MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

AUDITORIUM

21865 E. COPLEY DRIVE

DIAMOND BAR, CALIFORNIA 91765

THURSDAY, OCTOBER 23, 2014

9:28 A.M.

TIFFANY C. KRAFT, CSR
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LICENSE NUMBER 12277

APPEARANCES

BOARD MEMBERS

Ms. Mary Nichols, Chairperson

Ms. Sandra Berg

Mr. Hector De La Torre

Mr. John Eisenhut

Supervisor John Gioia

Mayor Judy Mitchell

Mrs. Barbara Riordan

Supervisor Ron Roberts

Supervisor Phil Serna

Professor Daniel Sperling

Dr. Alex Sherriffs

STAFF

Mr. Richard Corey, Executive Director

Dr. Alberto Ayala, Deputy Executive Officer

Ms. Edie Chang, Deputy Executive Officer

Ms. Lynn Terry, Deputy Executive Officer

Ms. Ellen Peter, Chief Counsel

Ms. La Ronda Bowen, Ombudsman

Ms. Belina Chen, Air Pollution Specialist, ECARS

APPEARANCES (CONTINUED)

STAFF

Ms. Leslie Goodbody, Air Resources Engineer, Zero Emission Vehicle Section, ECARS

Ms. Annette Hebert, Division Chief, ECARS

Mr. Mark Williams, Air Pollution Specialist, ECARS

Ms. Tabetha Willmon, Climate Action and Research Planning Section, Research Division

ALSO PRESENT

Mr. Dan Adsit, Ford

Mayor Rusty Bailey, City of Riverside

Mr. Davis Barker, Subaru

Mr. William Barrett, American Lung Association

Mr. Robert Bienenfeld, Honda

Mr. Clinton Blair, Jaguar Land Rover

Mr. Vaughn Burns, Crysler Group

Mr. Eric Cahill, UC Davis

Mr. Barney Carlson, Idaho National Laboratory

Mr. David Cash, Massachusetts

Mr. Darrell Clarke, Sierra Club

Mr. Steven Douglas, Auto Alliance Driving Innocations

APPEARANCES (CONTINUED)

ALSO PRESENT

Ms. Anne Gobin, Connecticut

Mr. Michael Hartrick, Chrysler

Ms. Bonnie Holmes-Gen, American Lung Association

Ms. Ashley Horvat, Oregon

Mrs. Azita Khalili, BMW

Ms. Michelle Kinman, Environment California

Ms. Kathy Kinsey, Maryland

Ms. Christine Kirby, Massachusetts

Ms. Jamie Knapp, California Clean Cars Campaign

Mr. Joseph Kubsh, MECA

Mr. Don MacAllister, Fast Swap Technologies, Inc.

Mr. Ken Morgan, Tesla Motors

Mr. Simon Mui, NRDC

Mr. Mike Lord, Toyota

Mr. Joe Lyou, Coalition for Clean Air

Mr. David Patterson, Mitsubishi

Ms. Julia Rege, Global Automakers

Mr. David Reichmuth, Union of Concerned Scientists

Mr. Daniel Ryan, Mazda

Mr. Matt Solomon, ZEV MOU States

Mayor Pro Tem Spagnolo, City of Rancho Cucamonga

Mr. Barry Wallerstein, SCAQMD

Ms. Katherine Yehl, Volvo Cars

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PROCEEDINGS

ACTING CHAIRPERSON RIORDAN: We are going to start. And our Chair is in transit, which is typical on southern California freeways. In the interest of time and because of our largeness of agenda, I think it is important that we do start on time. So I'm hoping my colleagues will join me soon so that we have a record.

The October 23rd, 2014, meeting of the Air Resources Board will come to order. And as we begin each and every one of our meetings with the Pledge, I would invite you to join me with the Pledge to our flag.

Would you rise, please?

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

ACTING CHAIRPERSON RIORDAN: Thank you. Let me ask Clerk to the Board please call the roll.

BOARD CLERK JENSEN: Mr. Balmes?

Ms. Berg?

BOARD MEMBER BERG: Here.

BOARD CLERK JENSEN: Mr. De La Torre?

Mr. Eisenhut?

BOARD MEMBER EISENHUT: Yes.

BOARD CLERK JENSEN: Supervisor Gioia?

BOARD MEMBER GIOIA: Here.

BOARD CLERK JENSEN: Mayor Mitchell?

BOARD MEMBER MITCHELL: Here.
BOARD CLERK JENSEN: Mrs. Riordan?
BOARD MEMBER RIORDAN: Here.
BOARD CLERK JENSEN: Supervisor Roberts?
BOARD MEMBER ROBERTS: Here.
BOARD CLERK JENSEN: Supervisor Serna?
BOARD MEMBER SERNA: Here.
BOARD CLERK JENSEN: Dr. Sherriffs?
BOARD MEMBER SHERRIFFS: Here.
BOARD CLERK JENSEN: Professor Sperling?
BOARD MEMBER SPERLING: Here.
BOARD CLERK JENSEN: Chairman Nichols?
ACTING CHAIRPERSON RIORDAN: Thank you, Madam Clerk.

First, before I do the remarks, I just want to thank the South Coast Air Quality Management District for hosting us today. It is always a pleasure to be in this beautiful facility. And we thank you for your accommodations. It's always nice to be back in Diamond Bar.

I do have a few announcements. These are housekeeping things. Anyone who wishes to testify should fill out a request to speak card available in the lobby outside of this auditorium. And please turn it into a Board assistant or Clerk to the Board prior to the

commencement of the item.

Also, speakers need to be aware we do have a three-minute time limit on public presentation. Please state your first and last name when you come to the podium. And there are -- let me just ask Paul, are you going to operate both podiums today or just one? I think both of them would work just fine. So for those who it's more convenient, either there is one there or there's one there.

And if you come forward, we have your written testimony if you have provided written testimony. And so if you could put in your own words, I think that is the best for the Board to listen to and then we will make your written testimony part of the record.

So if you would just be mindful of the three minute rule, you'll be given -- it's very easy here. Fortunately, Paul, our timer, will take care of that for us. And I would like you to adhere to that again because of the size of our agenda and the length of our agenda.

For safety reasons, please note the exit signs. And in case of an emergency, if you exit, there's two in the back and one and one here.

So if you are following our agenda, you will note that we are going to deal with the update to the Board on the Advanced Clean Cars Program midterm review. This is

the first item on today's agenda, and it's really a status report.

Those of you who remember will recall that on January of 2012, the Advanced Clean Cars Program laid out the foundation for sustainability, personal ability in California. It does this by setting some ambitious but achievable reductions in criteria pollutants in greenhouse gas emissions from passenger vehicles through model year 2025.

I'm going to ask staff and Mr. Richard Corey, our Executive Officer, to begin the program.

DEPUTY EXECUTIVE OFFICER COREY: Yes, thank you Chairman. And good morning.

Staff will provide an update on the progress we've made on the Advanced Clean Cars Program.

As you know, in addition to greenhouse gas standards, the Advanced Clean Cars Program includes the Low Emission Vehicle III, or LEV III Program, for criteria pollutants, as well the Zero Emission, or ZEV program.

Because the LEV III greenhouse gas requirements were developed through a coordinated effort with the federal government, California agreed to participate in the midterm review with U.S. EPA and the National Highway Traffic Safety Administration, NHTSA, to evaluate the appropriateness of the standard 2022 through 2025. The

staff has committed to provide the Board with yearly updates on progress made on the midterm review, which today is one of those updates.

Work is underway to support the midterm review of the federal greenhouse gas standards. And staff will provide an update on this work as well as the compliance staff now that manufacturers have begun to comply with the early years of the federal greenhouse gas light-duty fleet average standards.

Additionally, California has seen record ZEV and plug-in hybrids sales. In fact, it's very exciting numbers. In August of this year, the 100,000th ZEV was sold in California, where these account for the nation's cleanest vehicles.

Belinda Chen of the Emissions Compliance, Automotive Regulations and Science Division will now give the staff presentation. Belinda.

(Thereupon an overhead presentation was presented as follows.)

AIR POLLUTION SPECIALIST CHEN: Thank you, Mr. Corey. Good morning, members of the Board.

Today, I will present an update of the Advanced Clean Cars Program and midterm review efforts.

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AIR POLLUTION SPECIALIST CHEN: California

continues to be faced with significant climate change and air quality challenges. Near- and long-term emission targets have been established to ensure we are on track to meet federal air quality standards and global climate stability. In addition to these existing targets, as discussed in last year's scoping plan update, a midterm review of staff's greenhouse gas emission reduction target is expected, as well as a new ozone standard.

In 2012, the Board approved the latest round of fleet average standards for all new passenger vehicles. The Low Emission Vehicle Program, or LEV III, is intended to reduce criteria pollutant emission to help attainment with 2023 and 2032 air quality requirements, as well as contribute to reductions needed for the transportation sector to meet the 2020 greenhouse gas emission target.

However, as last year's Scoping Plan update also indicated, future standards will likely be needed to keep California on track to meet both the mid- and long-term targets.

Projections for meeting long-term climate and air quality goals continue to show the need for full electrification of new light-duty vehicle sales by 2050. The zero emission vehicle, or ZEV, regulation was amended in 2012 to continue forcing the advanced technology that will need to enter the marketplace today if we are going

to transform the fleet by 2050.

The LEV III and ZEV programs together comprise California's Advanced Clean Cars Program.

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AIR POLLUTION SPECIALIST CHEN: Today, most of the items before you will be related to the Advanced Clean Cars Program. Earlier this year, the US Environmental Protection Agency, or EPA, adopted Tier III standards, which is a national fleet average standard for light-duty criteria pollutant emissions.

During the second item you will hear today, staff will present its recommendations on aligning LEV III with these federal standards where appropriate.

In 2013, the Board directed staff to review the definition and treatment of intermediate volume manufactures in the context of the ZEV regulation. Later today, you'll hear staff's proposal on this issue.

Lastly, when the Board approved this multi pronged approach to passenger vehicle emission reductions, they asked staff to review all of these components. My presentation will update you on the status of this midterm review, with the goal of returning with a formal review of the Advanced Clean Cars Program in 2016. This review includes three specific elements: A review of the particulate matter standard; a review of the greenhouse

gas standards in collaboration with U.S. EPA, and the National Highway Traffic and Safety Administration, or NHTSA; and thirdly a review of the ZEV regulation.

To avoid any conclusion on terminology or maybe to add to it, if you hear federal agencies refer to a midterm review, they are talking solely about this green wedge of reviewing the greenhouse gas standards after model year 2022. But when we, ARB staff, refer to California's midterm review, we are talking about a review of all three components of the program.

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AIR POLLUTION SPECIALIST CHEN: Today's presentation on the midterm review will provide a brief update on the status of our evaluation of particulate matter, or PM, measurement feasibility, the status of the greenhouse gas review with our federal partners, and an update of the ZEV market and ZEV regulation review.

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AIR POLLUTION SPECIALIST CHEN: Starting with PM, the Advanced Clean Cars Program set a very stringent one milligram per mile standard beginning in model year 2025. But given vehicle manufacturers' concerns about reliably measuring at these low levels, the Board directed staff to come back in 2015 with an assessment on measurement feasibility. And to address concerns about the technical

feasibility of simultaneously meeting these low PM levels while complying with increasingly stringent greenhouse gas standards, the Board also directed staff to reevaluate whether future cars can, indeed, meet this tight standard, potentially on an accelerated time line.

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AIR POLLUTION SPECIALIST CHEN: To date, we've been focused on this first step of confirming measurement capability. The numerous test programs we've worked on internally in our Haagen-Schmit laboratory and with our federal and industry partners are showing we can, indeed, reliably measure PM mass at these low levels.

We are looking at all sources of variability and uncertainty and are feeling very confident in our findings that only minor refinements to the existing measurement methods are needed. And along the way, we've been evaluating several alternative measurement methods and metrics, such as particulate number, both to further our knowledge in those areas and in case the traditional mass measurement method proved unreliable.

We will continue with our testing and outreach to share our lessons learned with stakeholders through publications in industry journals and technical gatherings. And we will come back to the Board next year to report our findings to you, including what we have

learned on alternative methods.

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AIR POLLUTION SPECIALIST CHEN: Onto the greenhouse gas portion of the review, California committed to continuing one national program for greenhouse gas standards for passenger cars and light trucks. Current trends show that the new vehicle fleet is on track to meet annual reductions in the greenhouse gas emissions. However, when the Board approved these standards, they also directed us to collaborate with U.S. EPA and NHTSA on a joint midterm review on the appropriateness of the standards after model year 2022.

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AIR POLLUTION SPECIALIST CHEN: In this regard, we have been working closely with these federal partners as well as the US Department of Energy on a variety of topics. To improve projections on the effectiveness of emission reduction technologies, EPA continues to test and benchmark advanced engines and drive trains. This technical work is supplemented with vehicle and component tear down analyses to refine cost assumptions as well as ongoing research to understand the potential for light weighting and other load reduction technologies to contribute to greenhouse gas reductions.

Consumer acceptance of such technologies in

comparison to projected vehicle price increases also remains an area of focus.

Finally, NHTSA must ensure that the technologies deployed to meet the standards do not compromise vehicle safety and continue to analyze attributes of new vehicles.

Work is ongoing in all of these areas. We will provide the Board with another update next year and then we will present our full review in 2016.

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AIR POLLUTION SPECIALIST CHEN: Moving to the ZEV component of the midterm review, the 2012 ZEV amendments sharply increased the requirement for ZEVs and plug-in hybrids beginning in model year 2018 until reaching a combined total of roughly 15 percent of new vehicle sales by model year 2025.

This target was subsequently reinforced by Governor Brown's Executive Order for 1.5 million ZEVs by 2025, along with supporting infrastructure. At the time these amendments were approved, the Board directed staff to return in 2016 with a review of the ZEV regulation and an update on how plug-in hybrids are selling relative to pure ZEVs, as well as a report on the usage and charging behavior of these vehicles.

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AIR POLLUTION SPECIALIST CHEN: Today's ZEV

market is robust and growing. This plot of data from IHS automotive on new ZEV and plug-in hybrid registrations shows how California's ZEV market has developed. The size of the orange bubble on this figure is scaled to the total number of new ZEV and plug-in hybrids in California in 2011.

Each bubble is positioned horizontally according to the total new vehicles sold that year and positioned vertically to indicate the market share that is ZEV or plug-in hybrids. Remembering that the ZEV regulation requires that our bubble reach 15 percent market share by 2025, we are mostly interested in seeing the bubbles rise.

With time, the ZEV market has expanded with the help of administrative and legislative support for efforts like the Clean Vehicle Rebate Program, the Energy Commission's Investment and Infrastructure, and implementation of the California's ZEV Action Plan stemming from the Governor's Executive Order.

California's bubbles continue to grow and float upwards. We project this year's ZEV market in California to be the largest yet in both volume and market share. This growth in market share is all the more impressive, considering that we are expecting to break records this year for overall new car sales. Meaning, these advanced technology vehicles are increasing in sales faster than

conventional cars.

Of course, California is not the only state with the ZEV requirement. Nine other states have adopted the California ZEV regulation, including many northeast states as well as Oregon and with seven of these states joining California last year in signing a multi-state memorandum of understanding to collaborate to support the ZEV market. The lighter bubbles on the right represent the market in our partner states.

Later today, you'll hear an update from the signatory state representatives directly. So I don't want to spoil the presentation. But I would just note that their follow on action plan was adopted earlier this year to continue forward momentum in building each of their ZEV markets. In their presentation, they'll also provide more detail about ongoing work and recent developments in their states. So be sure to come back later this afternoon.

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AIR POLLUTION SPECIALIST CHEN: Looking more closely at California's ZEV market of plug-in and fuel cell electric vehicles, this graph of data from IHS automotive of California's new vehicle registrations for 2010 through August of 2014 shows how market shares have grow year over year.

The height of the bar shows the portion of

California's new car sales that were plug-in hybrids or ZEVs, similar to the rising of bubbles on the previous slide. The increasing color diversity in the later bars shows how a greater number of manufacturers are now offering ZEV products.

Some examples of these new ZEVs of all shapes and sizes are on display in the ZEV showcase outside, which everyone will have the opportunity to tour before lunch.

Interestingly, the sales to date are roughly evenly split between plug-in hybrids and pure ZEVs. So how do these sales compare to what is required by the ZEV regulations?

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AIR POLLUTION SPECIALIST CHEN: Here are those recent sales trends, and here is a likely compliance scenario for the ZEV regulation. As you can see, today's annual sales levels are exceeding current model year requirements. In fact, today's sales levels for the entire industry are already complying near model year 2018 requirement levels. If we take into amount historical credit banks, auto makers could maintain current sales levels for the next six years and still meet 2020 ZEV requirements. Given the announcements for upcoming plug-in and fuel cell electric, staff believes the schedule review of the full ZEV program in 2016 remains

appropriate in the event that changes are necessary for model year 2020 or beyond.

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AIR POLLUTION SPECIALIST CHEN: In the mean time, staff is taking a multi-faceted approach to ZEV inputs that will feed into both the federal greenhouse gas analysis, as well as the midterm review of the ZEV regulation. Through stakeholder meetings and research on industry trends, staff plans to update technical assumptions for plug-in and fuel cell electric vehicles, as well as cost assumptions for these technologies.

To address the Board's 2012 direction, staff has been reviewing trip and charging data to understand the variations in electric vehicle miles traveled, or EMT, between different types of plug-in hybrid and pure battery vehicles.

To date, we have received and analyzed data from Ford, Honda, and Toyota and anticipate analyzing additional data from other manufactures as it becomes available.

Staff will continue in-house emissions testing of various plug-in hybrids and ARB-sponsored research will be collecting data on household vehicle usage and charging of plug-in vehicles.

Staff has also initiated multiple studies on

consumer attitudes and behaviors to understand how the ZEV market may evolve and will report on those findings at our update next year.

To continue to better understand sales trends in California and partner ZEV states, staff will continue its analysis of various data sources and will likewise report to the Board next year on relevant trends in the data.

Lastly, as you will hear more about later today, staff has begun and will continue to evaluate existing and projected infrastructure in California to support the growing ZEV market. Additionally, California will help support a national assessment of infrastructure for alternative fueled vehicles to incorporated in the federal greenhouse gas midterm review.

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AIR POLLUTION SPECIALIST CHEN: As you can see, extensive work is underway for continual evaluation of all elements of the Advanced Clean Cars Program. We will continue working with our federal partners on the National Greenhouse Gas Program.

Next year, staff will be in front of the Board to provide a full assessment of PM measurement capability. At that time, staff will also provide a status update on its review of the greenhouse gas standard, as well as the ZEV regulation. In 2016, staff plans to present our

comprehensive midterm review and recommend a course of action for the Board. If warranted, any regulatory recommendations would be made in 2017.

This concludes my presentation.

CHAIRPERSON NICHOLS: Thank you very much, Ms. Chen. It's a great overview. As I'm sure you've already indicated, this is an informational item only. So we are not putting a record together here or taking testimony in terms of action. However, we have a number of people who signed up who want to talk to us about this update, and so I think I should go to them next, beginning with our host here, the head of the South Coast Air Quality Management District, Barry Wallerstein.

Good morning. Thank you for letting us into your building.

MR. WALLERSTEIN: It's a pleasure to have you all here. Thank you, Chairman Nichols and members of the Board. I'm just going to take a couple of minutes and end with a couple of PowerPoint slides.

But today is again one of those days to reflect to celebrate and to honor the accomplishment of everyone that has been involved in the wonderful array of vehicles that are going to be in your showcase and others that exist. For me, when I look at it, I get a rush of emotion. I get really a sense of optimism about the

future and our ability to provide all Californians with clean air.

We also have to -- as you go through the next two days, we would say we have to look at the items and see that the items as you approve them are strengthening the overall program, and you know, most importantly, almost sending the right signal to the technology developers and the manufacturers that provide the products and also the consumers. And I say that in recognition of how difficult it is to move forward with the level of controls that are needed here in South Coast, the San Joaquin Valley, Sacramento Valley, and much of the state.

So I want to show the two charts. The first one I know I've shown you before, but it bears repeating.

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MR. WALLERSTEIN: This is as we're working closely with staff in partnership on preparing the 2016 Air Quality Management Plan to go in the SIP and we look at the level of NOx emissions that are projected in 2023, which is our attainment year for the 80 PPP standard, let alone getting down to the 75 or the future standard that your staff mentioned that will be proposed by December 1st, we need a two-thirds reduction in NOx by 2023 beyond all the rules that are on the books today. And it pops up in our view in 2023 for the 75 parts per day standard to a

75 percent reduction.

Not only are there no excess emissions reductions that we can leave on the table, we really have to in essence double or more than double our efforts to date. And again, the types of technologies you're going to hear about show us a potential path. But it isn't just for criteria pollutant emissions. It's also about air toxics as shown in the next slide.

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MR. WALLERSTEIN: The next slide shows the MATES IV study analysis that we ran a couple weeks ago. It shows from the monitoring stations the key drivers of carcinogenic risk in southern California is air.

As you can see, the overwhelming issue is still diesel particulate. Right behind that is Benzene, 1,3 Butadiene, and the carbonyls. If you look at the details of the underlying data, you see for Benzene and 1,3 Butadiene, roughly 80 percent of those emissions come from mobile sources. For the carbonyls, it's about 70 percent.

When I look at that chart and see by today's calculation the risk is down in our community to 418 in a million on average across our community and we started out over 1500 in a million just seven years ago, wow. Phenomenal success.

But ss your Board also knows in your staff's

presentation just a couple months ago, the state of California through OEHHA is about to revise the state's risk assessment methodology, which we will all use at the local level. And in essence, that number of 418 will nearly triple under the new methodology because of new science and information regarding the health impacts of air pollution.

So celebrate, pause, and everything you do we with just ask -- our Board would ask that we keep an eye on the future and giving all Californians clean air to breathe. So thank you very much.

CHAIRPERSON NICHOLS: Thank you. Thanks for reminding us of why we are here.

We'll hear next from Eric Cahill. And then we have a combined presentation by a group of auto companies.

MR. CAHILL: Thank you and good morning.

My name is Eric Cahill. I'm a Ph.D. candidate at UC Davis.

And it's truly impressive the strides that we've made. But before we break out the party hats, we really don't know what the future holds. The curve that we saw earlier could accelerate. We could continue on its current trajectory, which would be phenomenal. Could flatten out. It also could crash. So it's a very delicate thing.

For the past 18 months, I've studied in depth practices of new car dealers who sell plug-in electric vehicles to private customers. Our studies show that retailers and those that support them play an essential role in accelerating plug-in vehicle sales.

But so far, PEV buyers are disappointed with the support they receive from new car dealers. More than four in five, in fact, of rebate applicants report being dissatisfied with the dealer purchase experience.

In our analysis of JD Power data confirms that PEV buyers are much less satisfied with dealers than conventional buyers, especially how little dealers seem too know about incentives, electricity rates, charging infrastructure and other important items for plug-in buyers.

So what can or should be done? So far, government has ignored dealers and focused only on customers via purchase subsidies and automotive companies via the ZEV mandate. Policy needs to focus on dealers as well as customers and automotive manufacturers.

To address this, a two-fold strategy is needed. One that relaxes restrictions that block new approaches for selling plug-ins and another that provides incentives to dealers to sell them.

The first is to relax institutional barriers and

other restrictions to make it difficult to market and sell plug-in vehicles. Tesla, for example, is barred from discussing price or offering test drives in states that have adopted the ZEV program. While dealers clamber for more and better marketing of PEVs to stoke demand, publicly held utilities who have a direct interest in growing PV sales and want to cannot.

The second part of the strategy is the policy to continue and build on incentives that accelerate sales. With proper incentives, dealers will move heaven and earth to sell these vehicles.

One change is to allow dealers to provide rebates upon sale to a customers. Another change is to make PEVs more affordable and expose more people to them by reducing required the ownership period from its current three year period. Another would be to allocate a modest portion of the state rebate to dealer sales people to motivate them to sell these vehicles. Perhaps three to $500 of the up to 2500 dealer rebate would suffice.

Finally, the policy should work with dealers to ensure dealers have simple one-stop online access to customer-specific information. To sum up, retailers are pivotal to achieving the ZEV sales goal.

CHAIRPERSON NICHOLS: Thank you.

BOARD MEMBER GIOIA: Madam Chair, I appreciate

the attention you've drawn to this issue. And I say this after having personally gone through leasing a Leaf about a month ago in the San Francisco Bay Area. And while it's anecdotal, I've talked to other individuals after having gone through the experience, you would think in the San Francisco Bay Area they would be a lot of very educated sales people about selling electric vehicles.

It was clearly an obstacle. And in talking to a few dealers, one of things I heard was, "Only one of our sales people is trained to sell electric vehicles and they're not here."

So when you walk into a show room -- it seems to me we spend a lot of time and effort investing in public education to the consumer, potential consumer. We have incentives. But we do very little at the point of sale or almost nothing at the point of sale, which is really where the deal is closed.

And so I appreciate that this study is ongoing and look forward to hearing more because ultimately you really want to have to buy an electric vehicle to work through the dealership issues.

So if you're there and you're trying to decide one way or another, you're surely not going to receive enough information to make an informed decision I think one way or another.

