our supplemental environmental projects, review our current programs, and discuss what to expect in the coming year.

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AIR POLLUTION SPECIALIST AMORUSO: Our goal is to achieve compliance in every regulation we enforce, and in doing so, protect public health and the environment and ensure a level playing field across industry.

Enforcement efforts strengthen our programs by bringing companies into compliance and by identifying areas to improve development, implementation, and enforcement of regulations.

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AIR POLLUTION SPECIALIST AMORUSO: The 2018 Annual Enforcement Report highlights many achievements. In the 2018 report, you will learn about our enforcement of defeat devices, trucks, and other programs; our efforts in disadvantaged communities; and our Supplemental Environmental Projects Program.
AIR POLLUTION SPECIALIST AMORUSO: Next, I'll review enforcement of certification requirements for vehicles, engines, fuels, and consumer products.

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AIR POLLUTION SPECIALIST AMORUSO: Regulations determine product specifications that must be met before that product can be legally offered for sale or sold in California. Manufacturers of vehicles, engines, parts, fuels and consumer products must meet these requirements.

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AIR POLLUTION SPECIALIST AMORUSO: Certification requirements apply to manufacturers of light-duty, heavy-duty, on- and off-road engines, and vehicles intended to be sold in California.

Following the discovery of defeat devices in Volkswagen vehicles, staff developed new procedures and test cycles designed to find violations of certification requirements. Currently, there are multiple manufacturers under investigation.

Violations may include failing to report complete information, using noncompliant procedures during certification tests, or improper use of, or failure to, disclose software that may increase on-road emissions, such as devices used to defeat emissions controls.

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AIR POLLUTION SPECIALIST AMORUSO: CARB tests identified alleged defeat devices in Fiat Chrysler Automobiles, or FCA, diesel vehicles. During standard certification testing, these vehicles appeared to meet the emissions certification requirements, but when staff used newly developed test cycles, we found these vehicles exceeded NOx emissions limits. FCA settled with CARB and the U.S. EPA for a nationwide settlement for a total of $500 million. California's portion of the settlement includes $45.8 million in penalties, $19 million to fund mitigation programs to offset NOx, and $13.5 million to the Attorney General's office for consumer law violations.

FCA agreed to recall and fix all of their vehicles containing the illegal defeat software. The mitigation and penalty funds have been deposited in the Air Pollution Control Fund to be appropriated by the Legislature.

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AIR POLLUTION SPECIALIST AMORUSO: California's anti-tampering laws prohibit manufacturers of aftermarket parts, wholesalers, and retailers from installing, selling, offering for sale, or using parts that modify engines or vehicles from their originally certified configuration unless those parts have been exempted by CARB in part-specific Executive Order.
Pep Boys is an auto parts, repair, and service chain that sells aftermarket parts online and in stores. Staff found Pep Boys sold aftermarket parts that were not approved by CARB, including catalytic converters and intake kits.

Another company, AZAA investments, also violated the aftermarket parts regulation. AZAA was not cooperative initially in the settlement process, and the California Office of the Attorney General was brought in to help resolve the case.

We settled both cases and the companies agreed to stop illegal sales.

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AIR POLLUTION SPECIALIST AMORUSO: Staff in the Consumer Products Enforcement Program purchased chemically formulated products, composite wood products, and indoor air cleaning devices and submit to the laboratory for testing. Enforcement action is taken if analysis identifies violations. CARB staff found Mothers Polishes, Waxes, and Cleaners Incorporated sold metal polish products that contain volatile organic compounds exceeding the allowed limit.

CRC Industries, Incorporated sold electrical cleaners that contained toxic air contaminants.

And Provenza Floors, Incorporated sold laminate
wood flooring that contained excess formaldehyde emissions and also failed to take precautions to ensure they sourced only compliant materials. Through settlements, these companies paid penalties and agreed either to reformulate their products for sale in California or to stop sales in the state.

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AIR POLLUTION SPECIALIST AMORUSO: Staff enforces California's gasoline requirements, which reduce emissions from evaporation and burning of gasoline by conducting inspections and reviewing information reported in databases.