So, in fact, I mentioned this to a couple of auto manufacturers. And one of them said -- and I won't name which one said -- "Well, the unfortunate fact is many of our sales people don't know a lot about the gasoline vehicles we're selling."

So I guess it's just worse with the electric vehicles and with the turnover of sales people. This is not to be critical of some really great individual sales people at the dealerships who know a lot and it seems like they're in demand and move from dealership to dealership because they're valuable.

So not only did they not know incentives and electricity rates or about the vehicle and helping make informed choices. It seems to me that's really the teachable moment is at the point of sale. We need to think harder about how to deal with that issue. I don't think we'll be successful at the market expansion that we would like to see, unless we have some more effort at that point of sale.

CHAIRPERSON NICHOLS: Thank you, Supervisor Gioia. And I have to say that anyone who has tried to buy an electric vehicle will share a story.

BOARD MEMBER GIOIA: It was painful.

CHAIRPERSON NICHOLS: I don't want to unleash a rupture of these stories.

BOARD MEMBER GIOIA: And Tesla is an exception because their sales people know their vehicle and know how to sell it.

MR. CAHILL: And there are dealer exceptions as well. There's good dealers and less than good dealers.

CHAIRPERSON NICHOLS: Mr. Serna.

BOARD MEMBER SERNA: Thank you, Madam Chair.

I appreciate my colleague Supervisor Gioia has mentioned and share with us his recent experience.

And at the risk of sounding very obvious, it becomes a self-fulfilling prophecy very quickly if you don't have the ability to speak with authority at a dealership to help sell and market the electric vehicles and then have the OEMs later come back and say there is no market for it or it's too difficult. That's one of the traps that we really have to avoid at all costs to get -- make sure that we're not convinced later that all is lost because we forgot about the very important part of education. So I appreciate Supervisor Gioia sharing what he did.

CHAIRPERSON NICHOLS: Thank you. I think we'll move on. Thanks.

Mr. Bienenfeld, you want to introduce your crew here?

MR. BIENENFELD: Thank you.

So we have a group of people, five of us, who are going to share the presentation.

So I'm Robert Bienenfeld with American Honda Motor Company. And Honda, GM, Ford, and Toyota are four of the six large volume manufacturers in California, and we represent about 80 percent of the sales. We all have PZEVs in the market, and we share common interest with respect to regulatory issues.

Those two issues that we'd like to talk about today are that TZEVs deliver more environmental performance than the current regulatory scheme recognized. And two, that sales rates of advanced technology vehicles represents a significant concern.

We're asking that the Board direct staff to study these two issues and report their findings back to the Board by May of next year.

One year ago, at the October 2013 Board hearing you heard about these same two issues: Our concern over the fairness and equity with respect to TZEV credits and sales rates in the northeast. We requested that the ZEV regulation be reviewed more frequently, and staff said that we plan to update the Board every year on the status of the advanced clean car regulation, including the ZEV element, and use those opportunities to discuss any issues that arise or need further attention in their near time

frame. We believe we've consistently reported on those issues.

At the July workshop, we again raised these two issues with staff. We committed to providing even more data about the real world functionality of TZEVs. Over the summer, we aggregated telematics data from thousands of customer vehicles and shared this information with Idaho National Laboratory. We shared the data with INL and with the ARB because INL already has the nation's largest database. You'll hear from INL next.

Taken together, INL's data covers nearly 22,000 customers and 160 million miles of vehicle usage for both plug-in and battery electric vehicles. We believe this data re-enforces our request for the last several years that Board direct staff to evaluate this data and consider the policy implications. The current credit scheme for PHEVs significantly undervalues those credits and their needs.

So our four presenters are Barney Carlson from Idaho National Labs, Mike Lord of Toyota, Dan Adsit of Ford and Jim Ehlmann of General Motors. Thank you.

CHAIRPERSON NICHOLS: Thank you.

MR. CARLSON: Thank you for the opportunity to present to the Board on electric vehicle miles traveled analysis from on-road plug-in hybrid electric vehicles and

all-electric vehicles.

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MR. CARLSON: Brief background. Idaho National Lab has extensive automotive analysis expertise in leading the US Department of Energy's advanced vehicle testing activity for light duty vehicles. This is both on-road data collection of vehicles and charged infrastructure to the order of magnitude of a quarter of a billion miles of on-road data collection and over 44 gigawatt hours of charged infrastructure data collection and analysis.

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MR. CARLSON: With this experience, INL was offered the opportunity to collaborate on this electric vehicle miles traveled analysis with co-presenters. Idaho National Lab calculated EVMT for the plug-in hybrid electric vehicles and all-electric vehicles shown on the slide. This is over 158 million miles of data from over 21,000 vehicles driven by real consumers on road across the United States.

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MR. CARLSON: So brief background, the analysis method data. Completeness is a key portion to ensure that there was minimal missing data so that the results are robust. Missing data or data completeness could be a concern of data logger error or telematic disruption.

EVMT analysis was conducted on months that had a greater than acceptable data completeness.

To align for different data formats, multiple calculation methods were evaluated. All the differing methods were within two and a half percent. The final results presented will be based on two methods. One was based on the EPA label fuel economy and Electrical energy consumption. Second method is based on vehicle average charge sustained fuel consumption.

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MR. CARLSON: And the results. I know is this an eye chart. I just wanted to show all of the high level results in detailing total miles traveled, total months of data. But the high level that I want to point out was for the all-electric vehicles, the annual EVMT was roughly 9500 miles. Whereas, for the PHEVs, there was a wide range from 9,000 to 2500.

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MR. CARLSON: I also wanted to show this in graphical form. This is a histogram showing the monthly EVMT. The annual EVMT is nearly twelve times this. And this is a histogram of the various PHEVs and EVMTs.

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MR. CARLSON: So in summary, on-road data was collected and analyzed for 158 million miles worth of data

from 21,000 vehicles. The all-electric vehicle EVMT -- annual EVMT was roughly 95 and 9600 miles. For PHEVs had a wider range, 2500 to 9,000. And the results are robust because we've looked at various methods. And of the various methods, they were within two and a half percent variability.

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MR. CARLSON: And this analysis was supported by US Department of Energy's Vehicle Technologies Program. Thank you.

CHAIRPERSON NICHOLS: Thanks.

Mr. Lord.

MR. LORD: Thank you for the opportunity to speak today.

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MR. LORD: When we analyze the EVMT data from INL, we believe it shows that the current credit scheme does not align well with the data. This chart shows that compared to real world EVMT from the tens of thousands of cars, PHEVs typically receive fewer credits compared to BEVs.

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MR. LORD: We think we understand the mechanism behind this situation in the marketplace. Customers do not drive their vehicles to empty. They typically keep

about 30-some-odd miles in reserve. PHEVs can use all their battery and keep this reserve range in the gasoline, while battery electric vehicles must keep their reserve range in the form of battery capacity not used. This results in PHEVs having more EVMT than the credit scheme recognizes.

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MR. LORD: Now that we have substantial robust data about actual use, we request that the Board direct staff to study whether or not EVMT can be used to better reflect the social value of PHEVS with respect to both credits and their credit caps by May 2015. We believe the data is sufficient for staff to update the regulation. Staff strategy to wait until 2016 with Board action in 2017 eliminates two valuable years of planning time for auto makers to align plans with regulation.

I'm not going to risk clicking my own slides. Thank you for the opportunity to speak.

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MR. LORD: Another one of our concerns has to do with the northeast. Northeast sales rates of plug-ins are running at about a fifth of the rate in California.

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MR. LORD: We see a similar situation with hybrids, which have been on the market for 15 years and

are marketed in essentially the same manner in both regions. Regardless of that, hybrid sales are about at 40 percent of the sales rate of California in the northeast.

We believe there's some fundamental differences to the market.

Next slide.

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MR. LORD: Some of the differences can be addressed by state action through the MOU. Some of them can't. Clearly, weather can't be addressed through the MOU. Also, HOV lanes are another issue.

So we're asking the Board for a second resolution to direct staff to look at these key differences between the markets and better align the ZEV regulations to the market outside of California.

CHAIRPERSON NICHOLS: Thank you.

MR. ADSIT: Thank you, Chairman Nichols and members of the Board.

As you've heard from my colleagues, auto makers are facing some challenges now and in the near future. We are concerned about the timing of the midterm review, not just the model years being looked at, but any regulatory changes, if warranted, may not be considered until the 2017 calendar year. We believe ARB is and should be a data-driven organization.

First, the INL data shows the ZEV regulation undervalues PHEVs and we would argue unnecessarily limits PHEVs for compliance purposes. Chevy Volt customers are driving nearly as many electric miles as many of the battery electric cars are. That is to say nearly same environmental performance, and yet the regulation and its credit system do not fully recognize this contribution.

We are here to simply ask the Board to direct the staff to evaluate the TZEV credits amounts and treatment in light of the EVMT data and return to the Board with a recommendation on how to proceed. We believe this request should be acted upon as soon as possible, but no later than May 2015.

Secondly, there is a difficult situation in the northeast as evidenced by the sales data. At a time when we should be generating credits in preparation for the more challenging 2018 and later requirements, we are instead burning banked credits. This is resulting in large credit imbalances compared to California. And we do not believe it is due to a lack of effort as auto makers are discounting BEVs and PHEVs in the northeast, even with prices below those of California. And in some cases, the plug-in versions are selling for less than their hybrid counterparts. This discounting of advanced technologies is not sustainable and can have long-term negative

consequences.

We believe it is appropriate to ask that the Board direct staff to look into this issue and see if changes are appropriate. We believe that time is of the essence and that the Board should direct to act as quickly as possible, no later than May 2015.

On behalf of Ford, GM, Honda and Toyota, thank you for your time.

CHAIRPERSON NICHOLS: Thank you.

That concludes I believe the combined group presentation. So we'll hear next from Julia Rege from Global Auto Makers.

MS. REGE: I'm Julia Rege with the Association of Global Auto Makers representing twelve international automobile manufacturers. We have been and continue to be supportive of the single national program for greenhouse gases in fuel economy and recognize the important of the midterm review in assessing the future requirements. We appreciate ARB's commitment to this program and the midterm review and appreciate ARB's intent to evaluate the ZEV requirements as part of the midterm review.

Our members are committed to ZEV technology and have invested billions of dollars in the development and deployment of battery electric, plug-in hybrid electric, and hydrogen fuel cell electric vehicles. Our companies

are working hard to comply with the ZEV program through a variety of strategies and ZEV sales have been increasing in California.

In 2013, in response to concerns expressed by Global Auto Makers, various auto makers, and others, staff promised an annual update to the Board on the ZEV program. While we understand there are still additional updates as part of today's agenda, it is not clear that the update today addressed some of the concerns we have expressed about ZEV markets. We recommend that ZEV market conditions in all ZEV markets should be an important part of these annual updates so the Board can be updated on this aspect of the regulation.

It's also important to assess whether the ZEV market performance comes at the expense of significant manufacturer's subsidies and price cuts which are unsustainable for the long-term success of the technologies encompassed in this regulation.

Last year, auto makers expressed concerns about low sales price in the northeast and the ability of auto makers to comply. Since then, the states have sought input into and announced plans to develop and implement an action plan. And global auto makers and its members have been actively working with the states. But as recently as last month, in discussions with the northeast states, we

highlighted continuing concerns about market performance and chances for near-term improvements from the action plan. While we expect the action plan to help grow the market, it will take time to implement it.

In the mean time, our members' efforts in the northeast are continually falling short of regulatory targets, despite significant OEM subsidies. While California has allocated 120 million to the Clean Vehicle Rebate Program, the northeast states with collectively near the two times the California market and volume have allocated less than five million in incentives so far. Urgent changes are needed and we recommend that ARB, the states, and auto makers work together to assess that today's ZEV regulations are affected by these market differences.

We look forward to hearing more from the Section 177 states later today and will provide additional testimony at this time. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Mr. Douglas.

MR. DOUGLAS: Thank you, Madam Chairman and members of the Board. I'm Steve Douglas with the Alliance of Automobile Manufacturers.

I have a presentation as well.

(Thereupon an overhead presentation was presented

as follows.)

MR. DOUGLAS: We're making two very specific recommendations today, and we believe the staff could review these and bring their analysis back to the Board in the May/June time frame. The first is the review of the EVMT data to determine if adjustments are necessary to the TZEV credits in the category restrictions. The second is a review of the ZEV market and trends in the Section 177 states.

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MR. DOUGLAS: On the first item, EVMT, several presenters already made the case for EVMT. I won't belabor the point. However, I would note in January of 2012 when the Board adopted the TZEV credits and the restrictions, we had very little vehicle usage data. And now we have the data from INL of 21,000 ZEVs over 160 million miles. So we think it's entirely appropriate for the staff to review this new data and determine if adjustments are necessary.

Turning to the second recommendation of the 177 market, we say -- we understand and we accept that the ZEV requirements should be just as stringent and challenging outside of California as they are in California. However, today, two factors make the requirements outside of California much more difficult, much more stringent than

in California. Those are a later start for the ZEV implementation plan and just inherent market differences.

Next slide.

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MR. DOUGLAS: First, California has implemented and sustained comprehensive actions to support ZEVs for almost a decade now. In contrast, the other states are just developing and implementing the ZEV action plan.

We wholeheartedly support the efforts of the MOU states, and we believe they will pay dividends in the long term. However, in the near term, the other states have clearly started and are significantly behind California. And this late start makes the current requirements much more difficult outside of California.

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MR. DOUGLAS: Secondary, just inherent differences between the California market in the northeast, it's just different. Weather, population, consumer attitudes just an example of the substantial snow and the cold winters in the northeast mean that almost 50 percent of new vehicles in the northeast are all-wheel drive, compared to only 17 percent in California. And the same is true with just conventional hybrid vehicles where they're far less than half the rate in the northeast that

they are in California.

Again, we're not asking for less stringent or less challenging ZEV requirements outside of California. We're asking for equally challenging requirements and would ask the staff to review this.

CHAIRPERSON NICHOLS: David Reichmuth.

I guess we're not able to post the list here the way we do in Sacramento, so I'll just have to keep calling on people and ask you to be ready to come when it's your turn. Thanks.

MR. REICHMUTH: My name is Dave Reichmuth representing the Union of Concerned Scientists.

First, I'd like to note the success of the program, with 20 models of EVs now in California, many of them out in the parking lot today and more on the way soon. Consumers have many more choices to both save money and reduce emissions. With over 100,000 EVs now in the state, Californians are able to save over 60 million a year in fuel costs and reduce carbon emissions by 200,000 tons per year. So the ZEV program has been instrumental in driving this transformation of vehicles in California and the U.S.

Now I would also like to respond to the comments on EVMT that we've heard. Before I discuss the technical aspects of EVMT, I'd like to address the issue of timing.

The analysis of potential changes to vehicle credit values, the instruction of new metrics, or changes to the ZEV definitions, these are all items that are clearly best handled in the midterm review. The midterm review will include a comprehensive assessment. There are studies underway to support the assessment, and timing of the midterm review will allow more data to be collected.

Also, the Board specifically directed staff to bring in-use data on plug-in hybrids back to the Board in 2016. We are still in the early stage of the market development for these plug-in vehicles and accelerating changes in the credit values of vehicle class is not needed and is counter to the time table laid out in the 2012 ZEV amendments.

To meet the state's emission goals, as we heard in the update, we'll need virtually all new cars to be zero emissions by the 2040, 2050 time frame. The ZEV program is designed to ensure that zero emission vehicle technologies are ready and available for consumer over the coming decade and to ensure we're on the path to allow us to reach our emission targets.

While increasing the fractions of miles driven on electricity now will be beneficial, it's more important in the near term to make sure that we establish the viable ZEV market with many options for consumers. The ZEV

program in its current form is working and has been successful in supporting a robust roll-out of plug-in vehicles and now the fuel cell vehicles.

Lastly, I need to point out the EVMT data set being offered is insufficient to understand how EVs are currently being used. In particular, there's no data on long-range BEVs like the Tesla models, and has serious concerns about the representative nature of this data, both in terms of geography and early adopters versus late adopters versus second owners.

It's an interesting data set I'd like to learn more about it. But at this point, it appears insufficient based on the change on the ZEV program on this incomplete data set. I ask the Board not to divert staff and resources away from the existing analysis project and allow the midterm review process to continue on schedule. Thank you.

CHAIRPERSON NICHOLS: Thank you.

William Barrett and Simon Mui.

Mr. BARRETT: Good morning.

My name is William Barrett. I'm with the America Lung Association of California.

First of all, I want to thank staff for the thorough update and all the work that's gone into the preparation for the midterm review. The Lung Association

is particularly encouraged by the progress being made overall. And in particular, pleased to hear the confidence expressed in the PM measurement report. We view the stringent particulate matter standard as key to protect public heath and look forward to the discussion on whether or not this program and the timing of this program can move forward more quickly as discussed by the Board when the program was adopted.

We're also happy to see the ongoing commitments are being made by California and partner states to accelerate the ZEV market, including incentives, investments in charging infrastructure and hydrogen stations, and especially programs to direct clean air benefits to our most disadvantaged communities and something to really look forward to working with you on.

I'd like to restate the concerns about moving too quickly on the EVMT credit concept discussed earlier. We feel the 2016 midterm review is the appropriate time for this level of discussion, given the need to review the data and any research coming out. We just feel that May is too soon for that discussion of major change to the program and feel that the 2016 midterm review is really there for that reason.

So we look forward to working closely with staff and the Board to ensure the momentum continues that we see

on display outside and to really meet those clean air targets illustrated by Dr. Wallerstein this morning.

Thank you very much for the update and look forward to continuing to work with you and the staff. Thanks.

CHAIRPERSON NICHOLS: Thank you.

Mr. Mui.

Mr. MUI: I'm Simon Mui with Natural Resources Defense Council. I direct our work on clean vehicles and fuels.

Thank you for the opportunity to speak today. We're very excited to see over 20 vehicle models being now offered that are electric drive, which are out in the parking lot today. And one of our key questions I guess going forward around this discussion of EVMT is, one, what are the policy implications of the proposal here?

And first off, we're very excited to see new data being brought and collected, but we want to emphasize this is very initial data on some of the models that have come forward. We still have limited data, a lot more questions than answers. We do see the midterm review as a proper process, agreed-upon process to review the advanced clean cars regulation, the GHG emissions together, collectively with the ZEV program.

Now, when we look at this issue, our message to

ARB is the same as we've been telling OEMs, that we need to ensure that this data collection process just does not simply become a strategy; right? A strategy to simply increase credits for plug-in hybrids, call it a day, and reduce the numbers of vehicles ultimately.

Our very quick is analysis if you reflect the credits to e-miles for plug-in hybrids, that would essentially reduce the total vehicles brought to California and the ZEV states by almost 30 percent. So the Governor's 1.5 million EV goal then starts looking like 1.1 million EVs. And that is not the direction, the signal that our organization and I think many others who have been working very hard to build this market want to see.

The second issue I want to flag is that we don't even have data in terms of the vehicle offerings, the number of dealerships that have been selling vehicles across California and the section 177 states. One of our concerns is that we can't sell what you don't offer, what you don't market. We need data on that to really look at the policy and understand the dual rolls here between the regulator and the regulatee.

And finally, we want to ensure that the primary goals of the ZEV program remain those goals, which are really to spur widespread deployment of pure zero electric

vehicles, electric drive train to meet our air quality GHG emission goals. Plug-in hybrids, TZEVs have been added as a flexibility too as a stepping stone in enabling technology. So the question in our minds, can we meet our long term goals with just TZEVs alone? I think the answer is no.

Thank you.

CHAIRPERSON NICHOLS: Thank you. That is the end of the list of witnesses on this update informational item. I believe everyone is aware that we have a couple of other items on our agenda today which touch on this issue in various ways.

We have a request outstanding from the large volume manufacturers and the Global Automakers to give direction to the staff. But I'm going to ask the indulgence of my Board, even though I know all of you have opinion about this issue to not try to give any address to the staff at this time, but to wait until later in this agenda when we're dealing with a resolution that directly addresses ZEV credits and then talk about how we're going to factor in all that you're hearing here.

I think it would be inappropriate to move without having heard from the 177 states. I'd like to have a chance myself to do a little reflecting on where we are. The fact is that we're about to go out and look a little

later at some of the wonderful vehicles that have been brought here as a result of our ZEV mandate. I've been in conversation with people at EPA about the process for the midterm review that they're going through and their hope for California as a participant in that effort. And these things are all kind of coming at us from different directions.

So without further ado, what I would like to do is simply to move onto the next item and the showcase and then bring this back to discussion when we deal with the ZEV regulation later on today.

BOARD MEMBER BERG: May I just ask a clarifying question?

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER BERG: Can we also at that time ask staff about any other questions that we might have on their presentation?

CHAIRPERSON NICHOLS: Yes. Although if it's just on the charts that were shown, let's do that now. I don't mean to rush us. So if you've got some informational requests, let's do that at this point.

BOARD MEMBER BERG: I just have a question on slide 10 in regards to the trends of sales, if staff could comment on the market conditions that have taken place in order to achieve these sales.

DEPUTY EXECUTIVE OFFICER AYALA: I can give it a start and then other staff can add.

I think --

BOARD MEMBER ROBERTS: Could you put the slide up?

BOARD MEMBER BERG: Just to narrow my question, I'm not referring to the 177 states. I'm only referring to the sales in California.

DEPUTY EXECUTIVE OFFICER AYALA: Right. This really gets to the heart of the effort that we've got going with our partners in the northeast and Oregon. That really is -- we are looking at the factors that actually effect this type of market uptake. As you know, in California, we benefit and are fortunate because we have a number of factors that appear to be working together very well. We have incentives. We have both financial as well as non-financial incentives. Obviously, rebates play a big role. We know that, and I think we have evidence to support that.

But we also have non-financial incentives that in some places play an important role, such as HOV lane access in some markets. What we're looking at is we're looking at all the factors and all the players. And frankly, it's a bit of an all-hands-on-deck strategy that we've had in California. And you see the results of that.

And one of the things that we're actually doing is examining as we go and as we transition the market from the early adopters to some of the other phases, what else can we do? How can we make this combination of very positive factors work in a better way to continue this trend?

BOARD MEMBER BERG: What research or what information are we pulling up on price, for example? I know when I bought my Leaf, I leased it. And my lease payment was 50 percent greater than the lease payment today. I would love to think that we're selling enough cars that the price is coming down. But I would say that's not correct. So how much of that is playing into the sales of the car?

DEPUTY EXECUTIVE OFFICER AYALA: It certainly is a factor, because ultimately the decision is a personal decision. And one of the things that we want to do is to include factors such as price and others in this market assessment that we want to bring to you. Because again, we do see very healthy trends here in California. But we are certainly not at the point where we fully understand if we are going to continue on this trend. I mean, certainly it's very positive. And we need to continue to work with our partners. Again, when it comes to pricing, they are the ones that actually control that metric,

correct.

BOARD MEMBER BERG: Thank you.

CHAIRPERSON NICHOLS: Professor Sperling.

BOARD MEMBER SPERLING: I'd like to tie a few ideas here together, starting with Dr. Wallerstein. I think to elaborate on what he said is it's really remarkable how far we've come in the automotive industry and with vehicles. We have the criteria pollutants are approaching a 99 percent reduction from pre-control, which is an extraordinary story. And now we're on a trajectory for a dramatic reductions in greenhouse gases from vehicles. We really are on a trajectory to get to that 80 percent reduction from vehicles by 2050. And that, of course, assumes we continue with the greenhouse gas standards and the policies that we have in place. But we are on that trajectory, and there's probably no other sector in the society that can say that.

And so bringing back to what Board member Berg just said as we go forward, specially with the advanced vehicles and making sure we phase them infrastructure a timely manner, we really need to understand the different players and the roles.

And there was that brilliant presentation by Eric Cahill -- from U.C. Davis; isn't he? You know, pointing out that we have government. We have policy. We have the

auto makers. We have the dealers. And we have the consumers. And we've got to be focused.

We is much more than ARB, by the way. But we more generally. And I think we're making good progress in some of these areas more than others.

But as Dr. Ayala just said, you know, we don't always understand these very well. I'll just leave one little anecdote that is the story that we haven't heard today is with Georgia Atlanta. They have very fast growth in electric vehicles. Actually had a similar growth rate to California. And yet, we don't -- why is that? There were a couple years the incentives were placed, the HOV lane access was in place. They weren't selling. And then all of a sudden, sales took off.

And a few of us have some hypothesis about what happened. It seems like at least one big role was the dealers there that got organized and went back to Nissan and went to the utilities and so on. But it highlights that we really need to keep our eye on the ball in terms of thinking through where are the opportunities and the pressure points and make sure we're developing the policy frameworks that really do move us in that direction. But the good news is we are moving forward in a very positive way.

CHAIRPERSON NICHOLS: Thank you. We'll next move

on then to a proposal to amend our LEV III criteria pollutant regulations for light- and medium-duty vehicles, the hybrid electric test proposers, and heavy-duty auto cycle and heavy-duty diesel test procedures.

This is a regulatory item. So we will be formally taking testimony for the record and closing the record, et cetera.

Just to give a little intro here, in January 2012, the Air Resources Board approved LEV III regulations as part of the Advanced Clean Car Program. These regulations require significant reductions in criteria pollutant emissions from light- and medium-duty vehicles during model years 2015 through 2025.

Subsequent to the adoption of the Advanced Clean Cars Program, U.S. EPA finalized the federal Tier 3 program designed to reduce criteria pollutants from light-duty vehicles for model year 2017 through 2025.

Today, staff is proposing to incorporate some of the features of the Tier 3 program, some of which are more stringent than LEV III. This will allow manufacturers to produce vehicles that can meet both California and federal emissions requirements. So further alignment.

The second major element of the staff's proposal is to revise the current procedures for testing hybrid electric vehicles to reflect current real world vehicles.

Mr. Corey, would you please introduce this item?

DEPUTY EXECUTIVE OFFICER COREY: Yes, thank you, Chairman.

The federal Tier 3 program closely mirrors California's LEV III criteria pollutant program and was developed in a cooperative effort with ARB. However, there remain a number of requirements in which Tier 3 and LEV III differ. Today's proposal amendments are primarily intended to incorporate those elements of the Tier III Program that are more stringent than California's LEV III program or provide additional compliance flexibility without reducing or delaying progress towards achieving the benefits of the LEV III program.

Today's proposal will also revise the procedure for testing plug-in hybrid electric vehicles, making it more streamlined for plug-in hybrids with significant electric range.

And finally, staff is proposing to update additional test procedures to allow manufacturers to continue to test vehicles using the federal test procedures and make minor corrections to the regulation.

Sarah Carter of the ECARS Division will now give the staff presentation. Sarah.

(Thereupon an overhead presentation was presented as follows.)

STAFF AIR POLLUTION SPECIALIST CARTER: Thank you, Mr. Corey.

Good morning, Chairman Nichols and members of the Board. Today's presentation will cover proposed amendments to our low emission vehicle, or LEV III, program.

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STAFF AIR POLLUTION SPECIALIST CARTER: First I'll provide some background on our LEV III program, followed by the proposed changes to LEV III to better align with the federal Tier 3 criteria pollutant regulations. Then I will highlight the major differences that will still remain even with the proposed changes are adopted by you today.

And finally, I will discuss a separate element of today's proposed rulemaking, changes to the hybrid electric vehicle test procedures.

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STAFF AIR POLLUTION SPECIALIST CARTER: As you heard in the previous presentation, LEV III was approved by the Board in January 2012 as part of the Advanced Clean Cars Program, or ACC program. Applicable to light- and medium-duty passenger cars and trucks out to the 2025 model year, the program achieves a 75 percent reduction in smog-forming pollution and a 90 percent reduction in the

particulate matter standard.

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STAFF AIR POLLUTION SPECIALIST CARTER: In parallel with the development of our program, the U.S. EPA developed their Tier 3 program to establish nationwide criteria pollutant emissions standards. Staff worked closely with U.S. EPA in order to provide as much consistency as possible between the two programs.

Earlier this year, the Tier 3 program was finalized. While Tier 3 closely mirrors LEV III in structure and requirements, some elements of the LEV III program remain more stringent than the federal program in order to address California's unique air pollution problems.

Additionally, the Tier 3 included substantial restructuring and updating of the associated emission test procedures set forth in the code of federal regulations, or CFR.

Finally, Tier 3 also includes a requirement to lower the sulfur content of gasoline to align it with California's low sulfur gasoline requirements.

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STAFF AIR POLLUTION SPECIALIST CARTER: The goal of today's proposal is to enable manufacturers to produce vehicles that can meet both California and federal

emission requirements without sacrificing California's air quality needs.

Today's proposal is consistent with our previous commitment, where we agreed to revisit our program to determine where we could align without sacrificing California's air quality needs. As a result, the changes being proposed today are mostly targeted at specific elements of the program or are technical in nature and have broad stakeholder support.

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STAFF AIR POLLUTION SPECIALIST CARTER: Today's proposal incorporates elements of Tier 3 that are more stringent or provide addition compliance flexibility without reducing or delaying progress towards achieving the benefits of LEV III. Examples of proposed modifications include: Further restricting NOx emissions and adding a phase in alternative for medium-duty vehicles, adding standards that apply in high altitude, aligning the standards for small volume manufacturers, adding a new off-board leak test and standard to better ensure good evaporative emission control, harmonizing on new federal test procedures, and allowing vehicles to be certified using federal fuel as an alternative to California fuel.

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STAFF AIR POLLUTION SPECIALIST CARTER: The proposed amendments also increase the stringency of the supplemental FTP PM standard for 2017 and beyond to align with Tier 3. Beyond the Tier 3 requirements, staff is proposing an anti-backsliding provision to ensure progress toward meeting the final six milligram per mile standard.

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STAFF AIR POLLUTION SPECIALIST CARTER: While we started with a list of well over 50 differences between the two programs, staff has worked diligently with industry to remove any unnecessary differences. This slide highlights a number of remaining differences that will remain in the Board adopts the proposal before it today.

With the proposed modifications, the two programs will be quite similar, but the LEV III will still contain a number of important elements that are critical for achieving our air quality goals.

Staff has engaged in extensive discussions with industry concerning the last three of these differences, the one milligram per mile PM standard, the length of the credit life, and the sales basis used for determining compliance. Therefore, these issues will be discussed further in the following slide.

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STAFF AIR POLLUTION SPECIALIST CARTER: With respect to PM standards, both programs include an identical three milligram per mile FTP PM standard. However, the LEV III program goes further and includes a more stringent one milligram per mile FTP PM standard beginning with the 2025 model year to ensure vehicle PM emissions remain very low and we stay on track to meet ambient air quality standard.

As already mention announced the previous presentation, staff will be reporting back to the Board next year on progress in confirming measurement capability for these low PM levels. Subsequent to that, as part of the midterm review, staff will also reevaluate the feasibility and implementation timing of the standard.

A second difference between the two programs is the length of credit life. Credits are earned when a manufacturer overcomplies with the fleet average and credits are used if a manufacturer under-complies. This earning and use of credits gives manufactures some breathing room from year to year if actual sales vary from what was projected.

While LEV III allows such credits to be used as late as five years after they are earned, the Tier 3 temporarily extends the life out to eight years. While credits do provide flexibility to manufacturers to manage

their fleet, further extension can delay introduction of the cleanest vehicles required near the end of the program.

When LEV III was adopted, manufacturers raised concerns regarding the uncertainties involved with introducing new technologies to meet more aggressive greenhouse gas standards while simultaneously meeting more stringent criteria pollutant standards. To mitigate some of the risk, the LEV III standards were modified to phase in slightly less aggressively and to substantially extend credit life to a full value for up to five years.

Two years later where we are today, staff does not believe any further extension of credits is warranted, but also expects that this issue will be reassessed as part of the midterm review as we get further along in implementation and any uncertainties become clearer.

The final major difference is the vehicle fleet that is used to determine compliance. The Tier 3 program is based on sales in all 50 states, while LEV III is based on sales in California combined with sales in the Section 177 states. The proposed amendments today do not change this distinction because it is critical for California to maintain its capability to use rigorous certification, in-use testing, and enforcement programs to maximize the air quality benefits in California. A change to a

50-state fleet would likely create difficulties in implementation and enforcement, given compliance would primarily be based on vehicles sold outside of California.

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STAFF AIR POLLUTION SPECIALIST CARTER: Other changes that are being proposed today include: Updated reporting requirements for manufacturers to provide projected sales information for hydrogen vehicles, batter electric vehicles, and plug-in hybrid electric vehicles to better plan for infrastructure and rebate budgets. And modifications to the window labels to include the LEV III categories and to reflect the range of greenhouse gas emissions from the current fleet.

Staff is also suggesting a number of modifications to the original proposal. These modifications are primarily administrative and clarifying changes. These suggested changes will be sent out after this hearing as part of the official 15-day comment period process.

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STAFF AIR POLLUTION SPECIALIST CARTER: The second major element of staff's proposals on modifications to the hybrid electric vehicles test procedures.

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STAFF AIR POLLUTION SPECIALIST CARTER: In 2009,

when the hybrid test procedures were modified, plug-in hybrid vehicles, or PHEVs, were not available to fully develop the procedures. Now that such cars are available, the staff and industry have identified several elements that make the procedures unnecessarily lengthy and burdensome for PHEVs with significant electric range.

In developing the proposed changes, staff tested five PHEVs at ARB's Haagen-Smit Laboratory over several months working closely with the U.S. EPA and industry. This work resulted in several minor changes to streamline testing, including the development of an alternative emission test for qualifying PHEVs.

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STAFF AIR POLLUTION SPECIALIST CARTER: Here's an example of how the current PHEV procedures work, which require that a vehicle be fully charged and then driven through all of the electric miles each time emissions are measured. For PHEVs with significant all-electric range, this presents a significant test burden with many repeat cycles of pure electric operation before the engine finally starts and emissions can be measured.

The proposed alternative would greatly simplify the procedure now that we have a better understanding of how actual PHEVs are working, yet still give us representative emission results.

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STAFF AIR POLLUTION SPECIALIST CARTER: In summary, today's proposed changes to the LEV III program are fairly limited and targeted towards very specific requirements in our regulations. Adoption of our proposal will better allow manufacturers to produce common vehicles to meet both California and federal standards without sacrificing California's air quality benefits.

These changes do not alter any significant environmental or economic impact from the LEV III program. And there is broad stakeholder support for this proposal.

In staff's view, this creates a win-win situation for both California and for the auto industry. And we recommend its adoption.

CHAIRPERSON NICHOLS: Thank you.

Mr. Corey, do you have any further comments before we go to testimony?

DEPUTY EXECUTIVE OFFICER COREY: No additional comments.

CHAIRPERSON NICHOLS: Thank you. We'll hear again from Barry Wallerstein.

MR. WALLERSTEIN: Good morning, again. I'll be very brief on this item.

I'm here to support the staff's recommendation. They've done a very thoughtful and thorough job on this

item. I do want to underscore as part of their recommendation they are not recommending extension of the credit life. We concur with that absolutely. No changes at this time. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Mr. Kubsh.

Mr. KUBSH: Good morning, Madam Chair, members of the Board. I'm Joe Kubsh, the Executive Director of the Manufacturers of Emission Controls Association.

MECA has been a strong supporter of California's LEV III and EPA's Tier 3 light-duty vehicle regulations. And we are pleased to be here today to support your staff's proposal to more completely align these programs into a single national program.

As we have indicated in both our LEV III and Tier 3 comments over the past three years, MECA members have already developed and commercialized a variety of cost-effective exhaust and evaporative emission control technologies that will allow auto manufacturers to comply with future LEV III and Tier 3 emission limits.

MECA members continue to invest in the further development of these technologies that will bring all light-duty vehicles to near-zero emission levels by 2025.

We also support your staff's decision to keep the few remaining differences between Tier 3 and LEV III.

From our perspective, the most important of these is the LEV III one milligram per mile FTP PM limit. MECA members are already working with their customers on emission solutions options for reducing ultra fine particulate emissions on gasoline direct injected engines. Gasoline particulate filters are being evaluated by all European auto manufacturers as an option for complying with future stringent European particle number standards. In fact earlier this year, one European OEM introduced particle filters on one of their GPI vehicles in Europe.

California needs to continue its leadership role in the auto emissions sector by ensuring their LEV III program brings forward the use of best available particle emission technology on future gasoline vehicles. We look forward to working with your staff as they review the stringency and timing of the LEV III one milligram per mile standard as parted of the upcoming midterm review. Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Mr. Burns.

MR. BURNS: Good morning, Chairman Nichols and members of the Board. I'm Vaughn Burns of Chrysler Group, LLC.

We appreciate the opportunity to comment on amendments proposed by the staff to the California Air

Resources Board on the LEV III rules.

As a member of the Alliance of Automobile Manufacturers we fully support comments submitted under the Alliance and the Association of Global Automakers written and oral testimony. Specifically, today we ask that California harmonize its NMOG and NOx credit life with U.S. EPA Tier 3 approach to address legal concerns over lead time and stability to best serve ARB's goal for early actions to optimize air quality benefits.

First, extending the credit life would address the lead time and stability concerns by providing manufacturers with certainty regarding near-term investment in advanced technologies for the future knowing a mechanism is in place to manage risk and recoup investment.

Second, extended credit life in the near-term environmental and public health benefits because manufacturers would be incentivized to induce cleaner vehicles in the near term. Extending the credit life to eight years affords manufacturers flexibility in planning their GHG technology investments.

The Clean Air Act Section 202(a)(3)(c) directly addresses this consideration with respect to vehicles in excess of 6,000 pounds GPW, by providing that manufacturers must be afforded four years of lead time or

three year period of stability to comply with new standards.

The LEV III standards which decline steadily on a year to year basis violate this requirement because they do not apply for a period of three years. As such, the LEV III standards are inconsistent with the Clean Air Act and are volatile to challenge. The violation is grounds for EPA to deny a waiver of the rule or any subsequent iteration of the rule since the Clean Air Act provides that a waiver shall not be granted if the administrator finds that such state standards and accompanying enforcement procedures are not consistent with Section 7521(a) of this title.

The extended credit life that EPA incorporated in Tier 3 rule provides an alternative mechanism to provide manufacturers flexibility in planning their emission control and GHG technology investments, which is exactly what Congress to sought afford manufacturers in stability requirements in Section 202(a)(3)(c).

Adopting the tier credit for NOx emissions would also incentivize manufacturers to produce lower emitting vehicles earlier than if credits expire after only five years. ARB provided two responses to industry recommendation to extend the credit life to eight years.

First, ARB expressed concern that the eight-year

credit life could impair compliance with those ambient air quality standards in 2023. But at the same time, ARB acknowledged an eight-year credit life would provide substantial benefit to achievement of compliance with ozone ambient air quality standards in 2023.

Second, ARB observed its premature at this time to extend credit life because of uncertainties related to possible technologies for later model years. In fact, manufacturers will be less likely to pursue significant near-term investment in advanced GHG technology if their ability to generate NROG NOx credits now would not provide the insurance and flexibility to address manufacturers' central concern in meeting LEV standards in the later model years.

We are hopeful that California would want to consider all reasonable actions to take that could lead to the success of its programs and harmonize EPA's eight-year NROG plus NOx credit life would enable earlier introduction to advanced GHG technologies that could require more development time to meet California's NOx standards, which are the most stringent in the world.

Going forward, manufacturers are faced with an incredible challenge. And every time California chooses to be different, it drives additional complexity that jeopardizes our collective chance to succeed. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Julia Rege from Global Automakers followed by William Barrett from the America Lung Association. That concludes the list of witnesses I have on this item

I'm sorry. Steven Douglas, you'll come next.

MS. REGE: Julia Rege, Global Automakers.

Global Automakers supports harmonization of the LEV III and EPA Tier 3 standards. These standards will result in significant environmental improvements as they bring light-duty vehicle emissions to near zero levels. Harmonization has been a key component of these programs from inception, allowing for efficient and cost-effective implementation, while also balancing resources necessary to implement the LEV, GHG, and zero-emission vehicle regulations.

Global Automakers appreciate ARB staff's efforts in developing these amendments and would like to thank staff for the countless amount of time spent working with industry to review requirements and work towards harmonization with EPA's Tier 3 rule. Today's amendments help bring the two programs closer to each other.

We have submitted detailed comments on these rules, highlighting our support and also noting additional opportunities for harmonization. For instance, the LEV III program is still not fully harmonized with the Tier 3

program, as we heard, in areas such as 50 state pooling and eight year credit life that would bring the programs further into alignment.

Additional harmonization efforts will be needed as well. First, we have provided comments on additional work that must be done under this rule, but cannot be addressed at this time through the 15-day notice process. Second, EPA is currently working on a package of amendments which will need to be compared to ARB's regulations and may result in the need for additional amendments.

Therefore, we would like to recommend that ARB include an additional amendment package in early 2015 to address any remaining issues. In the mean time, we will continue to work with staff to identify additional areas where updates are necessary to ensure harmonization to the fullest extent possible. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Mr. Douglas. I guess it's good that we have roll reversal or order reversal once in a while.

MR. DOUGLAS: I have a presentation as well.

Before I get started on my testimony, I'd like to take the opportunity to acknowledge the ARB staff throughout this eight months of this rulemaking and the five years of LEV III in total. They've been faithful

making themselves available for countless meetings, conference calls, e-mail exchanges. And throughout that, they've been thoughtful, open, and thoroughly professional. We appreciate that.

(Thereupon an overhead presentation was presented as follows.)

MR. DOUGLAS: LEV III, this is the test procedure, durability. It's not as glamorous as battery electric vehicles and fuel cells. But it is the workhorse of California's vehicle emission regulations. The skies are clear in Los Angeles not because of electric vehicles today, but because of these regulations and because of the thousands of automotive engineers around the world who have worked on this.

Next slide.

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MR. DOUGLAS: So this is just -- this slide shows the progress we've made 99.7 percent cleaner.

And the next slide, these are just some quotes from ARB and --

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MR. DOUGLAS: -- some air pollution specialists. I mean, it's pretty extraordinary how far we've come.

Next slide.

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MR. DOUGLAS: To say that the LEV III is not complete, there is a long road ahead of us. There is a lot of work. And we're not doing LEV III in the vacuum. We have the most stringent greenhouse gas regulations in the history. And as you well know, we have a very large quantity of zero emission vehicles. It's all in the same time frame, all coordinated.

Next slide.

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MR. DOUGLAS: Because of all the work that we had in looking at that, we asked ARB several years back and EPA to harmonize on the criteria regulation. This eliminates duplicative requirements and saves both the agencies and the industry a lot in the long run. The ARB and EPA regulations are, in the most cases, harmonized where we prefer to see harmonization and credit life which EPA did adopt.

And next slide.

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MR. DOUGLAS: Just one final thing. After the ISOR was issued, we found a number of areas where we can streamline the test procedures and harmonize a little bit further. We identified these with ARB staff and they agreed with us. So with -- and these are significant that will improve the procedures or reduce the burden. And

again, ARB staff's support some of those. So with the Board's agreement, we would like to work with ARB staff in the coming months and bring those additional changes back to the Board for your review and approval.

CHAIRPERSON NICHOLS: Okay. Thank you.

Mr. Barrett.

MR. BARRETT: Good morning, again. I'm Will Barrett of the America Lung Association of California. I'm also speaking this morning on behalf of the Center for Energy Efficiency and Renewable Technology, or CEERT, who couldn't be here today, but we did join with them on a letter in support for this proposal.

So we do support the work of the staff to follow through on California's commitment to align the state and federal vehicle programs, while preserving California's ability to protect our citizens through stronger vehicle emission standards. Both the Lung Association and CEERT support the Board staff's work to ensure alignment with Tier 3 to preserve the air quality benefits and compliance requirements expected for the state's most stringent standard. We also appreciate the proposal incorporates Tier 3 elements that are more stringent than original LEV III program.

Due to the serious health dangers of particulate pollution, our organization is especially supportive of

retaining the LEV III program and stronger one milligram per mile particulate pollution standard. This provision provides direction certainty that vehicles will limit toxic particulate pollution while technologies to reduce greenhouse gases advance.

As noted earlier, we look forward to the 2015 update the staff will provide on the particulate measurement capabilities and the potential for accelerating the phase-in of the one milligram standard.

We also appreciate the proposal preserves the LEV III credit life provision. The current full credit five-year window created for the LEV III provides a sufficient expansion of flexibility of the LEV II and assures overcompliance in the early year does not effect compliance and progress over time.

We don't believe that extending this provision to eight years now is necessary, given flexibility of LEV III.

In closing, we just want to again appreciate the work of staff to align and strengthen our state standards with the national standards while maintaining the clean air benefits needed to protect California's health.

So CEERT and the American Lung Association both join and urge you to adopt the staff proposal today. Thank you for all your work protecting the air of

California.

CHAIRPERSON NICHOLS: Thank you.

That concludes the list of witnesses who have signed up to speak on this item. So I'm going to close the record. But I will ask staff if you have any final comments that you'd like to make in response to anything you've heard or just continue this -- okay. Good. Very good. All right.

Do I have any motion from the Board then to move on this item?

BOARD MEMBER RIORDAN: Madam Chairman, I would move approval of the Resolution 14-34 for this item.

BOARD MEMBER ROBERTS: Second.

CHAIRPERSON NICHOLS: Seconded by Supervisor Roberts.

Any discussion on this item? If not, I'll ask for all in favor to please say aye.

(Unanimous aye vote.)

CHAIRPERSON NICHOLS: Opposed?

Any abstentions?

Great. Thank you. Good work.

Our last agenda item for this morning is a brief introduction by Annette Herbert from our El Monte staff, which will then tee up a visit to the showcase that's been assembled for us out in the parking lot in front of this

building.

You've heard reference to it before, but now we'll get a chance to actually go and have a look at some of these vehicles. The plan is that after Ms. Hebert's remarks, we'll adjourn to the outside. There is going to be a press conference as well as a guided tour for Board members. So the Board members are all invited to participate in the press conference. We will be joined by representatives of the eight states that are signors of the ZEV memorandum. And the purpose of this is to make an announcement about a milestone that has been reached in terms of zero emission vehicle sales so to formally announce that good news.

The press conference is going to be webcast. But for those of you who are watching on the Internet, when the time comes for us to adjourn, we suggest that you refresh your browsers just to ensure that you get reception once we're actually outside. And then after the tour, Board members and others will break for lunch and the Board will resume in this room formally at 2:00. So that will be enough time for everyone to actually get a chance to look at the vehicles, as I understand. Many of them are also available for test driving for those who would like a chance to get behind the vehicle of some of these exciting vehicles.

So without further ado, I'll ask Ms. Hebert to introduce the item.

(Thereupon an overhead presentation was presented as follows.)

CHIEF HEBERT: Thank you, Chairman Nichols. Good morning, members of the Board.

This brief presentation goes along with the zero emission vehicle showcase we are hosting here today. Before we head outside to see the vehicles, I would like to point out why this showcase is such good news for California.

Although your formal tour is about to start, the vehicles have been on display since 9:00 a.m. this morning and will be here until 3:00 a.m. this afternoon.

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CHIEF HEBERT: These zero emission vehicles, whether they are battery electric, hydrogen fuel cell, or plug-in hybrid represent the most diverse group ever assembled.

Today, we have 23 passenger car models ranging from currently available to those on the verge of release. We have eight motorcycle models, including prototypes, market available, and a world-record holding race motorcycle. The heavy-duty vehicles, both trucks and buses, represent our commitment to clean goods movement

and transportation for all of California.

One of the most eye-opening parts of this showcase is the diversity of passenger cars.

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CHIEF HEBERT: Not only has the number of zero emission passenger cars increased each year, as you heard from Ms. Chen's presentation, but the types of vehicle technology available to consumers is consistently increasing. Today, there are over ten battery electric cars, six plug-in hybrids, two hydrogen fuel cell vehicles, and an extended range battery electric vehicle.

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CHIEF HEBERT: When you came in today, you may have noticed the great variety of the passenger cars. More than ever, there is a vehicle with characteristics that fit the needs of most drivers, from SUVs, to sedans, to sports cars, to hot hatch backs. This vehicle is growing to match the diversity of California drivers.

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CHIEF HEBERT: Zero emission transportation is moving beyond the car. One of the most heartening things about this ensemble of vehicles is how many of them have been developed and brought to market by consumer demand. We have great cars, trucks and buses, that are the life blood of California commerce, and motorcycles with

world-record setting speeds. Not to mention, Harley Davidson, a company known for their engines, has a working prototype electric motorcycle on display that they're evaluating for production.

Based on the undeniable and clear transformative path that transportation and personal mobility is on, we hope that Harley Davidson does commit to producing their zero emission bike for the California market. This new generation of electric motorcycles are not only clean, but the only smell that's left after an electric motorcycle drives by is the smell of burning rubber.

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CHIEF HEBERT: With that, I invite you to come outside to check out the showcase which started earlier this morning and will continue until 3:00 p.m. this afternoon. In a few minutes, Chairman Nichols and Commissioner Cash from Massachusetts will provide some brief remarks for the formal kick-off of the event followed a formal tour for Board members as part of today's advanced clean cars item. Please look for your blue name tags for your tour guide leads. We hope to see you outside for this wonderful showcase.

CHAIRPERSON NICHOLS: Thank you. Before we actually move on, I understand that there were a couple of who signed up for public comment. But it's not clear to

me whether it was on this item or just in general for public comment. If it's general public comment, then it should and can wait until the end of the afternoon. Is there anybody who wished to speak publicly on the showcase? I don't think so.

Okay. Let's go then. Thank you.

(Whereupon a lunch recess was taken from 11:14 a.m. to 1:31 p.m.)

CHAIRPERSON NICHOLS: For those who listened to my words instead of looking at the screen, you may have thought they were reconvening at 2:00, but we decided to make it 1:30 because it was very hot outside and people were able to get through the tour in good time. So anyone who is within the sound of my voice or waiting outside I the hall, please encourage them to come.

The next item on our agenda is an update on the plug-in vehicle infrastructure evaluation and multi-state zero emission vehicle Memorandum of Understanding. The role of infrastructure has in advancing the adoption of zero emission vehicles cannot be overstated. Since we reported to you on ZEV infrastructure last year, California has witnessed a 70 percent increase in the number of public chargers with a four and a half fold increase in the number of quick charge stations all accompanied by an overall increase in the amount of

charging done away from home.