Through a routine inspection, staff found GE Warren, a petroleum product supplier, imported 11 million gallons of noncompliant fuel and Shell Oil Company sold the fuel to local gas stations in California. This would be about 60 percent of the daily fuel used in Southern California. Working collaboratively with CARB, Shell halted all sales of noncompliant fuel, rebled it to CARB standards, and began selling the compliant fuel to gas stations. A portion of this settlement went to fund eight different Supplemental Environmental Projects.

The Low Carbon Fuel Standard, or LCFS, Program incentivizes innovative fuels to reduce greenhouse gas emissions. The Tesoro Refining and Marketing Company was
found in violation of misreporting significant volumes of fuel to the LCFS reporting tool and settled with CARB improving its software to ensure errors do not reoccur.

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AIR POLLUTION SPECIALIST AMORUSO: In this next section, I'll review current Board programs pertaining to the trucking industry; provide our assessment of enforcement to date and compliance challenges; and describe the actions the Board is taking to improve programs to address these challenges.

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AIR POLLUTION SPECIALIST AMORUSO: Assessing compliance rates allows enforcement staff to understand what is happening and how we can improve implementation of our programs. The report highlights four programs, but today I'll focus on trucks.

We focused on the trucking industry as a whole in 2018, due to the challenges of achieving compliance with a variety of programs, including the Truck and Bus Regulation, DMV registration requirements, engine technologies, and in-use emission standards.

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AIR POLLUTION SPECIALIST AMORUSO: The Truck and Bus Regulation is the most important regulation related to diesel engines applying to over 1.4 million diesel-powered
vehicles in California. The regulation has significantly reduced emissions of particulate matter and oxides of nitrogen, which negatively impact human health and the environment.

Currently, about 80 percent of California registered vehicles subject to the regulation are compliant, with 80,000 being noncompliant. More than half of those vehicles are owned by small fleets having three or fewer vehicles.

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AIR POLLUTION SPECIALIST AMORUSO: In 2017, we began implementing a streamlined process to address noncompliant vehicles in California.

As of June 24th, 2019, staff issued notices of noncompliance on nearly 35,000 noncompliant vehicles, completed enforcement on over 25,000 vehicles, placed DMV registration holds on more than 19,000 vehicles, collecting a total of $3.8 million in penalties.

Our goal is to complete enforcement on 35,000 vehicles by the end of this year.

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AIR POLLUTION SPECIALIST AMORUSO: Owners must demonstrate compliance of their diesel vehicles to be able to register with the California Department of Motor Vehicles starting January 1st, 2020. This could impact up
to 80,000 vehicles by 2020 and up to 200 -- 200,000
between 2020 and 2023.

CARB is providing $50 million to support the
Truck Loan Assistance Program to help owners finance
compliance. Financial assistance information can be found
on CARB's website and the TruckStop website.

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AIR POLLUTION SPECIALIST AMORUSO: Program staff
is continuing to conduct extensive outreach to ensure
every operator is aware of compliance requirements. This
includes outreach to bilingual audiences, by website,
one-stop events, billboards, radio, and television.
Additionally, messaging on video displays at the DMV and
notices on gas station pumps have been implemented.

In addition, between now and the end of this
year, Enforcement staff is sending targeted warning
letters to vehicle owners facing a compliance requirement
in 2020 that informs them how to comply. Given the
extensive outreach in multiple languages in the last five
years, all owners should understand their compliance
requirements.

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AIR POLLUTION SPECIALIST AMORUSO: Operators are
also responsible for keeping their vehicles and engines
well maintained. This is necessary because malfunctioning
engine and emissions control components can lead to creating high emitting vehicles. CARB studies have shown that a small fraction of trucks are responsible for the vast majority of all emissions from trucks. Modern after-treatment controlled engines are more complex and require training to maintain and repair.

Several years ago, we began distributing Pamphlets to truck operators to educate them about preventative maintenance, which may reduce downtime and operating costs.