The presentation that you're about to hear provides an update on the zero emission vehicle infrastructure development and strides made to get the greatest benefit from public charging infrastructure. We will follow with a brief overview of plans to advance California's hydrogen station network that is needed to support the auto makers introduction with significant numbers of fuel cell electric vehicles in the next few years.

And now I'll turn to our Executive Officer to introduce this item.

CHIEF COUNSEL PETER: Actually, Chairman Nichols, you were going to make an announcement about the public comment.

CHAIRPERSON NICHOLS: I was, you're right. Thank you for reminding me.

Before our Executive Officer introduces this item, I was going to mention we do have an open public comment period every day that we are in public session. And we do just request that people sign up in advance if they're going to comment so we know how much time to allocate for it. Anyone who wants to can speak to the Board for three minutes on any topic, but no action could be taken, if it requires any kind of notice or other form

of legal activities.

So if you are planning to comment during the public comment period, I need you to sign up with the clerk of the Board, who sits over there on the side, within about the next five minutes or so. Otherwise, we will take public comment tomorrow. We'll do the public comment after our last regulatory item but before we give out the CoolCalifornia awards, because I think when we do that, we're going want to bring out a celebration and reception for the winners of CoolCalifornia. So thank you for that reminder.

Now, Mr. Corey.

DEPUTY EXECUTIVE OFFICER COREY: Yes, thank you, Chairman Nichols.

Appropriate fueling infrastructure is critical to ZEV adoption, meeting our ZEV mandate targets, and achieving Governor Brown's ZEV Action Plan goal of 1.5 million ZEVs by 2025. Staff's presentation shows how far we've come and the important next steps.

With that, I'm going turn its over to Leslie Goodbody of our ECARS Division to begin the presentation.

(Thereupon an overhead presentation was presented as follows.)

AIR RESOURCES ENGINEER GOODBODY: Good afternoon, Chairman Nichols and members of the Board.

Staff has been coming back to the Board each fall to give updates on the ZEV infrastructure. Last year, we focused on hydrogen infrastructure with the passage of Assembly Bill 8.

My presentation today will focus more on plug-in vehicles or PEVs and the infrastructure. And it will include an update on the numbers of public charging stations, and existing and planned retail hydrogen stations, followed by investments made by the state in recent years to spur the growth and development of charging infrastructure.

Then I will focus specifically on charging infrastructure, including charging station settings and usage and the ways in which away from home charging can lead to increased adoption of plug-in electric vehicles and increased electric miles.

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AIR RESOURCES ENGINEER GOODBODY: The good news, California is making progress toward meeting our ZEV targets. We have seen a 50 percent increase in public charging stations since this time last year. The number of fast charging stations has more than quadrupled and hydrogen fueling station development is on schedule to meet fuel cell vehicle needs through 2017.

So far, we are on track to meet the Governor's

Executive Order targets for infrastructure to support one million ZEVs by 2020 and for 1.5 million ZEVs on California roads by 2025.

Before I dive into inventory and infrastructure, a primer on charging stations is in order to get everyone up to speed on same page on terminology.

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AIR RESOURCES ENGINEER GOODBODY: Level one chargers deliver the same power as your standard 120 volt household outlet. They can be pedestal or wall mounted or simple convenience cord. The part that connects to a vehicle is a standard SAE J1772 plug. For battery electric vehicles, or BEVs, level one charging is best suited for home or other long-term setting. For plug-in hybrids, level one will meet most charging needs. Level two chargers deliver up to 240 volts, roughly the same power as your standard electric dryer outlet. All level two charges use SAE J1772 plug and can fully charge a 100 mile BEV in four to eight hours.

In the workplace and public settings level two chargers come in single, dual, and quad port configure reasonable expectations. DC fast chargers can fully charge most EVs in less than 30 minutes and are best suited for retail settings, destinations, and along highway corridors.

There are three predominant standards for fast charge connectors. The CHAdeMO standard used by vehicles like the Nissan Leaf, Kia Soul EV, and Mitsubishi i-MiEV is used by them. SAE combo standard is used on German and domestic BEVs. And finally, Tesla uses a proprietary connector and the Model S and forthcoming Model X.

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AIR RESOURCES ENGINEER GOODBODY: As you saw earlier today, the number of plug-in electric vehicles in California is growing steadily.

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AIR RESOURCES ENGINEER GOODBODY: So is public charging infrastructure. This time last year, there were approximately 1,000 public level two stations and 67 DC fast chargers. At the end of August 2014, there were over 4500 level two connectors at close to 1900 public charging locations and over 300 fast charge connectors at 177 locations.

We like to distinguish locations from connectors because location speaks to coverage within a certain area or micro region and number of connectors represents the number of vehicles that can be served at one time at that location. Now let's look at how infrastructure is divided among regions.

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AIR RESOURCES ENGINEER GOODBODY: This map divides California into geographic regions. The darker shaded areas represent the region with the most on-road PEVs. The blue bars represent relative numbers of public level two connectors in each region. And the green represents fast charge connectors. This table provides more detail on public station locations and connectors.

Not surprisingly, regions with the most PEVs also have the most public charging stations. The Los Angeles and San Francisco Bay Area regions have 75 percent of the PEVs and 73 percent of the public chargers. These communities have been successful at leveraging resources and competing for federal and state funding to build out their infrastructure networks.

The lighter shaded areas show us where more attention is needed. The ability to obtain detailed information on charging stations has improved tremendously over the last year, thanks to US Department of Energy's Alternative Fuel Data Center, or AFDC.

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AIR RESOURCES ENGINEER GOODBODY: AFCD's database and station locator provides the public fleets and policy makers with data necessary to make informed decisions. The AFCD provides station location, equipment type, and access details for alternative fuel stations throughout

the country. It's a great resource.

Data is available in five main sites and can be used by third parties to develop additional tools, resource, and analyses to continue the expanded deployment of alternative fueling infrastructure.

AFDC staff develop partnerships at local, state, and federal levels to ensure the data is accurate and comprehensive. The database continues to improve. Senate Bill 454 requires the submittal of California station information to AFCD, which ensures that California's station network is well documented.

Staff at CFDC also implemented automated daily updates of network stations and is working on adding the ability to search by DC connector type, get pricing information, and provide real time feedback. The AFCD station locator also has search options for hydrogen stations.

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AIR RESOURCES ENGINEER GOODBODY: Today, California has ten public retail hydrogen stations in operation, with most located in the greater Los Angeles and Orange County areas. By the end of 2015, we expect California's hydrogen station network to expand to 51 retail stations, thanks to continued funding from the California Energy Commission through the alternative and

renewable fuel and vehicle technology program, also known as AB 118 and AB 8. These maps show hydrogen stations that are in operation and under construction. While most of the stations will be in the greater Los Angeles and San Francisco areas, planned connectors station will allow for travel between northern and southern California and to Lake Tahoe.

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AIR RESOURCES ENGINEER GOODBODY: We can safely say that California is committed to supporting the growth of fueling infrastructure for ZEVs. California is making significant progress thanks to federal, state, and local funding and partnerships with auto makers, the California Fuel Cell Partnership, and the California Plug-In Electric Vehicle Collaborative.

Now I'll cover PEV infrastructure activities underway at the California Energy Commission.

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AIR RESOURCES ENGINEER GOODBODY: AB 118 and AB 8 program has an annual $100 million public investment fund to promote the development and deployment of advanced technology, low carbon fuels, and vehicles that will help the state achieve its greenhouse gas reduction goals.

Under this program, the Energy Commission has allocated 38 million in grants for the installation and

construction of over 8600 chargers to date. The most recent round of awards, which is largely coordinated with region PEV plans, included funding for a total 53 DC fast charge connectors at destinations, workplace, and corridor location.

CEC's 2014-15 investment plan allocates 15 million for charging infrastructure, which is almost doubled the previous annual allocations, sending a strong signal to the market and ample funding for leveraging other resources.

The CEC is expanding their scope of activities to include funding to assist with ZEV implementation and planning activities, coordination with PEV planning regions, clean cities, and other local agencies, and research on the PEV related issues such as battery second use and recycling and vehicle to grid.

The Energy Commission is currently working with U.C. Davis to develop a DC fast charger analysis to supplement the statewide plug-in electric vehicle infrastructure assessment.

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AIR RESOURCES ENGINEER GOODBODY: This report was completed in May of this year by the National Renewable Energy Lab for the California Energy Commission. The report provides a statewide analytical framework for

charging infrastructure deployment in California and how to achieve the ZEV action plan goal of sufficient infrastructure to support one million ZEVs by 2020.

It also provides conclusions and recommendations regarding PEV infrastructure planning and is useful to a broad range of stakeholders. This analysis will serve to inform the development of CEC's AB 118 investment plan and will help guide infrastructure development in these areas where more focus is needed. Currently, ARB and CEC have been working on planning and funding aspects of hydrogen infrastructure.

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AIR RESOURCES ENGINEER GOODBODY: About a year ago, funding for several important ARB and CEC programs was reauthorized through the passage of AB 8, which received the broad based support of many government and industry partners. AB 8 specifically allocates up to 20 million annually for hydrogen. It also requires ARB to annually review hydrogen supply and demand from light-duty vehicles. This annual review includes an assessment of geographical distribution of stations, fueling capacity, and fuel demand statewide and within geographic regions.

Hydrogen fuel demand is projected based on annual fuel cell vehicle surveys.

Finally, the review recommends numbers of

stations and general locations needed to meet known and projected demand and recommends technical requirements and operational standards for hydrogen stations.

In June of this year, ARB reported their findings and found that 51 stations planned for the state's fueling network provide sufficient hydrogen in almost all regions in the near term. While the state is showing commitment to advancing ZEV infrastructure, more work needs to be done.

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AIR RESOURCES ENGINEER GOODBODY: Given the recent fast paced growth of charging infrastructure in California, staff believes there is a lot more to learn about the value and potential for effective business models for the different types of charging infrastructure.

In addition to the ARB's and CEC's efforts to quantify ZEV fuel projected demand and availability, ARB staff has been evaluating PEV infrastructure from a different perspective by identifying ways to overcome barriers to infrastructure development.

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AIR RESOURCES ENGINEER GOODBODY: In January 2012, the Board directed staff to evaluate the development and usage of workplace and public charging infrastructure. In our approach to this evaluation, we are looking at

away-from-home charging infrastructure in terms of driver preference, charger usage, and convenience. From what we learn, we are identifying the types of charging infrastructure that support PEV adoption, increased zero emission miles, and increased use of low and zero emission energy sources for transportation.

Staff's finding will complement the efforts underway at CEC by identifying successful strategies for public charging infrastructure.

Now I'll discuss what we've learned, starting with where people do most of their charging.

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AIR RESOURCES ENGINEER GOODBODY: By far, home and workplace charging play the most significant role in PEV adoption and overall electric miles. Today, residential charging accounts for roughly 80 percent. For most people, home charging is easy, and some air districts and utilities encourage it by offering home charger rebates and low off-peak electricity rates.

The challenge lies in providing overnight charging to people who don't have access to charging at home, like those living in multi-unit dwellings. Resources developed by the California PEV Collaborative assist tenants and property managers in installing workplace chargers in apartments and condominiums.

Workplace charging on average accounts for 15 percent. In some instances, HOV lane access reduces worker commute times so employers see an advantage to encouraging PEV adoption by providing charging and parking incentives. Workplace charging also opens the market to long-distance commuters and those without home charging.

It also helps encourage PEV adoption in that it can serve as an informal showroom to potential buyers. Developing and expanding workplace charging in the underserved areas could help spur PEV adoption there. So anecdotally, we can say that workplace charging increases PEV adoption. But what about electric miles?

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AIR RESOURCES ENGINEER GOODBODY: Certainly, overall electric miles will increase with increased PEV adoption. The question is what affect does workplace charging have on the electric miles of individual vehicles. Workplace charging increases individual electric miles when used by plug-in hybrid drivers, BEV drivers with long commutes, and people who don't have charging at home.

Fortunately, when all the chargers are in use, it can have a reverse effect if drivers feel it's too much of a hassle to find an opportunity to plug in. Also, when workplace charging is free, it encourages some people to

shift their charging from home to work, thus having no effect on their individual electric miles. Requiring people to pay for charging reduces congestion, thus making chargers available to plug-in hybrids and others who need to charge to complete their journey, thereby increasing individual electric miles. We are learning that the requirement to pay for charging and price definitely affect the decision-making process.

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AIR RESOURCES ENGINEER GOODBODY: Because roughly 95 percent of charging is done at home and work, price plays an important role for deciding where to plug in.

At home, data shows that most consumers will program their cars to start charging when off peak rates are in effect. And most will not charge when on peak rates are in effect, unless they absolutely need to.

In the workplace and in public settings, people are comfortable paying around 15 cents per kilowatt hour or a dollar an hour for level two but not much more.

Beyond price, convenience is the next most important factor. Most drivers are willing to pay more for convenience of fast charging considering how infrequently they need it. Still, most charging today is done at home, then at work. And charging off peak is still viewed as the cleanest and cheapest way to charge

from both an energy supply and air quality perspective.

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AIR RESOURCES ENGINEER GOODBODY: For the past few years, utilities have been using low time of use rates to encourage super off peak charging from 12:00 to 6:00 a.m. This is time when demand on the grid is lowest and peaks and renewable wind generation occur, so charging vehicles during use time captures wind power that may otherwise go unused.

As new solar power comes online within the next five to ten years, utilities are concerned that renewable energy generated during the day will exceed demand, making a strong argument for daytime charging. Then in the evening when grid demands peak, connected electric vehicles could send energy back to the grid and lessen the need for peaker plants. This concept of linking the charging and discharging of plug-in cars to the electrical grid operation is referred to as the vehicle grid integration.

The California Public Utilities Commission, California Independent Systems Operators, or CalISO, the Electric Power Research Institute, and several utilities, auto makers, and other stakeholders are studying the value and feasibility of VGI. San Diego Gas and Electric is demonstrating how dynamic pricing used at their workplace

chargers and linked to grid supply and demand can be used to influence when people charge. We are still in the early stages of understanding VGI and the ways that PEVs can become a part of the small grid ecosystem.

But the potential for plug-in vehicles to play a role in maximizing the utility of renewable energy is significant and one that ARB will be watching closely, especially in the context of maximizing greenhouse gas emission benefits from the system as a whole.

However, until we can better define both the value and beneficiaries of VGI, we mostly see challenges in developing sustainable business models for charging infrastructure.

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AIR RESOURCES ENGINEER GOODBODY: Drivers have several options for charging their cars, and need, price, and convenience will affect where they choose to plug in. Establishing a business case for public charging in different settings is not simple. But until self-sustaining business models are identified, it will be necessary for the state to support public charging infrastructure.

Staff has been looking at charging station models in use today and focusing on identifying features that make them economically and environmental sustainable. In

the next few slides, we will look at public parking structures and corridor charging.

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AIR RESOURCES ENGINEER GOODBODY: Parking structures that can serve many users are ideal locations for charging stations. The County of Los Angeles, for example, is focusing on county hospital parking lots for charging station development because these locations get a lot of traffic and can serve multiple users, including hospital staff, visitors, and people who live nearby who don't have home charging. L.A. County is pursuing this approach to stir PEV adoption in disadvantaged communities. Getting the right balance of level one and two is also important. For example, most of the charging needs at airports and transit hubs can be met with level one, but some level two chargers are needed to accommodate shorter stays.

Some contractors are planning for growth by installing sufficient charging infrastructure for today's needs and laying the groundwork to lessen the cost of adding more chargers in the future. They are installing charging stations with dual and quad connectors like the one shown here to maximize the number of connected vehicles per station. In the future, as vehicle to grid technologies advance, there will be a strong advantage to

having a lot of connected vehicles. The approach to corridor charging is very different.

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AIR RESOURCES ENGINEER GOODBODY: Corridor charging will play an important role in PEV adoption, even though it represents a small percentage of the average charging profile. The presence of fast charge stations in highly visible locations exposes PEVs to people who are otherwise unaware and helps them answer the question where would I fill up.

Last May, we held a meeting with key stakeholders to explore the subject of charger usage and preference. Here are a few of our key learnings. According to auto makers and network providers, fast charging is always preferred, except at the workplace. Time to charge is the number one concern, but convenience and price are always important.

The fast charge connectors that are used most are co-located with retail or dining, giving the drivers something to do while they wait. For longer trips, knowing there is a fast charger en route gives drivers the confidence they can make the journey.

The map on the left prepared CEC shows locations of existing and planned fast charge stations in California. These chargers will connect the Bay Area to

Santa Rosa, Napa, Davis, Sacramento, Santa Cruz. They also connect L.A. to Orange County, San Diego, and the Inland Empire. It is our hope that DC fast chargers along I-5 and Highway 99 will help initiate EV adoption in Redding and the San Joaquin Valley and connect California to Oregon.

While we touched on it earlier, the question surrounding business case for public charging remains uncertain.

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AIR RESOURCES ENGINEER GOODBODY: Owners and operators of public charging venues face a delicate balancing act when tying to recover some or all of the cost associated with PEV infrastructure. Success depends on high usage. Usage depends on location and price. And price affects usage. Even in early adopter areas where most charging infrastructure is well used, cost recovery options such as subscription fees and direct user fees are alone not enough to recover all of the costs.

Revenue generated for the site host, which occurs when people shop or dine while they're waiting for their car to charge, can encourage the host to share in the investment. Potential revenue sources associated with dispense of low carbon or renewable fuels are also worth exploring. In the underserved areas, the business case is

more challenging until PEV adoption catches up with the rest of the state. Regardless, establishing public and workplace charging infrastructure will be important if we want to spur PEV adoption in these areas.

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AIR RESOURCES ENGINEER GOODBODY: In conclusion --

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AIR RESOURCES ENGINEER GOODBODY: -- based on what we see today, public charging and hydrogen fueling infrastructure is on track to support our goal of achieving 1.5 million ZEVs by 2025. The state and its partners are making significant progress with investments in ZEV infrastructure.

While our achievements are most notable in the San Francisco, Los Angeles and San Diego areas, we need to use what we have learned to advance ZEV infrastructure in the underserved communities and regions. Similarly, self-sustaining business models are most likely to occur in these same areas with high ZEV adoption rates. This is why continued state support is necessary to advance ZEVs beyond those so-called early adopter regions.

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AIR RESOURCES ENGINEER GOODBODY: From here, we will consolidate our findings on PEV infrastructure and

release our report in early 2015. The report will expand on the topics presented today and will also include trends in equipment and installation costs and the exploration of potential revenue streams. The report will detail the research underway to understand the value chain of vehicle to grid integration and how to design of parking structures can support it.

Finally, the report will include the status of relevant codes and standards, including the interoperability standard required under Senate Bill 454.

So expect to hear from us again this summer with an updated information on fueling infrastructure for both plug-in and hydrogen powered electric vehicles.

This concludes my presentation. Thank you.

CHAIRPERSON NICHOLS: Thanks. We have no witnesses who signed up to speak on this item.

If any Board members have questions or comments -- yes.

BOARD MEMBER GIOIA: Just one comment. Appreciate the presentation.

One of the approaches we've taken in the Bay Area, the Bay Area Air Quality Management District, has come up with a model ordinance for local jurisdictions to adopt with regard to new development. Typically, when cities and counties approve new development, there are

requirements for parking lots, like the number of trees per parking space.

What this model ordinance does is actually look at how to require charging stations. When a shopping center is built, requiring the development to put in a certain amount of charging stations.

So I'd like to think about how we, as an agency, can also look at incentivizing that. And I mean, this is obviously done at the local level through land use regulations. So it becomes a legal requirement on developers when they build developments of a certain size. Seems to me that makes a lot of intuitive sense of how we can sort of get more charging stations out there with a shared cost.

For many businesses, they realize that the development is more successful when they're able to attract more customers who are going to stay and chose to go to particular shopping centers where they can charge their vehicle.

It's a model ordinance. And there is a lot of education going on with planning departments, planning commissions to get the word out about that.

So I'd like to just raise that and how I think we should take some role to be able to encourage that as well.

CHAIRPERSON NICHOLS: Yes. I agree with that.

Before the staff responds, I was going to mention that -- although they didn't sign up to testify, and maybe we didn't ask them to testify, the Plug-In Vehicle Electric Collaborative, of which we are a charter member, along with the Energy Commission, the Public Utilities Commission, a number of other agencies and all the OEMs and all the air districts, at least the large districts, have been working on some of these things as a group. They have former State Senator Chris Kehoe is their Executive Director of ARB has lent some staff to this organization and identifying obstacles and opportunities to move on issues like workplace charging and model ordinances. This is one of the things that's within their charter.

I saw Josh Boon who is the Executive Deputy here. I don't know if he wants to stands up and say anything about this. But this is exactly the thing the Collaborative was created to do. So I just want to make sure people are aware of it and that they know that you guys are there to exactly to carry out these kinds of functions.

MR. BOON: I hadn't planned to say anything, but happy to speak.

CHAIRPERSON NICHOLS: Just come up and introduce

yourself. Josh is the senior ARB staff member who is working on this project.

MR. BOON: Good afternoon. I hadn't planned to speak. But I'm Josh Boon. I work for the California Plug-In Electric Vehicle Collaborative. It's great, Leslie, to hear your presentation on PEV infrastructure.

This, as Chairman Nichols said, is something we're very interested in and something we're working on actively, both on workplace charging issues, as well as issues around MED charging infrastructure. We are a resource available to you all. So please come introduce yourself and happy to talk. Thanks.

CHAIRPERSON NICHOLS: The Bay Area is also very active on this group as well. I think it's important to realize that ARB sometimes works better in terms of getting information out to the local agencies, especially when we do it in partnership with other people. And we found that although the fact that we have all the regulatory authority makes people pay attention to us which is good. Sometimes it also creates a certain resistance. So --

BOARD MEMBER GIOIA: Maybe a state law that requires a certain amount of charging stations per parking station.

CHAIRPERSON NICHOLS: Good. Okay. Thank you.

Any other thoughts, comments?

Judy.

BOARD MEMBER MITCHELL: One thing that the staff report touched on, which I think is noteworthy, is that the theoretical charging that we thought was going to occur, which would be at home at night, may not actually be the way that it will turn out because the utilities are recognizing there could be excessive renewable power during the daytime hours.

So I know that Southern California Edison is looking to get permission from the PUC to install workplace charging stations that could be used during the day. And you know, that is contrary to the way we thought it would originally work. We thought everyone would charge at home at night. But it goes to show some of the things we thought would happen may not happen.

So I'm glad staff has touched on that. That's very interesting aspect of charging.

CHAIRPERSON NICHOLS: It's definitely evolving.

Mr. Roberts.

BOARD MEMBER ROBERTS: Thank you.

Putting these in is like the first step. And it's managing them, especially if you're talking about the workplace. I don't know if there is a site of information, but there is an awful lot of questions that

come up when you talk about how do you get not just one car parking there all day, but you get them to rotate in a fairly frequent rate. I mean, you're not going to have a charging station at every space. And some of the issues, even for a business, how do you get them to rotate with some frequency? And is it through a pricing mechanism? But I'm just thinking for some of the business owners and some of the people that they want to put to employees who have these questions if there is a site that they can go to that maybe discusses some of the options to give them a comfort once that they put them in, they'll actually be able to manage these in some successful way.

BRANCH CHIEF BEVAN: Analisa Bevan.

There are a couple of strategies that public parking structures are using. The first is pricing, that it costs more to stay there longer. And the second is parking time limits; only allowing these public charging stations to be parked at for a period of time, two to four hours, after which a ticket is issued or the car can be towed. So those are two strategies.

But I like your suggestion of making examples of those strategies available in a centralized location that folks can come to to establish their policies.

CHAIRPERSON NICHOLS: I know in workplace charging some of our more advanced tech companies have

looked at aps to tell people when it's time to move their car off the charger so somebody else can use it, those kinds of things.

All these protocols are just coming into existence very quickly because of the market for electric cars. So they're developing in tandem with each other really. And I guess the point would be that we could be helpful in both raising the questions, understanding the questions, and helping to get out information about best practices. We may not actually have to, you know, dictate how it all works out because people are moving faster than we can.

BOARD MEMBER ROBERTS: And that's really where I was heading is how can we get out the best practices. We talk about towing, trying to tow somebody in a parking structure, it isn't going to happen. And if you try to run a business, you don't want to be towing people. So you know, I mean, we've got to explore some of these things.

BRANCH CHIEF BEVAN: That's where pricing --

BOARD MEMBER ROBERTS: I think we need to have some thoughtful suggestions that we can help lead people to, especially if they're making those decisions, do I want to put these in? Or is it just going to be a supreme headache because somebody is going to be parked there all

day.

CHAIRPERSON NICHOLS: Okay. I think we've raised a bunch of the issues here. And perhaps it's time to accept this report and be aware of the work that's going on, there is a lot of good work going on, and move along to our next item on the agenda, which is the ZEV regulation modification.

So this one is another regulatory action item. Before we begin, I want to acknowledge that it's been a year. It is the one year anniversary of the signing of the Governor's Memorandum of Understanding and the commitment to coordinated action with our partner states to ensure our successful zero emission programs in all the member states.

We have a number of state representatives here today, and I'm pleased that we can acknowledge them and invite them to be part of this discussion. So I want to invite up to the podium David Cash from Massachusetts, Anne Gobin from Connecticut, Kathy Kinsey of Maryland, Ashley Horvat of Oregon, and Christine Kirby of Massachusetts.

I guess the plan was for you all to sit where?

(Whereupon an overhead presentation was made as follows.)

MR. CASH: Thank you very much, Chair Nichols.

It's great to be here.

I'm David Cash, the Commissioner of the Massachusetts Department of Environmental Protection. And I've had wonderful partners with California and many other states on lots of different efforts this. And this is another in the series of efforts.

In fact, I was asked to talk at a very high level of how this program fits into other climate and clean energy related programs. And I think partly that's important to start at that level because of the commitments that we're making as state's regulatory commitments and commitments we're making to the efforts we're going to make to the auto makers. I think those are shown to be more clear when they're seen in the context of the greater efforts that each of our states are making.

So if I can have the first slide, please.

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MR. CASH: So this graph is of the Massachusetts clean energy and climate plan goals, but it's going to be similar to many other states. So I want to put that in that context. I know California has extraordinarily aggressive goals economy wide and has put in place a nation leading trading program. This shows the efforts of Massachusetts as many states in the collaborative have done. We've tracked our greenhouse gas emissions

historically. That's the blue-ish line to the left. And we have a plan to get to aggressive reductions, which is, in our case, 25 percent below 1990 levels by 2020 and 80 percent by 2025, very similar to other states.

And I just want to point out that as other states have done, we have different wedges or buckets that we're getting these reductions in. The first one that you see there, the wedge that's between business as usual and buildings is certainly energy efficiency, which we are all working very hard on. In fact, I think the five states that are represented here, including California, are all in the top five states for energy efficiency according to ACEEE's latest ranking.

So it's clear that all of these states are devoted to and have put a huge amount of resources into getting emissions reductions and can see that on the energy efficiency side. The next wedge is on renewable energy. And the third wedge is the one we're talking about, although there's obviously transportation. We're required to reduce about 7 1/2 percent of our whole -- 25 percent from transportation sector.

The light blue line where it says actual emissions is the path that we're on. We're clearly on the path to get to our reductions and our participation in the ZEV program and the MOU is part and parcel with that.

Next, please.

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MR. CASH: Another piece that's very important in the context -- and again, I know California has been a leader on this -- is the importance of linking our efforts in the transportation realm to the clean energy sector growth and job growth realm.

In Massachusetts, this data shows in clean energy sector. This is across all value chain. So this includes electricians that install solar. This includes architects and designers. It includes the bottom one is A123's, a battery manufacturer in Massachusetts. Energy efficiency work like the house blower test. These are all jobs that keep energy dollars in Massachusetts. And we've seen greater than ten percent growth per year in this sector over the last couple years.

So again, important piece of this. I know it's important to drive into the details of the difficulty. For example, Supervisor Roberts was just talking about to get any of these kinds of changes, you've got to make sure that companies and people are comfortable with making these things happen. I'll get to in a moment.

The last slide shows this link between environmental protection and economic development. Again, I think many of the states show similar graphs. And just

I want you to concentrate on the top line and the bottom line. The bottom line shows the greenhouse gas emissions in Massachusetts from the power sector, which has declined by 40 percent over the last ten years, while our economy has grown by 70 percent. I think this puts a lie to the point of really aggressive environmental protection leads to slow down economic growth. And both my example of job growth and this chart should show otherwise.

I think one of the things that you're going to hear about as we go from this level to the lower level of how to get things done -- and you'll hear from some of the other speakers of what we're putting in place to make that happen with MOU states as we collaborate -- is down to the level of the showroom floor of a car dealership where people are going to make the decisions to purchase the vehicles that we're all saying are so important.

I know although I missed the first part of the Board meeting this morning where some of the manufacturers were talking about lack of purchase of these vehicles in this state, I think it's obvious that there isn't availability. You'll see some of the data from this in Massachusetts, but it's true in all of the states that are part of the MOU.

And I will say that at the lunch break, I made some phone calls back to Massachusetts where I just called

some of the bigger dealers in Massachusetts just to say I'm looking for an electric vehicle. What do you have in stock? This was GM, Chevy, Honda. None of them had any electric vehicles in stock. In fact some of the folks on the floor didn't really understand what I was talking about. And they said, "What do you mean?" And I said, "I can get some information for you." So there's clearly a disconnect.

I know in Massachusetts, as in Maryland as in Oregon, as in Connecticut, there are a variety of different kinds of incentives in place, infrastructure in place that we really should be moving forward. So when I walk into a showroom and I'm looking for a four-door car for my family, I should see that shiny EV and get a sales pitch about I get rebates and I'll see savings over time. I'm not sure that's happening.

We're talking about self-fulfilling prophecy of saying we can't make these sales. Efforts are not going into making the sales, of course, you're not going to make the sales. That's a pitch for that. We'll hear more detail about that from other states.

I believe Connecticut is speaking next. Thank you very much. I'm happy to take questions.

CHAIRPERSON NICHOLS: Thanks, David.

Okay. Ms. Gobin.

MS. GOBIN: There is a video from my Commissioner I'd like the to have played first.

(Whereupon a video presentation was made.)

CHAIRPERSON NICHOLS: That's very nice.

MS. GOBIN: I just want you to know how committed my Commissioner and Governor are. And a lot is going on in Connecticut and the visual was the best way.

Last October, the Governors of California, Connecticut, Maryland, Massachusetts, Oregon, New York, Rhode Island, and Vermont signed an MOU committing our states to work together to put 3.3 million ZEVs on the road by 2025.

The ZEV MOU directed the signatory states to develop an action plan to accomplish the goals of the MOU within six months. The action plan was released in May and lays out concrete steps to make it easier for our citizens to own and operate ZEVs and to assure growth in ZEV sales that meet or exceed the program requirements.

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MS. GOBIN: The plan outlines eleven categories of priority action, such as developing the fuel infrastructure to support ZEVs, promoting the availability and effective marketing of ZEVs, providing consumer incentives to enhance ZEV ownership experience, increasing ZEVs in public and private fleets, promoting workplace

charging, and other actions intended to accelerate the adoption of ZEVs.

In the development of the multi-state ZEV action plan, the ZEV MOU states met and worked very closely with the automobile manufacturers through a series of work group calls to develop recommendations for the plan. We also held a workshop to solicit input from electricity providers, public utility, and service commissions, charging infrastructure providers, academic institutions, and the nonprofit community. The partnerships formed and the information shared during the development of the plan will be critical in achieving the goals of the plan.

Through the new collaboration for ZEV success that kicked off in November of 2013, we have been in frequent contact with the auto manufacturers, including an in-person meeting last month. We made plans to get together again in April and to check in periodically between now and then.

The development of our action plan also led to forming important relationships with the automobile dealers in our states. In addition, we have continued to learn from our academic partners, especially the U.C. Davis folks.

We built strong relationship amongst and between all the counterparts in the ZEV MOU states and have become

great resources for one another.

We're also engaged with our state colleagues and key partners in our agencies of transportation, in our public utility regulation, and fleet management.

The Section 177 states are very appreciative of California's leadership role in developing the ZEV market and thank the ARB staff for sharing with us their expertise and many lessons they have learned along the way. We look forward to continuing to work with the California staff.

The release of the ZEV and multi-state action plan renewed our Governor's commitment to accomplishing the goals of the MOU and it's spurred the development of state-specific ZEV action plans.

We are committed to make significant progress on each of the 11 priority action areas over the course of the coming year and to increasing with our partners the ramp up of ZEVs available in our states and the uptake of cars on our roads.

But I ask that you note there is no requirement in the current regulations to place the battery electric vehicles in our states. And we're preparing for when those requirements go into place.

Kathy.

CHAIRPERSON NICHOLS: Okay. We move on now to

Maryland.

MS. KINSEY: Thank you, Chairman Nichols and members of the Board. It's great to be here today to talk to you about what we're doing in the Section 177 states.

As Anne said, the release of the ZEV action plan this year, this past May, was a really important accomplishment for all of us in and of itself. But there have been a lot of other very positive developments in our states, which I think very strongly demonstrate our commitment to expansion of the ZEV market, even in the face of shrinking state budgets and declining federal funding for our regulatory programs.

So our states are, for example, investing in and offering financial incentives to support expansion of the public and private charging infrastructure in our states. A number of our states now offer some form of financial incentive for the purchase of zero emission vehicles. Our states are adding zero emission vehicles to their public fleets. Some are moving to establish state fleet ZEV purchase policies and mandates. Some of our states have implemented programs to recognize and award dealerships that are ZEV champions and doing a great job promoting and selling zero emission vehicle cars. We're promoting workplace charging through outreach to employers and workplace charging workshops. Massachusetts, for example,

had a great workplace charging workshop.

So this, year Maryland is going to emulate their approach to workplace charging. And we're planning on holding one of our own. All of us in all the states are working with our stakeholder coalitions to accelerate the expansion of the market. And we are all holding outreach and education events for consumers to give them an opportunity to learn about and drive zero emission vehicles.

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MS. KINSEY: So we heard from the automobile manufacturers this morning in one of their slides. They characterized our incentive programs as minimal, as I recall. And we've had in Maryland incentive programs in place for a number of years. And so this year our Legislature focused on reconfiguring and enhancing our financial incentive programs for both the vehicles and the charging infrastructure. So we increased the available tax credit for purchase or lease of a plug-in vehicle from $1,000 up to $3,000. And I believe that is more than what California is now offering.

And we also changed the whole framework for the credit to tie it to the battery capacity. So that's been a great enhancement in our program.

And then the other thing we did is with our

incentives, we have an existing incentive program for charging stations as well. So we enhanced that incentive program by converting what was the tax credit for purchase and installation of charging equipment to a point of sale rebate, which research now indicates is really a much more effective approach, at least with charging infrastructure and probably also with cars as well.

And so also at the same time, we increased the size of the credit for individuals from 20 percent of the cost up to 50 percent of the cost. And we increased the caps on individual installation to $900 for individuals, 5,000 for businesses, and $7,500 for our gasoline retail stations who are all expressing some interest in installing charging stations. Really sort of thinking proactively about the future.

So we in Maryland have also had HOV lane access for some years for zero emission vehicles. And this year, we are now exploring a reciprocity agreement with our sister, neighboring state Virginia, which also offers access to zero emission vehicles. So we're hoping to have that in place within the next year.

And so you're going to hear from Ashley Horvat from Oregon in just a minute about infrastructure developments in our states. But I want to mention two really significant infrastructure developments that we're

doing in Maryland this year. We already have more than 500 public charging stations in our state, Level I and Level II. And so we have now set aside one million dollars from a settlement of a major air pollution case to invest in the development of a statewide network of fast chargers because we really feel we need to start building out that fast charge network. We're using these funds to leverage private investment.

And we issued a request for proposals earlier this spring, and we had a great response. We received multiple proposals. So we expect to be awarding grants by the end of this month. And we hope to have this new network of perhaps as many as 20 fast chargers, which it's a start. We need more, but it's certainly a good start. We hope to deploy them by the end of 2015. And we're also -- we've also dedicated another one million dollars to build out charging infrastructure at our metro subway stations and our train stations in the state as well. So thanks again for the opportunity to be here today. Very much appreciate it.

And Ashley.

CHAIRPERSON NICHOLS: I would just note Maryland has been active in bringing in electric vehicles for a long time, many years and has seen a lot of results. So just in case anybody is complacent about California's

leadership, I want you to know that other states are not only nipping at our heals, but possibly even exceeding us in some of their efforts. And Oregon is one of those because they have an EV czar, and here she is.

MS. HORVAT: That used to be a good term.

Thank you for having me. As Kathy described, I'll be focusing on infrastructure. But it's clear that our leadership in each of our states has been tremendous. We've been busy planning and investing in charging infrastructure. Like Rhode Island has recently installed 50 EV charging stations throughout the state. Connecticut, Massachusetts, and Vermont are offering grants for public EV charging station installations and Maryland, New York, and Oregon are offering tax credits for EVs. As a result, the number of charging stations in our state continues to grow at a rapid pace.

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MS. HORVAT: Like you see on the slide, the trajectory of publicly-available charging stations is growing steadily. And Kathy's point, I would not call this minimal. We've added more than 3,000 public stations over the past three years, and the number of private stations at workplaces, hotels, et cetera, is expanding as well.

In addition, many of our states have initiatives

to address range anxiety, such as Charge New York, an initiative to create a statewide network of up to 3,000 public charging stations and workplace charging stations by 2018. Vermont's Green Corridor, which connects Montreal to Montpelier and beyond with the series of charging stations. And of course, the west coast electric highway, which I'll talk about more in a moment.

While we don't have time to talk about the many different efforts underway in our states, by way of example, I'm going to highlight some of Oregon's initiative aimed at expanding charging infrastructure. And I just want to note because I'm listening to all of the states, Oregon does care about things other than infrastructure. I know you've asked me to speak a number of times about the west coast electric highway. Hopefully, I haven't worn my welcome out yet.

But we do -- it's part of a larger EV road map. So you can see by the bullets here -- I really minimized it. But it's all about visibility, experience, exploration policy. I'm going to focus on the infrastructure part of that.

Creating a smart, cohesive, and coherent charging network is critical if we're going to be ramping up to 3.3 million ZEVs by 2025. So hearing about what Maryland is doing creating a statewide approach I think is really

helpful to advancing EV adoption. And keeping with Oregon's no limits EV travel strategy, meaning we don't want the car to just be limited to the city and in five mile commutes because we think we can improve emission reduction if we get the car out beyond the city. We began the process to create a well thought out infrastructure landscape in 2010. Since then, we've deployed a fast charging network, the west coast electric highway, which now connects 95 percent of our state's population.

We're also the number one for DC fast charger per capita, as per Plug Share. And the Nissan Leaf is actually the volume leader month to month in the Portland region, which many consumers have cited as a decision making element.

I'm just going to note that last year I crunched the numbers with the OEMs in several different sources and the Leaf actually out sold all other Nissan models in the Portland region for the cumulative of the year.

So the only -- I should say the only model was the Ultima, and it was only about 200 that we were trailing on.

And what I wanted to just mention in my prepared remarks, but just from hearing today, one of the biggest things that we're noticing in Oregon is people become used to the idea that we have that infrastructure and are

assuming that all the cars connect to that.

So one of the questions that we're getting are people that are coming in with some of the newer models asking, okay, do those stations have SAE combo charger as well as CHAdeMO. Often, they don't because it took longer to get the standard. So it think it's going to impact adoption in Oregon at this point.

The west coast electric highway network with 44 charging stations -- we had originally 43, but we just added one more before the end of the year. We set the stage for establishing new partnerships for the next strategic roll out. We're working together with the private sector and utilities to continue our roll out as more EVs are purchased. Rather than going it along, we're collaborating to spend wisely, save money, and create a user-friendly experience.

Just like Oregon, all the others ZEV states cannot be the only sector supporting the EVSE requirement. It's clearly going to take several layers of contribution to match up infrastructure with our bold aspirations for EV adoption. In that vein, federal agencies like the US Department of Transportation have stepped up to the plate. They've actually asked Oregon recently to convene a nation-wide effort to get states together throughout the nation to encourage EV corridor travel in most states.

This helps augment our efforts, and it also supports the tremendous effort the US Department of Energy has put into this sector over the past few years and even further back.

Other unexpected partners in this effort have cropped up, like the National Park Service. I've been working actually closely with them to explore further partnerships and collaborations to encourage sustainable travel throughout the country to national parks in order to improve air quality and reduce emissions to our parks.

What we've all done, while significant, is only the beginning. We heard a lot about dealers today. And I would just mention that I traveled back and forth between Portland and Seattle quite a bit. It's a big difference. You think Oregon is a leader state. If you go into Washington in the dealerships, the whole back part of the dealer is covered in Leafs. When you type into Cars.com, the number of Leafs, for example, that are available, there is over 400 in the Seattle metro region and Portland is only 29. So that just tells you how many cars are out there and what people are -- consumers are seeing beyond the early adopters. That's just one thing I'm concerned about and want to make sure when we move further that doesn't happen in Portland.

So we need to collectively respond to the market demand to ensure the movement beyond early adopters

transpires smoothly and rapidly. We can't have lines for charging, because I think that's going to be a huge barrier to adoption.

And with that, I think that concludes my remarks.

CHAIRPERSON NICHOLS: Thanks very much. And I will no longer ever refer you as a czar. You're a chief electric vehicle officer.

MS. KIRBY: Good afternoon. My name is Christine Kirby. I am not an EV czar.

It's great to be back in California. We escaped in the northeast a big rain storm. It's great to be back in southern California.

So we heard from the panel on a number of issues. I'm going to cover market development. And hopefully that will address some of the issues that we heard early this morning and provide more context.

Due to the efforts of the 177 states in California, we are definitely seeing sales of plug-in vehicles increase in our states in California. Sales of plug-in vehicles grew from about 52,000 in 2012 to 96,000 in 2013. As we heard today, sales over a quarter of a million.

I want to give a shout out to some folks here from Georgetown Climate Center. They have been working with the transportation climate initiative. And they can

definitely Attest that the northeast has an uptick on EVs on our roads in the transportation corridor climate emission states.

The total number of plug-in vehicles on the roadways increased by roughly 85 percent over the last twelve months. And in Massachusetts, we've had over 132 percent during the same period. We rolled out an incentive program for consumers in June. And we're seeing that number increase over the last several months.

The increase is a strong indication that consumer acceptance is growing in our states. With the rising number of EVs in our states, more and more people are coming familiar with ZEV technologies and their benefits, either from friends, colleagues, or other members of their family.

In consideration of the growth of the ZEV market and 177 states, we need to consider a number of factors. When its comes to the sales of plug-in vehicles, the OEMs are often quick to compare the sales of California in the northeast. And I would say this is premature for a number of reasons. First, by design, the compliance flexibility in ZEV requirements cause disparity in the ZEV markets between the California and the northeast states. For instance, the travel provisions waives the obligation of manufacturers to place vehicles in the 177 states.

Notably, as Anne Gober mentioned, even when the travel provision for battery electric vehicles ends in model year 2018, manufacturers may continue to meet their ZEV obligations in 177 states without actually placing ZEVs in our states. They can travel credits from fuel cell vehicles to the northeast states in Oregon. And they can also use a large number of banked credits. They have amassed these credits over many years. We heard this morning that some of the manufacturers are needing to use banked credits And that is not the case at this time.

Second, it's clear that consumer demand is growing in our states, but sales are constrained by the limits on production and the availability of vehicles for sale in our states. In some cases, OEMs have announced they've placed a cap on production, even if there is a greater demand for those vehicles.

Third, there are a number of so-called compliance cars that are only available for sale in California and sometimes in Oregon, such as the Fiat 500E, the Toyota RAV4, which from what I understand isn't for sale in California anymore, the Chevy Spark EV, and the Honda Accord plug-in.

One thing I will note, it was very exciting to see some of those vehicles at the showcase because we don't see those vehicles.

Currently, there are 11 ZEV models on the market. Of these, four models are compliance cars that are not available for sale in the northeast. On the other end of the spectrum, there are three models: The Nissan Leaf, the BMW I3, and the Tesla Model S. These are widely available for sale in the northeast. And we're seeing more and more of those enter the market, particularly in Massachusetts.

To demonstrate the availability, the chart you see here focuses on the five remaining models. We focused on these models because they are described by the manufacturers as being available for sale in our states, but they're not always readily available. Commissioner Cash spoke of the calls he made at lunchtime to mass dealers. To further illustrate his point, we used a popular website to look at the availability of ZEV models within a 30-mile radius of the largest cities in the ZEV MOU Section 177 states. As you can see here, not one of the five models was available in all the cities. In Baltimore, we found only one model available. And in Boston, there were no Honda Fits, smart electric drives, or Mitsubishi IME, and only one Ford focus electric.

And both Maryland and Massachusetts, as you've heard, have consumer rebates in place. And to further illustrate the point, in Burlington, Vermont there were

none. You get the picture here.

We recognize this information is not definitive as a snap shot in time, but it is representative of what our car buyers are experiencing. Most car buyers have a limited amount of time they are willing to spent shopping for a new car and cannot afford to sit on a waiting list to buy a new car. When plug-in electric vehicles are not readily available for potential buyers to sit and test drive and buy at nearby dealers, they're undoubtedly missed opportunities for sales.

It's great to sit in those vehicles today. I learned a lot. And the vehicles are very attractive when you're able to see them up close.

All states have done a lot already and are committed to do more. The automobile manufacturers ultimately hold the key to our success. Therefore, we call than them -- this is reiterated in the ZEV MOU action plan -- to produce and bring to our states a full range of zero emission vehicles, aggressively market those vehicles, and make them readily available for sale in our states. We recognize that the automobile market in the northeast is different than California's market. And we challenge the OEMs to offer for sale, market, and again make them readily available.

Before we go to our final video statement from

Secretary Markowitz of Vermont, we'd like to thank you for the opportunity to be here today. The state's over the past years have collectively made a lot of progress since we were here about a year ago. And we look forward to working with you, the manufacturers, the infrastructure providers, and other key partners to build a robust ZEV market in all of our states and across the country.

Thank you.

CHAIRPERSON NICHOLS: Thank you very much.

I think you can see based on the five officials who have been here with us just now that we have active partners here in the other states. And while California may be the bigger market, we're not necessarily the most active in all areas. These folks are committed and determined, and they're doing a lot. In some cases, really extraordinary work based on the size of their states.

ECARS DIVISION CHIEF HEBERT: There was one more video from Vermont.

CHAIRPERSON NICHOLS: Oh. I'm sorry. Okay.

(Whereupon a video presentation was made.)

CHAIRPERSON NICHOLS: Thank you. Do we have any more messages?

I was with Deb Markowicz earlier this week in Washington, DC, at the Advisory Board meeting for the

Georgetown Climate Center. And she's just as energetic and charismatic in person as she is in the video, if not more so. Clearly, Vermont is very committed.

So let's get back to what we actually have to do here at this Board meeting. It's clear from the impressive display outside this venue and from the sales figures that we've been hearing about that there is a strong interest in and a lot of adoption of these technologies. Our zero emission vehicle regulation has been a key driver for the introduction and deployment of the vehicles. Modifications to the regulation can provide flexibility for auto makers without compromising the vision that Governor Brown has laid out for one and a half million zero emission vehicles on California roads in 2025. These regulations are complicated. Sometimes I think overly complicated. But we've worked to adjust them because our ultimate goal is to get the vehicles on the road. That's what we're here for.

So with that, I will turn it over to Richard Corey to introduce the item.

DEPUTY EXECUTIVE OFFICER COREY: Thank you, Chairman.

The last October, the Board directed staff to review how the regulation effects intermediate volume manufacturers transition into large volume manufacturer

status in the 2018 model year and returned with a recommendation that takes into consideration that there are important differences between large and intermediate manufacturers. Staff proposal provides additional flexibility so that all manufacturers are successful in commercializing in ZEV technologies.

With that, I'll introduce Mark Williams of ECARS Division to begin the staff presentation. Mark.

(Thereupon an overhead presentation was presented as follows.)

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

Good afternoon, Chairman Nichols and members of the Board.

One year ago, in response to a request from the smallest intermediate volume manufacturers, or IVMs, this Board directed staff to review how the zero emission vehicle, or ZEV, regulation affects IVMs and come back with a recommendation if needed with a vision toward more fair treatment relative to the large volume manufacturers. I'm here today to recommend the proposed modifications to the ZEV regulation that respond to the Board direction for IVMs.

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AIR POLLUTION SPECIALIST WILLIAMS: I will first

discuss both the need for the ZEV regulation and how it works. I will then present a look at the 2012 amendments and the Board's direction to better understand the needs of IVMs. Finally, I will present a proposed amendments and their impacts.

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AIR POLLUTION SPECIALIST WILLIAMS: California is the nation's largest market for cars and light-duty trucks, with more than 25 million registered vehicles. Each day, they are driven hundreds of millions of miles and consume tens of millions of gallons of gasoline. In the process, they emit significant emissions of oxides of nitrogen and hydrocarbons that contribute to the state's air pollution problems and exceedances of state and federal health-based ambient air quality standards.

Cars and light-duty trucks are also responsible for almost 30 percent of the California's transportation greenhouse gas, or GHG, emissions. This morning, Ms. Chen presented information on the Advanced Clean Cars, or ACC, program adopted in January of 2012. The ZEV regulation is a key component of the ACC program and the goal to reduce light-duty vehicle GHG emissions by 80 percent below 1990 levels by 2050.

While auto makers have made extensive progress in controlling emissions from conventional internal

combustion engines, the ARB has determined that California can only achieve its long-term air quality and climate change goals by reducing passenger car and light-duty truck criteria pollutant and GHG emissions to zero or near zero.

The ZEV regulation is an ambitious program to dramatically reduce light-duty vehicle emissions through the gradual introduction of ZEVs into the California fleet. In addition to criteria pollutant and GHG benefits, the ZEV regulation also achieves reductions in toxic pollutants.

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AIR POLLUTION SPECIALIST WILLIAMS: Before I get to staff's proposed amendments, let me first explain how the current ZEV regulation works. Each manufacturer has a credit obligation based on how many vehicles it sells in California. Each advanced technology vehicle earns credit. Pure ZEVs, battery electric, and hydrogen fuel cell vehicles typically earn more credits than near zero emission vehicles. The largest manufacturers must produce pure ZEVs, but may additionally produce zero emission transitional ZEVs, which are plug-in hybrid electric vehicles, conventional hybrids, and partial ZEV credit vehicles, or extremely clean gasoline vehicles. Beginning in model year 2018, conventional hybrids and partial ZEV

credit vehicles may no longer be used in lieu of ZEVs to offset credit requirements.