Implementation of new car regulations will help further incentivize proper maintenance. Beginning January 2020, we will enforce new lower opacity limits for filter-equipped vehicles and we will implement new inspection procedures that incorporate these new limits in on-board diagnostics. We will also use the STEP process to enforce the periodic smoke inspection program

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AIR POLLUTION SPECIALIST AMORUSO: Another reason engine and emissions control components malfunction is because they are not as durable as they should be. CARB studies show that some makes and models of trucks have higher emissions than we would expect. Our analysis of warranty claims, which is documented in our report, supports the idea that poor durability is a reason for
higher emissions. CARB investigates certification and warranty violations. If staff identifies defective parts or certification violations, we can issue a recall or initiate enforcement action.

Beyond these immediate enforcement efforts, new regulations under development will provide the tools we need to encourage manufacturers, owners, and operators to do their part to minimize emissions from trucks.

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AIR POLLUTION SPECIALIST AMORUSO: Now, I'll discuss the Board's focus in disadvantaged communities, which is done in conjunction with the other boards, departments, and offices of the California Environmental Protection Agency.

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AIR POLLUTION SPECIALIST AMORUSO: We are committed to reducing emissions in communities within California that are adversely impacted by poor air quality and pollution. Our efforts include increasing enforcement in these affected areas. In 2018, staff conducted 60 percent of its more than 28,000 inspections in or near disadvantaged communities.

In response to transportation refrigeration unit, or TRU, complaints, we conducted more than 700 inspections in targeted areas and issued over 200 citations.
Enforcement at ports included more than 1,000 inspections, resulting in 18 notices of violation to companies for multiple violations of requirements.

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AIR POLLUTION SPECIALIST AMORUSO: We participated in two environmental justice initiatives, one in Imperial Valley other in South Stockton. Staff worked directly with the community members to gather a better understanding of their enforcement needs and discuss potential violators. We then increased frequency of inspections within the designated area to address these concerns.

We are also developing programs to reduce exposure in communities most impacted by air pollution in response to Assembly Bill 617, which established the Community Air Protection Program. CARB and air district staff are partnering to develop an enforcement plan to address specific community issues while building on current enforcement efforts.

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AIR POLLUTION SPECIALIST AMORUSO: In this next portion, I'll review the purpose of Supplemental Environmental Projects, or SEPs; discuss current funding of projects; highlight two specific projects; and discuss the implementation of the new SEP policy.
AIR POLLUTION SPECIALIST AMORUSO: During the settlement process for a violation of environmental regulations, violators are given the opportunity to fund a project that complies with CARB's SEP Policy. A SEP is a project not otherwise required by law that positively impacts air quality by reducing emissions, reducing exposure to air pollution, or preventing future air quality violations. SEPs improve public health, reduce pollution, increase environmental compliance, and bring public awareness to disadvantaged communities most burdened by environmental harm.

AIR POLLUTION SPECIALIST AMORUSO: Since transitioning to the new program, 41 SEPs are listed eligible, 22 are fully funded, and 3 are partially funded. Last year, 20 violators funded 18 SEPs totaling almost $2.2 million.

Prior to implementing the new program in 2017, we offered three long-standing SEPs. CARB hired a consultant to audit these projects. The audit found expenses were consistent with program objectives and funds were used appropriately, but there was no consistent system at CARB to hold those recipients accountable. Many audit recommendations had already been addressed when the new
program launched.

In addition, we have developed a new tracking system to hold recipients to a higher standard, ensure funding is spent appropriately, and establish contractual and tracking procedures to ensure SEP recipients meet requirements. These new requirements are being implemented now. The audit, and the results, and the steps we're taking to implement recommendations are described on our website.

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AIR POLLUTION SPECIALIST AMORUSO: The BreathMobile is SEP which partners with local community groups, visits health fairs and schools, and offers health screen and educational resources on indoor and outdoor air quality. It is a free mobile asthma clinic staffed by in-house and per diem medical specialists that visits pre-school and K through 12 aged children, ranging from three months to 18 years old, who are diagnosed with asthma.

This multi-year project is using over $500,000 in SEP funds to increase BreathMobile services in Contra Costa County and Alameda County, including visit -- visits to Cherryland Elementary School in Hayward and 10 additional schools.

Health and education services provided by the
BreathMobile help reduce the number of medical visits and school absences. The BreathMobile has seen a total of 283 patients.