You just heard from a number of state representatives on the status of implementing the ZEV Memorandum of Understanding. Nine other states have adopted California's ZEV regulation, requiring manufacturers to place ZEVs and near zero emission vehicles in those states as well.

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AIR POLLUTION SPECIALIST WILLIAMS: In January 2012, as part of the ACC rulemaking, the Board adopted modifications to the ZEV regulation, revising the large volume manufacturer, or LVM, definition to lower the transition threshold from 60,000 to 20,000 annual California sales.

Concurrently, the Board directed staff to monitor the transition of IVMs to LVM status. The IVMs in question are the smaller intermediate volume manufacturers, Jaguar, Land Rover, Mazda, Mitsubishi, Subaru, and Volvo and are known as the IVM five.

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AIR POLLUTION SPECIALIST WILLIAMS: During the October 2013 Board hearing, the IVM five presented their proposed changes to the ZEV regulation. Those changes enumerated here would essentially allow the IVMs to make

fewer ZEVs, get more credit for ZEVs they did produce, and allow more time to comply.

As part the Board resolution for the October 2013 Board Item, the Board directed staff to review how the ZEV regulation affects IVMs and returns to the Board with a recommendation regarding more fair treatment of these IVMs, ensuring all manufacturers are successful in commercializing ZEVs. The following slide shows how the IVM five compare to the larger IVMs and the LVMs.

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AIR POLLUTION SPECIALIST WILLIAMS: As seen in this chart, the IVM five have significantly lower California sales, global sales, global revenue, and research development observed concentrations.

One more click, please.

In the one instance when IVM, Mazda, has global sales similar to that of Daimler, which is a larger IVM and soon to be LVM, their global revenue is only one quarter as great. Beyond sales revenue and R&D budgets, IVMs additionally offer few car models. So a greater percentage of their vehicle offerings would have to be advanced technology models.

Finally, IVMs were not required to introduce ZEVs in the early years of the program and thus have not developed the extensive credit banks that LVMs enjoy.

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In recognition of the fundamental differences between IVMs and LVMs and in an attempt to provide IVMs more equitable treatment under the ZEV regulation, staff is proposing the following modifications: Add a revenue test to the LVM definition; provide additional lead time, reduce the percentage ZEV requirement, provide a pathway to participate in Section 177 state pooling, and extend the time allowed to make up credit deficits. I will now discuss each of these proposed modifications in more detail.

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AIR POLLUTION SPECIALIST WILLIAMS: As previously discussed, there is a disparity in revenue between IVMs and LVMs, even when they have similar global sales. Staff is proposing to add a global revenue test to the LVM definition. As proposed, if an IVM crosses the threshold for California sales of 20,000 vehicles on average in the 2018, 2019, or 2020 model year, it would only be subject to the LVM requirements if it additionally has global automotive revenue in excess of $40 billion. The global revenue test is only available to IVMs for the 2018 through 2020 model years. Beginning in the 2021 model year, a manufacturer exceeding the 20,000 vehicle threshold will need to prepare to bring ZEVs to market per

the LVM requirements.

The ARB expects most IVMs will make ZEVs available for sale no later than the 2026 model year. In addition to submitting a revenue reporting form, IVMs that qualify for and chose to participate in global revenue test will also be required to submit a product plan demonstrating how they plan to bring ZEVs to market.

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AIR POLLUTION SPECIALIST WILLIAMS: Once an IVM's California annual sales based on a three-year running average exceed the 20,000 vehicle threshold, that IVM becomes subject to the LVM requirements. Currently, auto makers have three years from the time they cross this threshold before they need to bring a product the market. IVMs have expressed that this is significantly shorter than the normal product development cycle. Staff is proposing to extend the lead time to five years, similar to the lead time provisions established for IVMs in the pre-2012 ZEV regulation.

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AIR POLLUTION SPECIALIST WILLIAMS: The ZEV regulation establishes a minimum ZEV credit percentage requirement for 2018 and subsequent model years. Auto makers must produce and deliver for sale in California a sufficient number of ZEVs to meet credit requirements.

Due to reasons previously described, IVMs in general have not had the resources to develop ZEVs.

To address this issue, staff is proposing to adjust downward the total ZEV credit obligation for IVMs in the 2018 through 2025 model years using as a base line the total percent of new car sales, both ZEVs and TZEVs, that an LVM must meet. Specifically, the proposed obligation is set at a credit level just under the entire LVM maximum TZEV obligation, plus one-fifth of the LVM pure ZEV obligation. This entire credit obligation can be met with TZEVs by IVMs.

In 2026 and subsequent model years, IVMs would be required to meet the same 22 percent total ZEV credit percentage that applies to LVMs. This requirement may be satisfied entirely by TZEV credits but the IVM is not precluded from meeting its requirement with ZEV credits.

As seen on the next slide, this adjustment results in an IVM having an advanced technology vehicle sales percentage more closely aligned to that of the LVMs.

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AIR POLLUTION SPECIALIST WILLIAMS: This graph illustrates how the credit percentage requirement adjustment translates into percent of vehicle sales for LVMs and IVMs. The percent of sales that would result from an IVM, assuming no change, is labeled IVM base line

in blue. The percent of sales that would result from an IVM, assuming the staff proposal is labeled IVM staff proposal in red, and the percent of sales that would result from an LVM under the existing regulation is labeled percent of LVM production in green.

As you can see from this graph, IVMs would be producing slightly fewer advanced technology vehicles on a percent of new car sales basis compared to LVMs.

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AIR POLLUTION SPECIALIST WILLIAMS: Based on likely compliance scenarios, the proposed modifications could result in almost 26,000 fewer ZEVs and TZEVs being delivered to California from 2018 through 2025 versus the existing regulation. This represents a decrease in total vehicles of about two percent versus what would otherwise be expected. The Section 177 states would see a similar percentage reduction in deliveries.

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AIR POLLUTION SPECIALIST WILLIAMS: In 2012, the Board adopted changes establishing the new optional Section 177 state compliance path that allows manufacturers to place extra ZEVs in the Section 177 states in the 2016 and 2017 model years.

In exchange for placement of these extra ZEVs, manufacturers gain the ability to pool credits of TZEVs

and ZEVs across state lines within and between two regional pools to reflect market demand across geographic regions.

While one IVM already has a ZEV product, none are required to deliver ZEVs. So essentially only one LVMs are able too make use of these provisions. Per negotiation with the Section 177 states, staff is proposing to allow IVMs to pool credits beginning in the 2018 model year. But in exchange, the IVMs must place extra ZEVs in Section 177 states in the two model years prior to the start of their LVM requirements. In recognition of timing and ability to place vehicles as a new LVM, the IVMs may take an additional two years to place these extra ZEVs. Additionally, the IVMs will not be allowed a reduced TZEV obligations as is provided to the LVMs.

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AIR POLLUTION SPECIALIST WILLIAMS: Beginning in 2018, the ZEV regulation requires auto makers to make up a ZEV credit deficit by the next model year. The one-year credit recovery period reflects ARB's desire to preclude manufacturers from accruing sizable or insurmountable deficits. IVMs state that the existing one-year period does not provide sufficient time to address a potentially underperforming model. Staff is proposing a three-year

credit recovery period consistent with how MMOG credit deficits are treated within the ACC program.

Staff is also proposing that auto makers with a credit deficit provide ARB an action plan to be approved by the Executive Officer illustrating how the auto makers will achieve compliance.

In the case where a manufacturer with a credit deficit has not produced and delivered a ZEV for sale in California, the proposal directs the Executive Officer to only approve a credit recovery period for one year.

Finally, staff is also proposing to allow IVMs to fulfill a ZEV credit deficit with TZEV credits. This flexibility is consistent with existing regulatory provisions, as IVMs may meet their entire ZEV credit percentage requirements with credits from TZEVs.

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AIR POLLUTION SPECIALIST WILLIAMS: In addition to the modifications that address the IVMs, staff is proposing to clarify that fast re-fueling events occurring during the initial twelve-month period following the vehicle's placement in California would qualify for the fast re-fueling credit. This modification addresses ambiguities in the existing language regarding the credit earning period. Staff is also proposing minor conforming and clarifying changes to include correcting references

and grammar.

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AIR POLLUTION SPECIALIST WILLIAMS: Staff does not expect a reduction in California emissions benefits because, as mentioned previously, the ZEV regulation is a component of the ACC program. Within the ACC program, the LEV III regulation establishes fleet average emission requirements for auto makers. In meeting the LEV III standards, auto makers may certify their vehicles to any of the applicable emission standards, as long as the fleet average emissions of their new vehicles meet the requirements for that model year. This flexibility enables a manufacturer to sell some higher-emitting vehicle models as long as enough lower emitting vehicle models are also sold. The fleet average requirements ensure that air quality does not suffer as a result of an auto maker producing fewer ZEVs.

Staff does expect manufacturer costs to decrease as a result of the proposed modifications. Using the cost assumptions made in the 2012 staff report, staff expects the modifications to result in incremental cost savings of approximately $35 million per year.

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AIR POLLUTION SPECIALIST WILLIAMS: In summary, staff's proposed amendments: Maintain IVM status for

impacted auto makers, provide appropriate lead time to develop advanced vehicle technologies, provide obligations as a percent of vehicle sales that are similar to those of LVMs, and provide other additional flexibilities. Together, these amendments address the Board's direction to provide a more equitable path for IVMs to comply with the ZEV regulation.

This concludes my presentation.

CHAIRPERSON NICHOLS: Okay. We've got a long list of witnesses. And I'm sure we're going to have a lot of Board discussion as well.

But before we go further, I think it's important to establish what it is that we're actually going to be doing here today, because it's my understanding that based on comments that we've received that indicate that we may need to do additional environmental assessment of the proposal that the staff has made, that our attorneys are recommending that we not actually adopt regulatory language today but that we send it back for further staff work and bring it back to the Board for a final vote sometime within -- I believe 60 days would be the minimum. I'd like to hear from our counsel here on what the process is.

CHIEF COUNSEL PETER: The process, Madam Chair, would be that the Board would have their discussion after

hearing the public comment. Obviously would hear from anybody who wants to speak today. The record would be closed. The Board would talk amongst themselves. If they wanted to give direction to the staff as to how they want to proceed, they could do that. At that point, there would be no vote and no resolution on this particular meeting. It would come back to staff. For example, there was 15-day changes that would take place. Then those would be issued. If there was anything raised in terms of environmental comment, that would be addressed. We didn't think necessary that there was an environmental comment. But because of the number of witnesses and the discussion, we thought it was just better to have a review after everything was in so we could make that evaluation instead of trying to do it on the fly.

And then in terms of bringing it back, that would depend on what the staff wants to do. There is no 60-day requirement. It just has to be finished. The entire rulemaking has to be finished within the one year of the initial notice, because that was the statutory requirement. So they can bring it back sooner or later. We just have to finish the whole process and submit the Final Statement of Reasons within the one year from the notice.

CHAIRPERSON NICHOLS: Well, all things being

equal, we'd like to proceed as quickly as we can, because it's better to give everybody notice of what's going to be required.

But I think it is also important that we Board members recognize that this is an item of such public significance that there is likely to be concerns raised. And that it just makes sense to dot every I and cross every T when it comes to following the process that's laid out for CEQA compliance.

So with that in mind, that doesn't change, I'm sure, the intensity of people's views about what we should be doing. But maybe it gives us a little bit more time to reflect and staff to reflect also on what needs to be done here.

I'm going to now turn to the witness list and begin with Barry Wallerstein once again.

BOARD MEMBER GIOIA: I have a process question. So we can still -- I think the idea today is for us to express some of our thinking on this, knowing this language is not going to be final and it goes back to staff if we have some additional thoughts or comments.

CHAIRPERSON NICHOLS: Yes. Absolutely. If there is a clear consensus about a direction, I think the staff is going to hear it and will react accordingly.

But for example, I know there is one item which

I'll let Dr. Sperling himself explain, but where I think as the staff may have gone further than the Board intended them to do in making some changes the last time this item was in front of us and where now that there is more time for them to work on the proposal, they may be able to fix that at the same time they're dealing with some of the other questions. So without too much more --

BOARD MEMBER BERG: Chairman, may I ask one other process question?

When it comes back, it would not be the intent that we would further discuss and have more changes and send it back to the staff and have it back again?

CHAIRPERSON NICHOLS: At that point, there would be, I believe, an opportunity for comment -- for public comment, but not -- if further changes are made, then you go back all around the loop again.

BOARD MEMBER BERG: I would prefer we didn't do that.

CHAIRPERSON NICHOLS: Yes. I would agree with you on that. I am correct though there would be some opportunity --

CHIEF COUNSEL PETER: There is definitely opportunity to have the public comment at the next item. If you -- and there is no limit on how many times you can come back and discuss it.

BOARD MEMBER BERG: That seems apparent.

CHIEF COUNSEL PETER: From a legal point of view. From other points of view, you can argue how many times you want to come back. From a legal point of view, you have to finish within one year. So at some point, you just run out of time in terms of having -- if you had six Board hearings, you probably would not -- you would run out of time within your one year

CHAIRPERSON NICHOLS: And stamina.

BOARD MEMBER BERG: Thank you very much.

CHAIRPERSON NICHOLS: Without further ado then, Mr. Wallerstein.

MR. WALLERSTEIN: Good afternoon. I'll shorten up my comments, given the Board's conversation.

Please stay the course. As you heard earlier, we need as many emissions reductions as possible. And we also need the right signals to industry to continue to produce the vehicles and get the vehicles into California. And if there is anything we need to do at all, it is to accelerate the program.

And with that, we will work with your staff during this interim period and go into any detail that's necessary. And then we'll be back before you when it returns. Thank you.

CHAIRPERSON NICHOLS: Okay. Thank you.

Matt Solomon.

MR. SOLOMON: Good afternoon. I'm Matt Solomon with NESCAUM. Thanks for the chance to speak with you.

NESCAUM serves as the facilitator and technical advisor to the eight state program implementation task force which was created to implement the goals of the ZEV MOU and action plan that we heard about in the last session.

In addition to California, the task force includes Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont. With some reservation, these states support staff's proposed modifications to the regulation.

The proposal would correct an imbalance that was created by the 2012 amendments. While the major focus on the amendments was to enhance flexibility for the large volume manufacturers, it is clear some of the flexibilities enjoyed by these manufacturers are difficult options for many of the intermediate volume manufacturers, or IVMs. As a result, the IVMs arguably face a greater challenge because a relatively larger share of their vehicle sales must incorporate ZEV technologies without the benefit of early credit banking or credit pooling.

We acknowledge that the proposal would likely result in fewer ZEVs deployed, which is a difficult

consequences to accept. As the ZEV rule remains the primary motivation for most manufacturers to develop and improve ZEV technologies, any reduction in stringency is disappointing and something we wish could be avoided.

However, the reduced requirements associated with staff's proposal are modest relative to the total number of vehicles required under the program. More importantly, these changes are necessary to ensure that the regulation applies more equitably to all parties, recognizing their unique circumstances and perspectives.

The Air Resources Board has long distinguished between large and intermediate volume manufacturers in recognition of the different challenges faced by each group. The staff proposal reflects this history while ensuring that the IVMs remain on track toward rapid developments and deployment of zero emission technologies. We hope and expect that the Board will remain vigilant to ensure adequate progress on this transition.

While we support the proposed amendments, we note the importance of regulatory certainty. As the ZEV program moves into its next phase, manufacturers need confidence in the regulatory landscape in order to develop cost effective compliance plans. Similarly, states need evidence that manufacturers will increase their efforts to promote and place ZEVs in the northeast market in order to

most effectively implement the action plan and to justify increased spending on infrastructure and consumer incentives.

With the proposed adjustments, the ZEV rules will be better calibrated and more equitable to all parties. We strongly urge the Board to avoid any additional modifications to the requirements.

In conclusion, the ZEV MOU states appreciate the Board's continued commitment to the ZEV program. We recognize the decision before you today is difficult. The program is a critical part of our state's strategies to meet air quality energy and climate goals. We look forward to ongoing cooperation and partnership with the state of California. Thank you.

CHAIRPERSON NICHOLS: Thank you. I didn't admonish people about the three-minute limit, but everybody seems to know about it. And thank you for observing it.

We now have four companies that want to be a combined presentation: Jaguar, Volvo, Mitsubishi and Subaru. So if you would come forward, appreciate it.

MR. BLAIR: I'm Clinton Blair, Vice President of Government Affairs for Jaguar Land Rover North America.

And as the Chairman mentioned, we're going to be presenting as a group today. I think it's important to

recognize the process that's gone on over the last 18 months that's brought us to today. That process has greatly influenced the work product of the Board. We've worked collaboratively for 18 months. Our work has been data driven. We've had to compromise along the way. I think both sides have had to compromise. And that gets us to a point to a tough but fair proposal from the staff, one that will see us have plenty of certainty, and it will put us on a path to comply with the regulation with cars and not purchase credits. That's very important, because we want to be a part of the success of this regulation.

Just a little bit of the background, which staff shared. We are five diverse companies. And traditionally, we have met the ZEV regulation by delivering clean low emission traditional gasoline-powered vehicles, PZEV vehicles. But with the 2012 changes in the regulation, it would drive us into the large volume class very quickly. And as you've seen by the graphs from the staff, it's difficult for us to wear the label large by any metric, whether it be volume, model lines, employees, revenue. So we think once again this is a tough but fair compromise to get us on the right track.

If you look back at what the Board did two years ago, we really think that it was an unintended consequence to sweep us into the large volume category so quickly. So

the 18 month review that's taken place starts to correct that in every way for us.

I'm going to talk very quickly about the first of five pillars of the staff proposal. And the one I want to talk about is the definition change. This was referenced by Mark in the staff proposal.

Could I have the first slide, please?

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MR. BLAIR: As you saw from the staff proposal, the five IVM companies are on the right of the chart here. And we occupy the smaller part of not only the California market, the US market, but the global market. And we feel like -- so what the staff had put together is a new metric that keeps us in the IVM category a little bit longer. That metric is we will stay as an intermediate volume company until we crossover the $40 billion global revenue number. So that is an important new category -- important new metric that we think provides us with some good flexibility.

And now I'll hand it over to my colleague, Katie Yehl from Volvo.

MS. YEHL: Thank you. I'm Katie Yehl, Director of Government Affairs North America for Volvo cars.

First slide, please.

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MS. YEHL: I want to go over briefly the lead time issue. I think it's important to note once an IVM crosses the 20k sales threshold and the 40 billion revenue, the clock starts ticking to an LVM. This will be phased out in 2020 when all of us will be an LVM by 2026.

And as you can see from this chart, this doesn't delay entrance to the ZEV market. IVMs have limited resources. This only allows for development in series. And typical vehicle development for us takes five years.

It's important to note that LVMs have had significant lead time and incentives to bring these vehicles to market. They've had credit multipliers, release credits travel provisions, and transportation system credits. Changing the lead time from three years to five years does not mean a loss in any vehicles in the market. The current regulation for LVM transition is for six years. Five years is only 16 percent reduction in lead time.

Next slide.

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MS. YEHL: I'm going to briefly cover pooling. Pooling in the 177 states.

As this chart shows, smaller dealer networks make it difficult to comply state by state. For example, in the state of Vermont -- I know they're not here So I pick

on them -- Volvo has only two dealers in the state of Vermont. Dealers are independently owned businesses that can choose to sell advanced technologies or not. So one or two of my dealers could chose not to sell those technologies. It's important to know the 177 states agreed to allow pooling for the IVMs in a similar manner to be LVMs in the plan.

I want to thank the 177 states who are here for working with us on the pooling issue.

I'll turn it over to Dave Patterson of Mitsubishi.

MR. PATTERSON: Good afternoon.

First, as you can see from the vehicles outside, Mitsubishi strongly supports the introduction of electric drive vehicles, not just nationally, but worldwide. The proposed changes in the ZEV requirements is a credit requirement is a critical component of the staff's proposal.

Let me try to simply explain. In 2012, recognizing IVMs have limited resources for concurrently developing vehicles, ARB proposed that IVMs be able to comply with TZEVs. The problem is the effect of this flexibility was not fully realized, and we ask this be resolved. Currently, we must comply with the same regulatory requirements as the large companies.

Let me show you some important numbers. First, you can see here -- you can see here that we are 7 percent of the total vehicle sales. If the auto industry is a Thanksgiving dinner, we are the cranberry sauce. We're unique, but hardly going to carry the meal.

Next slide.

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MR. PATTERSON: Here's two numbers that might be familiar. The top number is the 2012 regulatory goal for California ZEV sales in this time period.

Next slide, please.

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MR. PATTERSON: The bottom number is subtracting the change that's being proposed today. Both these numbers look like one and a half million vehicles, both compliant to the Governor's goal. That difference is not much. It's hardly a significant cut.

Next slide, please.

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MR. PATTERSON: And finally, this slide here, this comes from the 2012 rulemaking. This is staff's projection of what the ZEV sales would look like.

Next slide, please.

--o0o--

MR. PATTERSON: But this is what the TZEV

flexibility means to companies of my size. This is -- I would mean we would have to proportionally sell 100 percent more vehicles than the large companies. What we're asking for today is just equity. We would like to be able to comply with TZEVs at the same level as the large volume companies.

I'll turn it over the Dave Barker from Subaru. Thank you.

CHAIRPERSON NICHOLS: Unfortunately, I'm one of those people who thinks turkey is an excuse for cranberry sauce.

MR. BARKER: Thank you, Chairman Nichols and Board, for allowing me to speak today.

First, I'll be addressing the credit deficit recovery portion. IVM's ability to make up ZEV deficit in the one year that's currently prescribed in the regulation is unnecessarily punitive. By the time the deficit is recognized --

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MR. BARKER: By the time the deficit is recognized, there is no time to make adjustments to our products to improve sales, especially for an IVM who's only able to sell one model of ZEV at a time. If that's not a success in the marketplace, we won't have another model in our fleet to compensate at the larger

manufacturer.

ARB staff acknowledges this challenge and is proposing three years to recover from the deficit with three key requisites to address the concerns. It is a reasonable flexibility for an uncertain market and flatly no vehicles are lost in this provision.

I would like to address any of the requests that part or the entire IVM proposal should be postponed to the midterm review. The current IVM proposal under consideration is not within the scope of the midterm review. This is truly an adjustment being made to complete the 2012 ZEV regulatory process. IVM's need regulatory certainty now. We need to know what to build and when. We can't make product decisions and investments of billions of dollars based on incomplete information. We don't feel it's fair to leave the IVMs in limbo regarding the requirement.

Essentially, we are asking for some equity at the LVMs in our treatment under the ZEV regulations so we can have a chance to comply with actual cars and not just purchase credits Because ZEV credits are a program flexibility, to make up for short falls due to uncertainties with bringing ZEVs to the market. To put it plainly, it's a business insurance policy. Some would say we could ignore the IVM proposal and purchase mass amounts

of credits and delay many years of compliance. That's not our intention. And I think many agree that's not the intention of the program. That path only leads to reduction in vehicle diversity and a true weakening of the ZEV market.

This proposal took many months of open discussion and negotiations with staff. They made it clear they were primarily concerned with ensuring it would not be detrimental to the success of the program and maintaining California's goals.

So it's hard to understand that any change to the ZEV regulations is purely an erosion of the rule and will lead to a snowball effect of additional changes. Any determination of further changes to the ZEV regulation are at the hands of the ARB staff and Board members. Each potential change stands on its own. Thank you.

CHAIRPERSON NICHOLS: Okay. That concludes the group presentation then.

Next we'll hear from Joe Lyou.

MR. LYOU: Thank you, Chairman Nichols.

I'm Joe Lyou. I'm the President and CEO of the Coalition for Clean Air. I'm also, as Chairman Nichols said, the Governor's appointee of the South Coast AQMD Governing Board.

I'm here primarily in my role as the President

and CEO of Coalition for Clean Air. However, there are a couple of things I wanted to do in terms of my official role at AQMD. One is to say listen to Barry. I thought his recommendation was very good. Two was to welcome everyone to Diamond Bar. And three is to give you a warning. You see those holes at the bottom of those -- the screens. Don't put anything near there. If it goes down there, you'll never get it back. I have lost more pens in those holes then I care to admit.

I do have some slides. Will you put them up?

The Coalition for Clean Air opposes any relaxation of the standard, relaxing the lead time provisions, reducing the ZEV percentage requirement for allowing for additional time to make up the ZEV credit deficits.

And before I go into the details, I want to talk about the future. But I want to tell you about yesterday. I woke up and online I read this article in the L.A. Times website about how we're not getting there. And this year was worse than last in terms of it. I went out and unplugged the Chevy Volt I drive because the Air Quality Management District staff want me to have an experience with alternative technology vehicles. And I drove out here and I chaired a couple of Advisory Board meetings and I plugged in here. I unplugged, and I went to Union

Station and went to the MTA plug-in station that they have at that Union Station. Spent an hour trying to get that plug in. Well, it was some administrative problem with the fact it was the first time I was using the metro plug-in station. Spent an hour trying to get that to work. Plugged in. Attended the Miguel Contreras Foundation annual fund-raiser, which was wonderful. Got enough charge to get home.