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AIR POLLUTION SPECIALIST AMORUSO: Another SEP we are highlighting today is the installation of air filtration systems in schools. The South Coast Air Quality Management District is implementing a SEP that provides funding for the installation and maintenance of high-performance air filtration systems in schools within communities most impacted by toxic air contaminants.

They partner with IQAir for installation of air filtration systems and work with the local community and school district on mitigating the impacts of air pollution. Placer County Air Pollution Control District has also implemented a similar project.

Air filtration systems in schools are designed to remove a range of particulate matter, diesel exhaust toxics, and wood smoke. Health studies have determined that fine and ultrafine particulate matter, including diesel particulate matter present the greatest air pollution health risk to sensitive receptors in disadvantaged communities.

By September 2018, air filtration systems were installed at 76 schools in South Coast and four schools in
Placer County.

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AIR POLLUTION SPECIALIST AMORUSO: Finally, I will present a high level review of our programs and share our plans for 2019.

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AIR POLLUTION SPECIALIST AMORUSO: The Board's Enforcement Policy defines CARB's enforcement process. Staff updated the Enforcement Policy in 2017 in an effort to provide additional transparency to our Enforcement Program. Staff is continuing to implement the updated Enforcement Policy pertaining to minor violations, voluntary disclosure, and updating the range of per unit penalties to provide additional transparency and deterrence.

Appendix J of the 2018 Annual Enforcement Report displays a table showing the minimum and maximum penalties assessed between January 2014 and December 2018 for each regulation or program.

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AIR POLLUTION SPECIALIST AMORUSO: Minor violations generally have little to no impact to the functioning of the regulatory program and no emissions impacts. To be eligible, the responsible party provides complete cooperation and resolves the problem quickly. In
2018, staff focused on the application of its minor violation program in the Truck and Bus Regulation and the Stationary Equipment Refrigerant Management Program. Staff identified over 4,000 trucks that were compliant with the Truck and Bus Regulation, but failed to report to CARB as required. Staff waived penalties in each of these cases as the responsible party was essentially compliant with all aspects of the regulation except reporting.

Staff resolved over 100 Refrigerant Management Program cases without penalties, where the facility had met technology requirements but failed to report its compliance status.

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AIR POLLUTION SPECIALIST AMORUSO: With the implementation of the updated Enforcement Policy, staff has reduced penalties for violations which are voluntarily disclosed. In 2018, staff resolved eight voluntarily disclosed cases. The actual percent reduction for voluntarily disclosed cases varied from 25 to 88 percent, which is generally consistent with our policy.

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AIR POLLUTION SPECIALIST AMORUSO: We are expanding our Stationary Source Enforcement Program, including increasing enforcement of the Landfill Methane
Regulation that reduces methane emissions from municipal solid waste landfills. We are working with districts to enforce this regulation.

We're also initiating new programs to review district activities, policies, and regulations to ensure they meet applicable State and federal requirements and to determine potential areas for improvement.

Currently, we are working with the California Air Pollution Control Officers Association to update our training plan to address specific enforcement challenges identified by CARB staff and the air districts.

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AIR POLLUTION SPECIALIST AMORUSO: Later this year, we will be transitioning from the STEP process to more field enforcement. Our efforts will focus on trucks registered in other states to provide a more level playing field relative to California trucks subject to registration requirements and in disadvantaged communities looking for high emitting and/or potentially tampered vehicles.

To support these efforts, CARB staff developed and will begin field use of the Portable Emissions Acquisition System, or PEAQs, pictured here. We will deploy a similar unit at the California Department of Food Agriculture facility in Needles as part of a new
enforcement process focused on out-of-state vehicles. We will also focus additional enforcement on TRUs and diesel-fueled off-road equipment.

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AIR POLLUTION SPECIALIST AMORUSO: In order to help the general public better understand CARB's enforcement efforts and to facilitate the development of community emissions reductions program, staff developed the Enforcement Data Visualization System to provide an intuitive way to visualize CARB's enforcement activities across the State, including field inspections and case settlements on an interactive interface.

This interactive tool provides results and locations of every inspection over the past three years displayed at a detailed spatial resolution and is now available to the public on our website.

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AIR POLLUTION SPECIALIST AMORUSO: In summary, in 2018, we resolved the FCA case in which Fiat Chrysler recalled and fixed over 13,000 vehicles equipped with defeat devices and paid over $78 million in penalties in mitigation to California.

We conducted over 28,000 vehicle, marine, equipment, and consumer product inspections with 60 percent in disadvantaged communities.
We addressed over 11,000 complaints. And we assessed $13 million in penalties including 93 case settlements, about 1,500 STEP settlements, and more than 1,700 field citations.

We provided training to about 5,000 students and allocated $1.5 million to SEPs benefiting disadvantaged communities.

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AIR POLLUTION SPECIALIST AMORUSO: CARB enforcement programs are a crucial component of our effort -- efforts to protect public health and the environment. We are embedding a culture of continuous improvement. We measure our programs and then adjust for improved efficiency and effectiveness.

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AIR POLLUTION SPECIALIST AMORUSO: The 2018 Annual Enforcement Report is available on our website at the location shown here.

Thank you. We would be happy to answer any questions you may have at this time.

CHAIR NICHOLS: Thank you.

I think we should hear from those who've come to speak about this issue. We have three witnesses. Lisa McGhee who wins the endurance award for the day --

(Laughter.)
CHAIR NICHOLS: -- followed by Alex Solis, and

Sean Edgar.

MS. McGHEE: Good afternoon. Lisa McGhee with
San Diego Airport Parking Company.

ZEVs have no tailpipe emissions and thereby no
enforcement or penalties exist for this advanced
technology. The warranties for heavy-duty emission
vehicles range from 150,000 miles to 400,000 miles for
expensive components. Hybrid light-duty vehicles get
150,000 mile warranty. ZEVs have no requirements or
benchmarks. And the new ZEV defects or recalls can't go
through the federal process, as a dropdown or recall must
be repeating in volume and most of the new ZEV OEMs do not
exist on the VMF -- the VM VSSA as a listed OEM.

It is not just about the components. It is about
the integration, lack of experience, and oversight.
Proprietary vehicles should have enforcement when
malfunctions are not responded to. Legal issues and
disputes should be allowed to create a burden -- should
not be allowed to create a burden on the purchaser to be
out of state. All disputes for ZEVs should required to be
handled locally and in this state.

SDAP continues to remind this Board there is no
lemon law for commercially registered vehicles. The ZEV
OEM market is primarily made up of small OEMs, and are
receiving credits for each vehicle produced, and these credits have monetary volume.

Please create an enforcement provision for ZEV technology that is sold in California. This aligns with all another technologies and this procedure should be the standard.

Thank you.

CHAIR NICHOLS: Thank you.

MR. SOLIS: Hello. Good afternoon. My name is Alex Solis. I'm here on behalf of Comite Civico Del Valle.

Good afternoon, Chair Nichols, members of the Board. On behalf of Comite Civico Del Valle, we thank the Board, and Executive Officer Richard Corey, and CARB staff for taking our concerns into serious consideration and correcting the course. We also thank Todd Sax and his Enforcement team for their diligence in reaching out to disadvantaged communities throughout California to raise awareness about the SEP program and on this new direction.

We are satisfied with the outcome of the audit and the new direction which is more aligned with AB 1071. In closing, Comite Civico would also respectfully ask CARB to commit to redistributing more penalty dollars to disadvantaged communities.

Thank you.
CHAIR NICHOLS: Okay. Thank you.

MR. EDGAR: Good afternoon, Chair Nichols and Board members. Last but not least. Pleased to be in front of you this afternoon. Sean Edgar. I'm the Director of Clean Fleets.

Just a few quick words relating to the Enforcement Division report and then talk about a few challenges going forward. I'd characterize a visit to the Enforcement Division as kind of like going to the dentist. It's something that you don't really look forward to. I've had that occasion to be sitting across the table on several occasions this past year. Dr. Sax and his team are thorough I think in looking at documentation for some of the fleets that we assist. It's been a challenging experience on occasion, but ultimately it's also helped to -- help course correction where 100 percent compliance isn't there. So I'll say thank you for that.