Used in the whole day less than like a couple tenths of a gallon of gasoline. Got home, plugged in again. And I thought to myself, you know, transitional vehicles, these plug-in hybrid electric vehicles aren't quite there yet. I don't want to have to plug in everywhere I go. And that's the reason why we need to push this and make it move more quickly.

So let me talk about the future. Go to the next slide.

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MR. LYOU: Barry mentioned this. I have to remind you. South Coast air basin, in order to achieve attainment for the Clean Air Act, we have to be two-thirds by 2023 and three-quarters by 2032.

Next one.

If we don't do it, we're facing some very severe sanctions.

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MR. LYOU: De facto ban on new businesses because of offset requirements, loss of federal highway funds, and a federal takeover of our regulatory program. And the last one -- do that.

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MR. LYOU: This is the vision document. I know I'm running out of time. Hit it again.

--o0o--

MR. LYOU: We have to do it ten years faster if we're going to get to our Clean Air Act requirements. Thank you so much for considering our comments.

CHAIRPERSON NICHOLS: Thank for coming.

Michelle Kinman and then Jamie Knapp.

MS. KINMAN: Good afternoon, Chairman Nichols and members of the Board.

My name is Michelle Kinman. I'm the Clean Energy Advocate for Environment California, a statewide nonprofit environmental organization.

As you well know, in recent weeks, California has achieved exciting momentum towards achieving Governor Brown's goal of putting 1.5 million zero emission vehicles on our roads by 2025. Shortly after California celebrated the 100,000th plug-in vehicle sold in this state, the Legislature passed and Governor Brown signed a number of

important new laws to support the market expansion of ZEVs. These laws included SB 1275, the Charge Ahead California Initiative, which was designed in part specifically to help California achieve the 1.5 million goal.

Complimenting the support of the statewide level, just this week environment California released a list of over 85 Mayors, City Council members, and other local city government officials from Sacramento to Oakland, from Fresno to Riverside, from Los Angeles to San Diego, all of whom are charged up about zero emission vehicles.

These local leaders have all signed on to say, and I quote, "Yes, I endorse Governor Brown's pioneering vision to place 1.5 million zero emission vehicles on California roads by 2025. By accelerating the deployment of clean vehicles, we can clean up our air, reduce global warming pollution, improve public health, save Californians money at the pump, and stimulate economic growth."

While this endorsement list is not specific to or in response to the ZEV regulation amendments proposed to the Board for consideration today, it is a reflection of the strong local government support for California's continued leadership on zero emission vehicles.

With all of this in mind, on behalf of

Environment California, I urge the Board to continue building on this positive momentum, stay the course on ZEVs, and not send a conflicting policy signal regarding the timing or stringency of the ZEV program. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Ms. Knapp.

MS. KNAPP: Chairman Nichols, members of the Board, thanks for your commitment to cleaner air in California.

I'm Jamie Knapp, a coordinator of the California Clean Cars Campaign.

I'd like to briefly summarize this letter that you received earlier last week. It was submitted to the docket by public health, air quality, and environmental organizations. Many of them are here today, so I will keep my comments brief. This letter was submitted by the Coalition for Clean Air, Natural Resources Defense Council, Sierra Club California, Center for Energy Efficiency and Renewable Technologies, Union of Concerned Scientists, and America Lung Association in California.

So the ZEV program, as you all know, and as we've heard today, is key to the immediate and long-term public healthy -- eliminating the immediate and long-term public health burdens of the vehicle population and to transitioning the state to a zero emission vehicle fleets.

Because ZEV plays this critical role, these organizations have some significant concerns about the proposed amendments that affect the intermediate volume manufacturers.

The proposed amendments go too far. They go beyond your direction last year. They further the death by a thousand cuts stigma that surrounded the ZEV program in the late 1990s and early 2000s. We don't want to go back there. They set a bad precedent and send a strong signal that seems to contradict our many state policies designed to nurture the burgeoning ZEV market. And we've heard about those earlier today as well, those good things that are happening. So we don't want to send those bad signals.

Specifically, the colleagues on this letter oppose three of the five proposed amendments. They oppose the proposal to extend the transition time from three to five years, the proposal to reduce the stringency and therefore the number of vehicles, and the proposal to extend the deficit makeup period. They run counter to the state's clean cars and climate goals and represent a significant change that should not be undertaken here today before this scheduled midterm review.

Frankly, we also think they're unnecessary since several of the intermediate volume manufacturers have

demonstrated great success making and selling great cars oversees. So, surely, they can sell them here, too.

We need a strong and consistent ZEV program to give fuel cell vehicles a fighting chance in the marketplace in the next couple of years. If we scale it back now, will the IVMs even attempt the technology? So we urge you to reject those three provisions of the staff proposal.

That said, we also support and urge you to adopt the definition that adds a global revenue metric and the provision for pooling in the Section 177 states. We support those two provisions.

You have the opportunity today to send a clear message that California intends to stay the course from the ZEV program. And we hope you will. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Mr. Reichmuth and then Will Barrett.

MR. REICHMUTH: Hi. My name is David Reichmuth. I'm Senior Engineer in the Clean Vehicles Program at the Union of Concern Scientists.

First, I would like to thank staff for meeting with us and engaging in a constructive dialog on this issue. UCS supports the proposed changes in the definition the IVMs and the ability to pool credits However, we ask the Board to reject changed to proposed

lead time, the deficit period, and the ZEV credit requirement.

I'd like to focus my comments today on the proposal to reduce the ZEV credit requirement for the IVMs. Now, the proposed reductions would cut the IVM's requirements in 2025 by almost 60 percent. This is a significant cut that will have a negative impact on the climate of ZEVs. IVMs will produce fewer ZEVs and/or produce less capable vehicles with shorter ranges, negatively impacting customer's choices for plug-in vehicles and potentially fuel cell vehicles.

There has been a lot of discussion and some disagreement on the number of vehicles that will be lost as a result of this proposal. As I detail in the written comments submitted with NRDC, the vehicle sales and percent projection depends strongly on the assumptions and types of vehicles that are manufactured by the IVMs.

The staff projections in the ISOR assume that IVMs will make vehicles with credits equal to a 20-mile plug-in hybrid. However, I believe this underestimates the ability of IVMs to make longer range TZEVs in ZEV vehicles. Already, two IVMs are selling plug-ins with greater than 30-mile range in Europe, and that's today.

In ten years' time, we should be able to expect that IVMs can make vehicles that have a greater electric

drive capability. But underestimating the capabilities of IVMs to produce longer-range plug-in models and pure ZEVs, the projection to the number of vehicles these manufacturers would have to sell under the existing requirements are inflated. There is some uncertainty and disagreement in the number of vehicles that would be lost in this proposal. But what's certain with this proposal is that the ZEV credit requirements be slashed with the negative effects on the ZEV program fewer vehicles produced and potentially less customer choice.

Making cuts to the ZEV requirement is a significant change to the ZEV program. And the proper venue for this significant change is the midterm review process. Therefore, UCS urges the Board to keep the ZEV requirements unchanged. Thank you.

CHAIRPERSON NICHOLS: Thanks.

Mr. Barrett and then Ken Morgan.

MR. BARRETT: Good afternoon. Will Barrett with the America Lung Association in California. The American Lung Association in California is a long time supporter of the ZEV mandate.

We believe the ZEV program is a critical tool in the fight against air pollution and climate change and we ask the Board to stay the course.

Over and over, the health and medical community

in California has gone on the record as committed to the strong implementation of the ZEV program to protect and improve public health. Clean, zero emission vehicles are critical to cleaning the air and reducing asthma attacks, heart attacks, strokes, and other harmful health impacts caused by traffic pollution.

Our research indicates billions in health costs can be avoided with the transition to a full zero emission fleet in California. But until that point, every zero emission vehicle on the road will help people breathe easier, and we need to keep that momentum going.

As we've seen today and heard from the other states, the market is growing. And more and more policies are coming into place to support the path forward in California and in those partner states. We don't view this is the time to pull back from that commitment.

So as you've heard, we join with our colleagues at the California Clean Cars Campaign and ask you to reiterate the Board's support for strong implementation of the ZEV program. We ask that you reject the provisions of the staff report. Our proposal dealing with the longer lead time, the reduced ZEV stringency, and extended credit deficit make up period, all of which we believe take too many cars off the road and take us away from our clean air goals.

We do look forward to working with you and the staff in the coming years to ensure clear pathway to and beyond the 1.5 million vehicles we all want to see on the road and moving forward to a healthier cleaner future for California. Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Ken Morgan and Julia Rege.

MR. MORGAN: Chair Nichols, members of the Air Resources Board, thanks for the opportunity to speak today.

Tesla's sole mission, the purpose of our company, is to deliver 100 percent zero emission vehicles, the very goal of the ZEV mandate itself. So any decision to weaken the ZEV mandate has a direct effect on Tesla's business and on our progress towards a zero emission vehicle future.

We've talked a lot about the IVMs versus the LVMs. But if you consider Tesla versus the IVMs, the IVMs deliver five million cars. These five manufacturers deliver five million cars globally every year. Last year, Tesla delivered 22,000 cars. The IVMs have billions of dollars in cash on hand and they have access to the same capital markets that Tesla used to raise the money to do the designing and development and manufacturing of our electric vehicles. So they have access to billions of

dollars through those markets as well. Financial capacity is actually not even an issue here. And the technology is available today.

The proposed changes are significant. We're talking about cutting ZEV mandate by 54 percent and allowing manufacturers to delay their programs to 2026. That means the IVMs have twelve years before they're asked to deliver a single zero emission vehicle. And over that same twelve-year period, they will put twelve million vehicles on the road in the United States.

We've talked about the flexibility that's available via credit trading. The IVMs have said we want cars, not credits. So do we. And the only way to guarantee that you have fewer cars is to accept the proposal and weaken the standards. We prefer cars, not credits But at least if you have credits you know that at least one manufacturer or few manufacturers are delivering the cars, even if the IVMs aren't.

And I'd also like to talk to you a little bit about the California mandate. We've spoken about the 177 standards and the challenge to comply in those states. But there are over 150,000 banked pure ZEV credits in California alone today, just in California. This is a challenge we need to address, because this basically satisfies the entire industry's compliance with the ZEV

mandate for a number of years, which means that California itself and the ZEV mandate will lose its strength to drive manufacturers to increase their delivery of zero emission vehicles.

So we would actually urge the Board to recommend that staff consider proposals to actually strengthen the ZEV mandate, not weaken it and to come back in a year to look at those findings. And if that means that Tesla receives fewer credits, that's fine, as long as Tesla is not singled out as the only manufacturer to be taking the burden of this. But that the whole industry is actually subject to stronger requirements.

And in conclusion, technology is here. These manufacturers have the financial capacity to build the cars. Now is the time to hold the line and keep the mandate strong. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Julia Rege and then Steven Douglas.

MS. REGE: Good afternoon. Julia Rege with the Association of Global Automakers.

As I said earlier today, our members are committed to zero emission vehicle technology. They are working hard to comply with the ZEV program through a variety of strategies, the investment of billions of dollars in the development and deployment of ZEVs and

TZEVs, and the sale of ZEVs in California and the Section 177 states, as well as nationwide.

Sales have been increasing, but there are still challenges ahead. Global Automakers supports regulatory efforts that enhance compliance flexibility and feasibility, while maintaining regulatory goals. And we believe ARB's proposed amendments meet this intent.

We do, however, have two concerns that we like to address today. First with regard to the offer to use credit purchases as an alternative to the proposal. While credit purchases can provide short-term temporary relief and some compliance certainty, no company can rely on purchase credits its sole strategy for the future. These amendments enhance short-term flexibilities for IVM and are necessary to ease the transition to more stringent requirements and are reasonable accommodations.

Second, compliance challenges are not unique to IVMs. Meeting the aggressive ZEV requirements will be exceedingly difficult for all OEMs going forward. And there is a significant amount of work that must be done to stay the course. It will take time and a sustained commitment of resources from multiple stakeholders in order to achieve continued growth.

California has shown its commitment to such growth through ongoing incentives, HOV lane access, and

electric and hydrogen infrastructure development as a few examples.

While we appreciate the northeast states' efforts to implement their action plan, and we believe that their efforts will have a positive impact on ZEV sales, there is no doubt that there remains a huge challenge ahead. For instance, while plug-in hybrid sales have been growing steadily in California, you've seen a decrease in the sales rates in the northeast states by about 50 percent since 2013, creating a substantial gap between California and these states and between today's required volumes and actual sales. His creates unfair compliance burdens.

We recognize that ARB plans to examine the ZEV program as part of the midterm review process as I noted earlier. But we believe that market differences between California and the northeast states warrant a more timely regulatory review by ARB and that reasonable adjustments can be implemented without sacrificing substantial growth or even pressure to grow in the applicable Section 177 states.

We urge the Board to recognize the market differences between California and the northeast and to direct staff to align the regulations to the realities of these differences. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Steven Douglas and then Azita Khalili.

MR. DOUGLAS: Thank you, Chairman Nichols and Board members.

I just had a couple points, kind of follow-up points I wanted to make. The first is on the EVMT we talked about so long ago this morning. There was a lot of talk about we need more data, and it sounded like the TZEV credits and the credit restrictions were perfect numbers that were decided on that we need a lot of data to change those.

I just wanted to point out those numbers are not sacrosanct. The credits and the restrictions were adopted with almost no in-use vehicle data. And so all we're asking -- you know, at the time, it was just kind of our best guess and now we have a lot more data. And we are simply asking the staff to take a look at the data that we have. And we think it's substantial.

The second is the 177 states. Again, I'm pretty excited to hear about all the things that are going on in the 177 states. We wholeheartedly support the states's efforts, and we think that it will pay dividends in the long term. By the long term, I don't mean 2050. I mean 2020, '21 time frame.

But we all know the time line for legislation. If every MOU state adopts or legislation next year for

infrastructure, it won't be implemented until 2016. And then it takes time.

And finally, the availability. You've heard a lot talking about availability of zero emission vehicles in the northeast. And we don't dispute that some vehicles are not available in the northeast. Commissioner Cash identified the three, that Chevy Spark, Honda Fit EV, and the Fiat 500 EV that are not available. We don't dispute that. However, vehicle availability does not explain the difference in the market between California and the northeast. These are different markets.

And I offer two example as to why that is. The first is said the sales have actually dropped in the northeast. From 2013 to 2014, it dropped. Plug-in hybrid sales have dropped 50 percent and battery electric vehicle sales were already pretty low. They've dropped slightly.

The second is hybrid electric vehicles, those are available everywhere. They are available identically everywhere. And yet, the sales of hybrid electric vehicles in California are more than twice what they are in the northeast.

So just in closing, we're not asking that you reduce the challenge outside of California. We're asking for equally challenging requirements in California and outside California. And I think that warrants some review

of the data. Thank you very much.

CHAIRPERSON NICHOLS: Thank you.

Ms. Khalili and then Michael Hartrick.

MR. KHALILI: Good afternoon, Chairman Nichols, members of the Board.

My name is Azita Khalili. I'm environmental regulator and manager for BMW. We are here -- we fully support the comments provided by the Alliance. We are here to ask you to allow for minor modifications in the regulation that would allow us to deliver more ZEVs in the near term, not less ZEVs. Specifically, they're asking that ARB consider an extension to the pooled provision that was adopted in 2012 ZEV modifications and updated in 2013. The deadline to sign up for the pool provision was September 1st. That was few weeks ago. This was only three months after the finalization of the 2013 ZEV modification.

To our situation, we are currently an intermediate volume manufacturer transitioning to large volume manufacturer by 2018. As such, we are allowed to meet our entire ZEV requirements with partial zero emission vehicles, which are 328 models, very clean gasoline model like 328. But instead, we have committed ourselves to electro mobility and being part of the transformation that's happening in industry right now. We

leased hundreds of electric Minis and BMWs to customers in California and in select markets between 2009 and earlier this year. And in May, we launched an all-electric BMW I3, which I had the luck to drive to this Board hearing this morning. And it's the vehicle that is actually exhibited outside.

BMW I3 has grabbed a lot of attention for its vehicle architecture, the choice of materials that are being used, and the entire design philosophy. Between the launch of the I3 in May this year and the signup deadline for the pooled provision, there are only four months. All we are asking is for an extension of the deadline for the pooled provision by one year.

And can I have the charts, please? Because numbers are easier to digest.

The top row shows the path we are on right now. We are at existing IVM, and we have twelve percent ZEV requirements in Section 177 states in model years '15, '16, and '17. The IVMs who have signed up prior to September, they have the 11.25 percent in model year '15. That means they have reduced the total ZEV requirement and they have increased ZEV requirements in '16 and '17. We are proposing give us one more year to evaluate the situation for us and let us join by September 2015. And this will be the third row in the table. In total, we

want to deliver more ZEVs earlier to the Section 177 states.

CHAIRPERSON NICHOLS: Thank you.

Mr. Hartrick and then Don MacAllister.

MR. HARTRICK: Good afternoon. I'm here today representing Chrysler Group, LLC.

In addition to our other award-winning cars, SUVs, and trucks, we are also the manufacturer of the Fiat 500E electric vehicle that was featured as part of today's showcase.

Most of the proposed amendments before you are targeting an increased flexibility for immediate volume manufacturers, and therefore have very little impact on Chrysler. However, we wish to draw your attention to one of the proposed amendments which, based on the reasoning provided by staff, should also apply to large volume manufacturers.

Staff is proposing to allow IVMs to use TZEV credits as part of a carry-back plan to cover a prior year shortfall. Staff reasons that because IMVs are permitted to use TZEV credits for compliance, they should have the same flexibility in making up a deficit.

Large volume manufacturers are also permitted to use TZEV credits for compliance, albeit in a more limited fashion. Chrysler, therefore, recommends the same

flexibility of the carry back TZEV credits be granted too large volume manufacturers, but only to limited extent that an LVM can make use of TZEV credits in their original compliance year.

For example, if a manufacturer was allowed to apply 1,000 plug-in hybrids for compliance for a given year, but only sold 800, it should be permitted to sell an extra 200 in a subsequent year to cover that original year's allowance. In so doing, the number of advanced technology vehicles would still be maintained.

Others have spoken about further considerations for the ZEV regulations, such as EVMT and the market difficulties faced by manufacturers. Zero emission vehicles did not become a true market success until technology and consumer desire for it allowed manufacturers to sell them at a profit instead of a loss.

We respectfully remind the Board that all manufacturers, not just IVMs, will be challenged to meet zero emission greenhouse gas and criteria pollutant requirements simultaneously. We encourage the Board and staff to consider working with all manufacturers and to take their concerns into consideration through future rulemaking, such as the midterm review.

In addition, reducing emissions from vehicles is not enough to realize the 2050 greenhouse gas reduction

goal. Reducing the upstream and downstream carbon content of all transportation fuels is absolutely necessary to achieve our common goal. The transportation fuels industry has a significant role to support the vehicle and fuel system needed for success. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Mr. MacAllister and then Lorraine Paskett.

MR. MAC ALLISTER: Thank you, Madam Chairman, and Board members.

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MR. MAC ALLISTER: I'm here on behalf of the company to request an amendment for an ultra fast category of battery swap. Our mission is adoption of EVs on the scale that hasn't so far happened. The three reasons that EVs have not been adopted so far is there is range anxiety, recharge wait times, and the cost of new batteries. Our fast swap system addresses these obstacles.

Next slide.

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MR. MAC ALLISTER: How we solve this. The fast swap system will be achieved by a standard battery pack, which will allow auto makers to reallocate the resources to develop next generation of vehicles.

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MR. MAC ALLISTER: So let's all get together and foster widespread adoption of electric vehicles. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Ms. Paskett and then Darrell Clarke.

MR. CLARKE: Good afternoon. I'm Darrell Clarke, co-lead of the Sierra Club's national Beyond Oil campaign and here representing Sierra Club California, a member of the Clean Cars Coalition.

Beyond Oil's goal is the 50 percent reduction in U.S. oil use from 2005 to 2030. And our two main levers to accomplish that beyond the existing mileage standards are: Number one, healthy communities for less driving; and number two, our topic here, zero emission vehicles.

And very much thanks to all of you on the Board, all of your staff, for making California such a beacon of leadership on zero emission vehicles. The display outside, one of so many different models show how far we've come, but we know we have far more yet to go. But I would like to note even the heavens seem to be saluting us today with the partial solar eclipse, if any of you noticed. Like, hey, guys down there. You're doing a good job.

But as noted in the Clean Cars Coalition letter, we support -- Sierra Club California supports two of the

proposed revisions. We reject the other three that would reduce the number of ZEVs manufactured and sold by 2025. It is just too important get the ZEVs made and sold and on the road.

And highlighting the new legislation passed and signed by the Governor to improve access to ZEVs and ZEV infrastructure, the Governor's speech at the UN Climate change Summit, all of these say California is moving forward. California is not stepping back. And although it did note hearing BMW's request, just as a personal note, if that helps gets more ZEVs on the road, that sounds like a good time.

Thank you. Please stay the course. Please run faster down the course.

CHAIRPERSON NICHOLS: Thank you.

Our last two witnesses are Daniel Ryan of Mazda and Simon Mui from NRDC.

MR. RYAN: Good afternoon. Dan Ryan from Mazda. Since this is World Series time, I can say that I'm sort of batting cleanup for the IVM five.

I want to take a minute to just sort of summarize our thoughts and sort of give you what we see as the reality of all this. From our perspective, this is not a roll back. Any changes that are made in this proposal is not a conflicting policy signal, and it is not a bad

precedent. What it is is an adjustment to complete the 2012 ZEV amendments.

Chairman Nichols, herself, admitted this is a complicated regulation. And the changes that are being thought about today are really a reflection of the complication of the regulations. It's an acknowledgement that this was not completely done in 2012 and that we needed to make some corrections.

Overall, we've said it many times that we need regulatory certainty. We need it now. It sounds like we may not get it now. But we need it very soon. We're smaller companies, but we still have to make all together amongst us multiple billions of dollars worth of investment decisions about what cars to make, when to make them. So we can't really afford to have this sit and leave us in limbo.

I also wanted to comment quickly about a few people have mentioned about some of our companies selling cars overseas. I think everybody knows that the U.S. and probably California in particular is one of the toughest or the toughest market to meet the regulatory requirements, specifically for emissions, for OBD. And our companies are smaller. We don't necessarily have the resources to do all those things. And that's why some of these vehicles aren't here.

I've also heard that this proposal would allow us to delay our ZEVs until 2026. That is absolutely not true.

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MR. RYAN: If you look at the slide and look at the proposal, which is the red line for us, we have an obligation starting in 2018. So there is nothing there that says that we cannot do anything until 2026. And we all fully intend to start doing things starting in 2018.

So in sum, we need you to enact the entire IVM proposal. I want to emphasize changing the definition of an IVM and enacting pooling without addressing the compliance requirement would be essentially useless for us. As we've shown, if you have to meet the same requirements as an LVM, there is no difference between an IVM and LVM. And everybody has understood that we really are different than the LVM. We're one-tenth the global revenue. We're seven percent of the U.S. market. And as you can see there, if the requirements aren't changed, we are the green line. We're 31 percent. That's just simply not fair.

So in sum, we want to do our part to support ZEV goals. We need a regulation that will allow us to do that. We want to comply with cars, not credits. We will have ZEVs well before 2026.

CHAIRPERSON NICHOLS: Your time is up.

MR. RYAN: I'm sorry. And we ask for your support for the entire staff proposal. Thank you.

CHAIRPERSON NICHOLS: Thank you.

Mr. Mui.

MR. MUI: I guess I'm the relief pitcher here.

Good afternoon, Chairman Nichols and members of the Board. I'm Simon Mui with NRDC.

Like this public comment period began, we want to keep the ZEV program strong. We don't want to send bad signals to the market today.

You know, I'm in the middle of planning a home addition for my 70-year-old Berkeley bungalow. What I'm finding out is you can't really build that high unless you really have a solid foundation that you know you've planned for that you can build upon.

For EVs and fuel cell vehicles, that foundation is really the ZEV program. You've heard from so many comments today from the states, from other auto makers, from NGOs about the things that we are doing to build upon the ZEV program. That is our foundation. Plug-in collaborative incentives, public infrastructure, all these complimentary policies that are being built are being built because we started in 2012 with the ZEV program as a foundation.

And you know, now is not the time when the concrete has just dried on the foundation to start taking chips, cracking the foundation, moving it around. We need a solid foundation to build. We have a plan, 2016, look, inspection at the entire program. And that is a suitable time. We've heard about so many piecemeal changes today, it's hard for even me, who spends a lot of time on this, to get my head around all of them and their comprehensive effects on the program. We need that. We need time to look at these individual measures in a comprehensive fashion.

I'll talk a little bit about, you know, the comments around the IVMs and what they're doing in Europe. It's true they need some additional time to bring those models to get certified. But you know, they are selling in Europe. They're selling models here in the U.S. in terms of their internal combustion vehicle. But what I will say is that what the IVMs have already done in Europe, they're on course this year to sell about 25,000 vehicles. One IVM is the largest, the most successful plug-in vehicle manufacturer in Europe today. If they did what they're doing in Europe today, it would meet the 2025 standards that's being proposed by staff. We think that goes that's too weak. We think that the proposal respectfully went too far in terms of the cutbacks on the

stringency. And we do want the program to stay strong. So let's not make piecemeal changes today. Let's understand the entire rubric here for the midterm review. Let's keep that strong and build upon it. Thank you.