There are key future programs like AB 617 implementation that the prior speaker spoke about or the EV charging -- the charge -- the discussion you had before this item relative to how complicated the infrastructure side will be for advanced clean local trucks. And I just want to touch on two program challenges that Enforcement Division, over the next year or two, will need to deal with that we in industry are looking at.
First, on the PSAP regulatory changes, the smog check for heavy-duty trucks, the new opacity standard goes into effect next week. It's nice the program staff sent out an email earlier this week to affected industry that there are a few key programs challenges there, specifically in the areas of equipment in order for industry to implement the test. So there's a new calibration standard or there should be a new calibration standard to have key equipment be able to reflect what the new standard is.

In talking with program staff, I have not seen a lot of enthusiasm for them to inform the manufacturers of the equipment that is required to perform the test, that they need to make not only durable equipment but they need to make changes to the equipment to make sure that the operators of that equipment get accurate results.

So that's one item that being involved in smog check for over 20 years, it's a key deficit and going to become a future problem for enforceability.

In the time I have left, I'll just reference the advanced clean local trucks effort briefly and I'll indicate that in my 20 years before the Board it's been a team sport, so you all at staff level and program staff are working to engage industry, but key industries are nervous, especially the refuse industry that we do a lot...
of work with.

Last October, you fixed the HVIP issue. So thank you for that. You recognized that the refuse industry has been an A team in implementing clean vehicles. And when it comes to hundreds of million of dollars in investment in natural gas technology, a little bit nervous about what the forthcoming ZEB fleet reporting and purchase mandate will be.

So I'll just wrap-up by saying, dentistry sometimes isn't fun. Staff has been firm, but relatively fair where documentation is there. And these key program challenges, AB 618 -- 617, ACLT, advanced clean local trucks, and the PSIP rollout are going to be key things that we're watching with the idea that making sure industry has good information and good ability to hit the future targets.

Thank you.

CHAIR NICHOLS: Thank you.

Any comments from Board members down this item? It's a good report. It's comprehensive. It's helpful. I'm glad we're doing it.

I don't think I have any additional concerns or comments at this point. I don't see any. So just thank you. Keep doing it. Appreciate that you've really turned this into, I think, a much more communicative document
than it used to be.

Yes.

BOARD MEMBER DE LA TORRE: Thank you. Yes.

Great work. One thing that, when I was being briefed, we talked about was these collaborations with other jurisdictions, cities, counties on regulations that we have that can be converted into ordinances by them, much like our truck idling ordinance --

CHAIR NICHOLS: Right.

BOARD MEMBER DE LA TORRE: -- to identify other opportunities like that that we can work with local jurisdictions to magnify our Enforcement team up and down the state. So whenever -- you know, no urgency on that. But whenever you can identify those opportunities, those regs that can be used in that way, where we can share maybe some of the citation revenues with the local jurisdiction, just to have more eyes and ears up and down the state.

Thank you.

CHAIR NICHOLS: That's great.

Yes.

BOARD MEMBER SHERRIFFS: And I just -- I want to thank you all for the work that you do and the challenge of being enforcement. "Hi. I'm from enforcement. I'm here to help you".
(Laughter.)

BOARD MEMBER SHERIFFS: But it -- so, well, you help us absolutely. And you do help the compliant people to level that playing field and be sure everybody is coming up to snuff. And none of these regulations would work if we couldn't be assured that things are performing as we -- as the models would imply. So it really is critical.

One question that comes up over and over in terms of enforcement is public involvement and getting the public involved and the comments about getting other agencies working together. I think obviously CAPCOA would be an important partner in this, thinking about -- you know, as we think about trucking, smoking trucks, you know, that -- that five percent who fail the opacity test or 95 percent of the black carbon that's coming out of trucks at least. So it's a really important and critical piece to catch. And I think the public probably can play an important role in that.

But I think air districts have certain ambivalence about getting the public involved and being sure that they're closing the loop in terms of that it's reported and how do you share with the public that this is taken seriously and something has been accomplished.

So it's complicated and I think there are
different solutions for different districts. So CAPCOA may be a very productive place to think about that issue.

BOARD MEMBER TAKVORIAN: So one last thing. Thank you also. It's a tough job and I'm glad you're doing it. So thank you for that. And I also wanted to give a shout-out. After our briefing, you sent me the visualization tool, which I played around with, and I know you featured it on one of the slides today. I just want to encourage everyone to take a look at it. It's really an amazing tool and one that I think sets a real good template for what we can do in the future to display all kinds of information, but it's really, really helpful.

And particularly because it's at the community level, I wanted to give a congratulations to you for that. It's really easy. If I could use it, then you've got it. So I can be your guinea pig on that any time you want to test stuff, but it really works well.

Thank you.

CHAIR NICHOLS: Okay. Thank you.

We have -- I think we're concluded with this item.

I do think we have two requests to speak at the open comment period. Thank you all very much and appreciate the good work.

It really is at the heart and soul of the program
to have a good Enforcement Program. And, as you can see, it feeds back into the regulatory process, because they spot weaknesses in the regulations when they're trying to enforce them.

All right. Let's hear from our two open comment speakers. First Neal Desai from the National Parks and Conservation Association and then Gary Hughes.

Hi.

MR. DESAI: Good afternoon, Chair Nichols and the Board. My name is Neal Desai with the National Parks Conservation Association. NPCA has been advocating for the protection of our National Parks for the past 100 years. And I'm here to provide comment on the status of the San Joaquin Valley PM2.5 Plan. And thank you for this opportunity to comment.

NPCA is interested in this issue, not only because of the impacts to the National Parks in the region, such as Yosemite, and Sequoia, and Kings Canyon, and all of our public lands in that area, but also because of the human health impacts to our members and the communities that we live and work in.

So at the time when the PM2.5 plan passed by this Board in January, advocates cautioned that the plan relied too far heavily on emission reductions from roughly $5 billion worth of State funding for incentive-based
programs and not enough on regulatory measures. And I'm sorry to say that I think our concerns have -- appear to be confirmed now based on the budget that has just passed through the Legislature, which falls far short of the $500 million that -- for valley-specific incentives that the CARB staff identified as being necessary. So not just sort of could be nice, but necessary for 2019.

And then we all know about the challenges with funding and receiving funding and -- but that's precisely why we had concerns about the format.

This funding shortfall occurred despite lobbying efforts by both industry, stakeholders, and clean air advocates like MPCA asking legislators to fully fund programs, including the FARMER incentive. With the incentive funding needs outlined in the plan set to go to -- up to over $800 million for each of the next five years, it's clear to us that the CARB and the valley air district need to move beyond this over reliance on this funding mechanism, which have failed to materialize, as many have pointed to, and come up with a viable plan B to reach the attainment by the 2024 and 2025 deadlines.

Throughout the valley's PM2.5 rulemaking, we proposed a number of regulatory actions that should be taken to close this gap. These strategies include review of the largest stationary source polluters, reviewing the
district's agricultural burning program, assessing ammonia reduction programs, reducing potential NOx emissions from soil and fertilizers, accelerating mobile source measures, like the Advanced Clean Trucks Rule.

So these are just a handful of strategies that we hope you will look at, because the staff is coming back in September and we already know where things are headed. So let's get to work this and we would love to work with you on it.

Thank you for this opportunity.

CHAIR NICHOLS: Thank you.

Mr. Karperos, do you have any comment on this? I know this is just a comment item and no action is called for, but you want to respond in terms of the timing.

DEPUTY EXECUTIVE OFFICER KARPEROS: Right. As the commenter mentioned, we will be back in September with a report to you on implementation of the San Joaquin Valley plan. That was identified as a step, because of the reliance on incentives, plus all the regulatory actions that fall to this Board and to the local board.

Specifically, on the incentive issue, after the budget came out, ARB staff was meeting with the district staff on trying to figure out how you could reprogram the funds, and what other pots of money might be available. So there is sort of already in place a process to assess
and how to go forward now that we know what the budget is.

CHAIR NICHOLS: Well, I think it certainly behooves us to move quickly and not wait around, so keep us posted.

Okay. Gary Hughes.

MR. HUGHES: All right. Thank you, Chair Nichols, members of the Board. My name is Gary Hughes.

THE COURT REPORTER: Turn the mic on.

MR. HUGHES: Thank you, Chair Nichols and for the direction here, members of the Board.

My name is Gary Hughes. And I'm currently working with a small international organization called Biofuel Watch. And I appreciate this moment in the open session to draw attention to a letter that our organization with 20 or more groups sent to Chair Nichols and the Governor last week regarding the California Tropical Forest Standard a climate impacts from aviation.

Aviation is long recognized as a severe climate polluter and the problem is only getting worse. As a matter of fact according to the ARB emissions inventory, international aviation emissions have spiked dramatically, rising by nearly 40 percent to climb to an all time record eye. This reality cannot be ignored.

Even though emissions from international aviation are outside the regulatory scope of California's State
authorities, great care must be taken in how this climate threat is addressed to avoid unleashing a chain of unintended consequences that will threaten communities and the climate.

The California Tropical Forest Standard is a tropical forest based carbon offset protocol that the Air Resources Board has explicitly proposed to endorse for use with the International Civil Aviation Organization Carbon Offsetting and Reduction Scheme for International Aviation.

The two key mechanisms of CORSIA are carbon offsetting and alternative aviation biofuels. The proposal for global aviation to rely on offsetting to address climate impacts from future emissions growth is highly controversial.

Another major concern with CORSIA is the focus on alternative aviation fuels, primarily aviation biofuels. Research shows that palm oil is the only economically and technically feasible feedstock for large-scale aviation biofuels, based on existing technologies.

Given the extremely weak standards proposed for CORSIA, the scheme is highly likely to allow palm oil derived biofuels to be characterized as sustainable aviation biofuels, thus creating a large new global demand for palm oil.
The Air Resources Board, by considering endorsing an offsets protocol for use in CORSIA and thus putting a stamp of approval on CORSIA itself, could be unwittingly unleashing forces that instigate a spike in demand for palm oil derived biofuels.

So I ask for your consideration of this letter and the information that we share with this.

(Thereupon an overhead presentation was presented as follows.)

MR. HUGHES: In the nature of the open session, just to really rapidly draw attention to what's happening in California's forests, because I know that the Air Resources Board and other agencies have made, you know, a real priority of forests, but right now on Rainbow Ridge -- and I hope everyone remembers that name -- that place name of Rainbow Ridge. This is a place where for several decades there's been a lot of activist focus on protecting the old forest on Rainbow Ridge.

This is property that belongs to the Humboldt Redwood Company. And it's being logged right now. There have been arrests. Kids have been arrested, but as well there was an elders protecting elders action.

And so I just ask folks to take a look at what's happening in California's forests, and let's make a priority of protecting California's forests. Thank you
for your time today.
   And really amazing stamina that you all can make
it through this day.
   Thank you.
   (Laughter.)

CHAIR NICHOLS: Thank you. Appreciate that. And
I do have your letter and have read it. And it's been
circulated. And I think before any other actions are
taken on that, others will have given a thorough -- a
thorough look as well. So thank you.

I believe that is it all the business to come
before the Board for today -- for this month actually.

I do want to do one thing which I omitted to do
earlier, and that is to introduce our newest member of the
executive team and that's our legislative representative
who's sitting in the audience there. This is David Garcia
who was escorting Senator Corbett earlier. And he has
joined us from the staff of the Senate. And he was a
former science fellow in the Legislature. One of the --
the second one that we've hired. The first one was
Ryan -- what was his name? Oh, yeah, Ryan McCarthy, a
wonder --

(Laughter.)

CHAIR NICHOLS: -- and wonderful staff member.
And we're just delighted to welcome him. So
stand up and say hello. Welcome.

You'll be seeing more of him. Thanks.

(Applause.)

CHAIR NICHOLS: Okay. I think that's it. We can be adjourned.

(Thereupon the Air Resources Board meeting adjourned at 2:55 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 4th day of July, 2019.

[Signature]

JAMES F. PETERS, CSR
Certified Shorthand Reporter
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