CHAIRPERSON NICHOLS: Thank you very much.

That completes the list of witness who signed up to speak. If Ms. Paskett returned, she can come. I think she had to leave.

That it. I'm going to close the record at this point at this stage of the game and return to discussion by the Board members. And I think I can open it up. We've heard a lot of diverse comments here. I know the person who is most anxious to speak is sitting down to my right. I'm going to call on you first, Dr. Sperling.

BOARD MEMBER SPERLING: Well, let me start by saying that on behalf of the whole Board, I'm sure I'm accurate in saying that we are so committed to this ZEV mandate, to building the foundation, to strengthening the mandate. And that is our intent and our plan. And we will be proceeding in that way. I don't think there should be any question about it.

A little point there that kind of irritates me a little bit is people talking about a thousand cuts and not making adjustments. But in fact, the success of ARB over the years is that it learns and does adjust as

circumstances change, as we learn more about the technology.

So let me give folks on one specific item that really is very concerning to me and in many ways -- if the issue with the IVM is a cut, then this is slashing the throat, just to use some very colorful language here.

CHAIRPERSON NICHOLS: How about cranberry sauce?

(Laughter)

BOARD MEMBER SPERLING: All right. So the issue here -- and it's been referred to in several ways is the battery swapping. And this is in the words of our Chairman, diplomatic words, an adjustment that needs to be made.

What happened is a few months ago there was an amendment that was made that many of us weren't aware of and what it did is give a lot of extra credits for battery swapping. In fact, it gave so many credits that's the slashing of throat metaphor -- it was five credits per vehicle per year. So you battery swap your vehicle once in a year, you would get five credits. On top of that, every other -- if you swapped it again up to 25 times, you could use credits for other vehicles. So in other words, one vehicle swap say 25 times every two weeks would amount to 125 credits.

Credits are valued at somewhere around two to

$3,000 these days. That means that's 250- to $300,000 in credits that can potentially be captured by a single vehicle. Let me express even another way. If one battery swap station were placed in a strategic location, such as Harris Ranch, a popular stop over between northern and southern California, one battery swapping station would generate enough credits for the entire industry if vehicles were just swapped at the same rate they're charged now.

I had an opportunity to stop by Harris Ranch lately. I've been doing a survey how many vehicles there are. There's usually two. I think there's just no way this can stand. It really needs to be changed.

So I have five points that I'd like to -- if this was a formal resolution -- it's not -- encouragement to the staff. And hopefully my Board members will support me on this. But the five points would be to be very precise. I can give them in specific words later. But I'll read them fairly quickly.

And that's basically we want the staff to return with a new regulatory proposal regarding the assignment of credits for battery swapping by battery EVs. So the new proposal should reduce the amount of credits that battery swap capable vehicles earned to no more than seven credits or so for type four ZEVs, nine credits for type five ZEVs.

The new proposal should require each vehicle earning fast refueling designation demonstrate battery swapping at least several times in the first twelve months of its placement in order to be able to get the credits. A single vehicle or a particular vehicle using battery swapping to earn these credits for other vehicles, they should only be assigned to that particular vehicle. And the proposal should have robust reporting mechanisms in place to minimize any ability to game the credit system. And perhaps most importantly, every effort -- I urge the staff to make every effort to sunset the current battery swapping role as quickly as possible. I'm not a lawyer and I don't know the exact process, but however that can be expedited, I strongly encourage it.

CHAIRPERSON NICHOLS: Thank you.

I think you'll find a lot of support for that proposal. I don't think anybody ever intended that it be as open ended as your calculation has clearly shown it is.

I think there was sympathy for the concept that battery swapping could be a way of expanding the market by making it easier for people to recharge as opposed to go to a station where they would have to plug in. But obviously was not intended to be a loophole of that size. So I think I would support your recommendation on that.

I think that it does need to be looked at in the

context of the other changes that we're proposing to make. So I'd like to hear further discussion about the staff proposal.

I guess I'll start off by saying that I've given this issue a lot of thought, and I feel a certain personal investment in it because I was present more than a year ago at a meeting that took place at the Sylmar conference that Dr. Sperling hosted where I met along with some of our staff and was very impressed by the seriousness of their commitment to becoming a manufacturer of electric vehicles and concerns they raised about their ability to do that given financial constraints and so forth.

When I saw the proposal in the final form, I had somewhat the same reaction that you had on battery swapping. Maybe not quite as indignant, but nevertheless, I felt that it had gone much further than I ever intended for it to go. And my reasoning on this is maybe a little bit complicated, but it's not that complicated. I'm not convinced that the line that we drew on IVMs versus LVMs was the correct line in the first place. I don't think IVMs are small businesses. They are not small companies. They are in in terms of size, yes. But there aren't many companies in the world that are Toyota or General Motors. And the fact that they aren't of that size not only shouldn't mean that they aren't invested in producing

advanced clean cars, but really if they don't have a lot of models, they should be more invested in clean cars.

In other words, I don't see it as an equity issue that they should get the same percentage of gasoline cars versus other cars. I see it as a business enhancement for them that they would be making and selling more clean cars in California.

The example that BMW who has recently come from being an intermediate to a large volume manufacturer under our rules may be a useful one in the sense that this is a company which on a worldwide basis is not a GM or Toyota. They happen to be in the large category because Californians love BMWs. They like the style. They like their engineering and buy more of them than people in other parts of the country do. So they fall into our regulatory scheme because of that. And you know, it's a pleasure to see the innovation and the quality they're bringing to their electric vehicle offering.

So I just -- I don't want to cling too much to the definitions that we've always had. I'm willing and I think this is the proposal that was being made to us by the environmental coalition to support the idea that we could add a different criteria to or an additional criteria to deciding who is large versus intermediate for purposes of our rules. And I think the pooling

requirement for the rest of the country, the rest of the ZEV states makes sense, and they also are willing to accept it.

But I don't think a loss -- if that's really what it is -- and I know there is a question about the numbers and the calculations. But if there is a loss of a certain number of vehicles that we can project as a result of making this change, in my mind, the fairness to these manufacturers does not outweigh the purposes of the program, which is to get the vehicles on the road.

So I'm not willing to support the proposal that the staff put before us in its entirety. I guess I would support two out of the five ideas that are in that. And you know, others may feel differently. Obviously, we have a Board here for a reason. But I just wanted to put that forward for discussion.

Mr. Gioia.

BOARD MEMBER GIOIA: Thank you, Chair Nichols.

With sort of laying some of this out and also getting back to Dr. Sperling's comments a bit earlier too that we do learn, we try to be flexible. And I think that was the intent here. I think we always have to look at the specific details of what we're trying to do and the symbolic action as well. And I think what you referenced really tries to address both, a little bit of the

specifics of trying to be flexible, but at the same time, concern I think the proposal has gone a bit too far.

We want to send very strong signals to the market, to the manufacturers that we need to continue to be aggressive. I think we heard today that there are things that the manufacturers and dealers, they can do more. You know, I hear a lot about the failures to sell as many vehicles as desired in the 177 states. But I think some of that -- not all, but some of that is due to I think the failure to be aggressive by some of the manufacturers/dealer networks. And there is a relationship. So I agree.

I think that we need to be really thoughtful. And I'd like to hear more about how staff thinks about this and taking this back that any message that was -- anything that resulted in a decrease in the number of vehicles, however small I realize that is, is not a positive message to the world and the world of folks that we deal with here that are really making the technology investments.

So I come down the same way. And I know we heard earlier -- I don't want to get off -- we heard earlier some additional proposals for us to consider about how we calculate credits. And wanting to change -- increase credits and change them so that those other vehicles whose

electric range is not quite as great get more credits.

The way I thought about that is are we rewarding manufacturers for what is being done now, which is the status quo, or do we want to reward them for what we hope to achieve, which is really more advanced technology with increased range.

And so I sort of -- my same thinking, while it's preliminary, you know, it's meant -- because we're going to be asked to provide a little direction on that issue as well as I think we need to continue to be aggressive about forcing or incentivizing or requiring all of those things, the advanced technology with the increased range.

So I was giving thought to that proposal since when I first heard it. And it sounds fair that you get credit based on the electric vehicles miles driven. But I thought what we're trying to achieve is increase the range.

So that's my thought.

CHAIRPERSON NICHOLS: Okay. Did you have a comment, Ms. Berg?

BOARD MEMBER BERG: If you're ready to call on me.

CHAIRPERSON NICHOLS: Sure. I'm happy to. I didn't see other hands waIving.

BOARD MEMBER EISENHUT: I have a clarification.

Well, the issue that BMW raised, is that an appropriate topic for this motion?

CHAIRPERSON NICHOLS: We're not having a motion anyway. So we can raise any topics that you would like to.

BOARD MEMBER EISENHUT: At the risk of expanding this discussion, I was struck by their request.

CHAIRPERSON NICHOLS: Okay. Well, she was asking for us to give the Executive Officer flexibility to change a deadline, which frankly he may have anyway. I'm not sure. Let's put that on our list of possibilities.

STAFF COUNSEL WHITNEY: Daniel Whitney, Staff Counsel.

That change would be outside the scope of this 45-day notice. We would need to address that in a separate rulemaking. And the ED doesn't have discretion to do it without the rulemaking.

CHAIRPERSON NICHOLS: Okay. Well, then that will require another rule. Okay. Good. You were out of order. But nice try.

Thank you, Ms. Berg.

BOARD MEMBER BERG: Thank you, Madam Chairman.

Madam Chairman, like you, I'm very invested in this particular program. In 2012, I was very involved with the IVMs and with staff working through these

changes.

And one of the things that strikes me and I get pretty worked up about it is that when we're working on something that is as complicated as ZEVs and looking at philosophically how we're going to push this forward and looking at a change, which was originally intended on bringing in very specific manufacturers, many of which were not on the IVM five list and now are going into large manufacturers, it's often suggested not only by staff but by NGOs that we can work through these things. We argue our various points. We raise concerns. We have discussions at Board meetings and we remain open to data and to consequences and the flexibility to be able to change.

And yet, here, we are just before us with Board direction that was given that we would stay on top of this issue. And yet, when we are going to look at it, we're weakening the foundation. We're sending the wrong signal to the marketplace. I'm really in very much disagreement with those statements. I believe what we are doing is, in fact, fulfilling what we said we would do and that was understand the impact.

What's interesting to me is the intent of what we wanted to do in 2012 in pulling in the very successful global manufacturers and manufacturers who have customers

that are perfect for this level and this time for advanced technology, we've been successful at that. And what we're looking at now is the smallest of the intermediate volume manufacturers. And to suggest that, in honestly, a marketplace that has still a lot of challenges that in a short period of time they can sell 31 percent of their volume in advanced clean technologies, I think it is a fairness issue.

And I think that if the large manufacturers aren't called to do it, that our -- and they're coming back to us and saying they're having issues. I agree we've got to stay strong. There are things that I'm very concerned about. I'm concerned about the credits. I'm concerned that when we look at slide twelve, the current sales trends and looking that with credits we go to 2020, I think there are -- the midterm review is going to be critical. And I think there is no question that putting the pieces together that Simon talked about in his testimony are just going to be absolutely paramount to make sure we're on the road to head towards 2025.

But what strikes me about what's in front of us today is that these people are transitioning into large manufacturers. And we've had time to transition the other people who started out as large manufacturers have had that time. They've had time to bank credits. They've had

time to have other market advances along the way and we're still struggling.

So I do support some version of staff's compliance. I support all five. I also would support maybe not bringing that line down to 13 percent. Maybe there is a different number that we should be looking at. I'd be happy to discuss that. But to keep it where it is and have these manufacturers go into 2018 being thrown into the large manufacturers I do not believe is the right thing to do when you're talking about a group of companies that represent seven percent of the marketplace.

And so that's my input for you.

CHAIRPERSON NICHOLS: Okay. I have Mr. Serna and also from Mrs. Riordan. So we'll venture into this side because Mr. Roberts had his hand up, and keep going.

BOARD MEMBER SERNA: Thank you, Chairman Nichols.

Not so much commentary, but some -- I guess it is sort of commentary, but more questions for staff.

Some of what was presented I think is going to be important for me to understand when we do have a resolution. That's understanding -- given the complexity of the regulation and the fact that we have emerging technologies that are just now coming on the marketplace, such as fuel cell, in the course of implementing the regulation, I haven't really heard that much from staff

about what changes that might have on the dynamic of what we are being asked to consider.

Now, we have the luxury now of considering the resolution at a later date. But that might be something that if there is an opportunity to hear from staff, I would certainly be one to want to know more about that.

And then secondly, the other thing I didn't hear a lot about was what implications do these proposed changes, either as is or perhaps more modified format, what changes will happen to the secondary market? Or do we think might happen to the secondary market?

One of the things that I'm very interested and concerned about is whether or not what we change in mid course, how it effects the volume of cars, hopefully ZEVs, that are out in the marketplace, how could that adversely change consumer behavior just by way of understanding that the state of California might be changing midstream their -- what is perceived to be their intent to really try and promote as best we can ZEVs in the primary and secondary market. But in the secondary market especially, I think there's going to be more and more attention paid to what is happening by way of everything under the sun relative to this regulation.

So I think those are two areas where I certainly could use more information: Fuel cell coming onto the

marketplace and implications for the secondary market.

CHAIRPERSON NICHOLS: If you don't mind, let's go through the whole list of things the Board members want and then have staff respond.

Okay. Mrs. Riordan.

BOARD MEMBER RIORDAN: Madam Chairman, I feel Ms. Berg stated things perhaps very clearly for me and my position. I think her thought about some modifications to the final requirements for the intermediates might be made from what staff is recommending.

But I clearly see I believe a very big difference between those who are significant manufacturers in this program versus the intermediate manufacturers. I recognize that there is lead time. There's resources that may or may not be available for corporate decisions. And these are clearly something beyond our control. I mean, we can hope for the very best and the success of the program, but we also have to recognize the reality of success. And so if you were to ask for a position, it would certainly be along the lines of Ms. Berg's comments.

CHAIRPERSON NICHOLS: Okay. Mr. Roberts.

BOARD MEMBER ROBERTS: Thank you.

First of all, I don't want to lose what Professor Sperling has interjected into this. I think he really has done an expert analysis on a major flaw here in what we

were doing. I want to respond to that.

The testimony here has been very enlightening. We've end up with an afternoon of dry concrete versus wet cranberry. You know, that to me is very helpful. I guess I've been on this Board for long enough to know that we had things that we've had to do in the past to end up with successful programs. They haven't always been universally understood, especially when the original ZEV mandate had to be modified, which when we had to make that step, we were castigated. There was a fine movie made, "Who Killed the Electric Car?" I think we were the ones that did it.

CHAIRPERSON NICHOLS: I was not. I came in later and saved it.

BOARD MEMBER ROBERTS: In actuality, what we did was open to door to hybrids and other things before you got here. I don't want you taking the credit you don't deserve. You do deserve. In any event --

CHAIRPERSON NICHOLS: It's getting late in the afternoon.

BOARD MEMBER ROBERTS: I think if you look at what happened and what was predicted, I feel very comfortable what the Board did at the time was the right thing.

And I think we've got another one of those decisions where we're really confronted. When you look at

some of these charts and you see what we're going to be requiring 31 percent of the sales, that's not realistic. It's not fair. And I think at the end of the day, we need to be -- I think we have to be fair. We want to get the results and from a performance standpoint. I think we're going to get the results. I think the staff has brought back a good recommendation in all of it's five areas. I feel that I can support those, and I would do so.

There was a leftover item from this morning regarding the data analysis that was presented to us and whether -- I thought we were going to discuss it prior to this issue where we were asking to refer to the staff.

CHAIRPERSON NICHOLS: Yes. The morning request by the five large volume manufacturers wanting us to find a way to give them more credit for their sales of hybrids.

BOARD MEMBER ROBERTS: What I heard was they wanted us to refer for analysis.

CHAIRPERSON NICHOLS: Yes. No. I'm not sorry. That was a shortcut.

BOARD MEMBER ROBERTS: Yeah. Okay.

CHAIRPERSON NICHOLS: They weren't us asking us to do it on the spot.

BOARD MEMBER ROBERTS: I thought we were going to discuss this as part of the item. And I would support referring that to the staff also, not with any direction

of creating a policy, but take a look at it and come back with some thoughts if it is, in fact, accurate.

So I guess what Professor Sperling has said, what efforts you and my other colleagues here say with respect to the staff recommendations, I support them and I move them forward to the staff.

CHAIRPERSON NICHOLS: Great. I don't think there is any disagreement about that.

Anybody else down here wish to raise their hands?

BOARD MEMBER MITCHELL: Thank you.

I was, like our Chairman, a bit taken aback by the extent of these amendments.

And as you heard from people in my district, we have a very steep challenge here. We need NOx reductions requirements that are imposed by Clean Air Act. And that is an issue that is specific to South Coast and also to San Joaquin Valley. And so stay the course or be more aggressive is the message from my district.

I think if there was movement to quantify this to any degree, the modification to the definition of IVMs and the pooling requirement would be the only modification that I think could be supported.

Other things that were discussed in connection with that with the amendments was the lead time. And the way this is written, that lead time pushes the time to get

BEVs in the market. It pushes it as far as out as 2029. And when you add up all the possibilities that go along with that and we have a Governor's initiative to have one and a half million BEVs on the road by 2025, so it kind of just puts the IVMs completely out of that market.

The other thing is the extension reduction in the ZEV percentage requirements. I think that's also a mistake. The technology is here. We all walked outside and saw all the vehicles that are available now. Battery technology is here. Vehicles are here. And it takes willpower and some guts to get that market going. We need everybody to step up to the plate and work hard to get there.

The other thing that was discussed was the battery swap. I agree with Dr. Sperling that the regulation that was proposed is way too generous and we need to take a second look at that.

The other item that came forward was e-miles. And while I find that to be an interesting proposal and could perhaps become part of the program, I would prefer to hold that off to the midterm review. The reason for that is that our data is not very complete at this point. This is a new market. These are new vehicles. We have some data. But the whole market is changing. So I think we should push this out. Staff is looking at it already.

They have continued to look at it. I assume they will continue to look at it and come back when we have more complete data. But it's something to hold out there and keep looking at because it could be another part of this program. Thank you.

CHAIRPERSON NICHOLS: Thank you. Dr. Sperling and then Professor Sperling and then last word goes to Mr. De La Torre. You want more. Okay.

BOARD MEMBER SHERRIFFS: Thank you.

Thanks to staff for all their hard work on this and time they spent with the five and sorting through these issues.

I'm horrified about the battery swap. And clearly, that's something that we want to as quickly as possible to correct. And it's a reminder I think soon we ought to hear again how these credits work, how many there are, where are they, how that flows so that, in fact, we all have a better understanding of that and see what's happening with that.

As a driver of an all-electric car, I know if I want to go far, I should probably go slow. But we don't want to go too slow. You know, we need to get that certainty in there.

So it seems very appropriate to move forward potentially on a couple of these today if that, in, fact

gives some certainty and simplifies what needs to be considered.

In terms of the definition for IVMs and the pooling and the other issues, it sounds like there's some complexities that we do need to consider a little bit more to get it right.

I'm reminded in all of this discussion, boy, what can we be doing to facilitate more in these small manufacturers who we're looking for fairness, but I also look at some of the things they're doing. One, I'm convinced of their commitment to innovation. And the fact that I hear about these things going on in Europe. Well, they may be small, but they seem to be very thimble. And as we try to work with this and what's different about them and not disadvantaging them, but how do we encourage that? How do we facilitate that more?

And the other aspect, it's been good today, because we thought about a lot of different things and that goal we all have of 1.5 million vehicles -- no, we want two million. We want 2.5 million. There are all kinds of thing that can make that number even bigger than what we set as a goal.

And we've had some discussion about what some of those issues are in terms of infrastructure and in terms of how to bring the dealers into the discussion and

encourage them.

So I think that needs to be part of the considerations as staff looks at this again. Thank you.

CHAIRPERSON NICHOLS: Thank you.

BOARD MEMBER SPERLING: Two parts. Let me respond to that IVM issue. I have a couple other thoughts.

One thing that concerns me is the issue of the integrity of the process. And I haven't been very much involved in it, but I've been observing what's happened. And my memory of what happened in this process was that after 2012, there is a question of how to actually transition the IVMs. And there was a lot of discussion with staff. And there was a lot of confusion and staff said, okay, why don't you all get together and come up with a proposal to us. And that is something unusual for companies to do. They did. They spent a lot of time I know, a lot of effort, and came up with a proposal. Staff dismissed it, said, you know, this isn't right. And it was a process that went back and forth over a period of I guess a year and a half or so. And there was a lot of integrity in the process in terms of the IVMs and the staff and a lot of time invested in it. And all things equal, I think we do want to give some credence to these kinds of processes when they do take place. So I have

that concern.

I also have -- so that does suggest that something like -- I do support something like the staff proposal for that reason. And also partly because when I look at the lines in terms of number of vehicles, the one that's really striking to me is the one percent of sales. And the number of vehicles is actually very -- is very similar for large vehicle manufacturers as a percent of sales as compared to the smaller companies. The difference is that the large ones are going to do more pure EV battery EVs and fuel cells.

I can imagine an adjustment would be move that line, which I guess is 13 percent, up to 15 percent so that the IVMs do produce and sell the same number of vehicles per unit in terms of their market share as the large companies. And that seems to me a good compromise that makes sense.

And I especially like it because -- I want to come back to this a moment. I don't know if I should do it right after this or afterward. And that is this EVMT issue, but it relates to that. And that is that if they do all PHEVs, I'm actually quite fine with that. I think we need a re-thinking of our philosophical commitment that our -- that we need to go quickly to pure EVs. And I was trying to work out a good metaphor for Dr. Sherriffs of

going slow or fast.

So I think if they're doing the same number of vehicles but they're PHEVs, that sounds good to me. We are trying to get vehicles out there. And I'll come back to -- I don't know if I want to talk just a few minutes about the EVMT issue. So should I do that now?

CHAIRPERSON NICHOLS: You're on a roll.

BOARD MEMBER SPERLING: I'm on a roll. The one last part with IVM is we're really only talking about two percent difference in terms of the total number of vehicles sold in 2025. As I just pointed out a moment ago, we just saved 100 percent. So it's hard for me to get too excited about small change here. There are much bigger fish to fry. There is much more at stake here. We do want to strengthen and improve the ZEV mandate.

And so let me come back to this EVMT issue, because I guess I was kind of the one that started us down this path a few years ago. And I think there is a lot of misconceptions that have come out about what we're talking about. And part of the problem is that the only real proposal that's been put forward is by a few of the car companies. But that's just one way of designing it and measuring it. There's other ways to do it. And what I would think is that I like the concept of an EVMT because it is performance-based. It's much more transparent than

what we have now, and I see it as a mechanism for increasing the number of vehicles sold. And so I see that as a framework for strengthening the ZEV mandate, not weakening it.

I think part of the problem -- part of the issue is everyone's focus on the data and the INAL numbers and just questions about those numbers. But I see EVMT program structure being based on real data. So if we were to implement it, we would say to a company that we're going to assign a default value to you in terms of past data. We're going to be conservative. And if you think that your vehicles are getting more miles, then give us the data, and we'll give you the credit for it. And that has the benefit of getting actual data. It also has the benefit that now the car companies are invested in their vehicles being used. That makes them a constituent, a stakeholder in charging infrastructure and everything else that needs to be done to encourage vehicle use.

So I see the EVMT. And there is another element to it. It's gotten really confused. The reason why I initially suggested it back in 2012 is we started dealing with all of these different kinds of vehicle technologies that were coming before us. So take the BMW I3 with respect a range extender on it. It's 100 miles and another 80 or 90 with the little more motorcycle engine.

And the question is, it's not a pure EV. So we're going to give it less credit when, in fact, what's likely to happen with a car like that is more people will buy it because it is more user friendly in terms of the range issue. And they're likely to drive it more because now they don't have to worry about running out of electricity. They can go another 20 miles or whatever and they'll take it on longer trips.

So in the end, there is an example of a technology that actually will be possibly better than a pure EV, and yet, we don't give it the credit. So I think the credit issue in question of how to handle PHEVs and BEVs is really something we have to come back and rethink that it's not clear to me. In fact, I've come to believe that the path forward towards 2050 or towards very low carbon vehicle, zero emission vehicles is with much more emphasis on the PHEVs. They're going to get much more acceptance. I'd rather see two PHEVs than one battery EV. I think that's going to lead us -- conditions the market. It develops the supply chain for the manufacturers. Gets people accustomed to it.

So I know we're not going to make any decisions on that. But I really do I urge the environmentalists that have kind of a knee jerk reaction against not doing the pure EV and against even ARB has historically -- we

set our goal is pure EVs. I think we need to rethink that strategy in terms of how to get from here to some future point of very low carbon vehicles.

CHAIRPERSON NICHOLS: I would call on the others and then I'm going to respond to that.

Hector.

BOARD MEMBER DE LA TORRE: Thank you. Thank you everybody for sharing your views on this issue. And clearly every one of us -- we don't normally all talk on the topics that are in front of us. And here I think we've all had our say.

I feel after having met with the manufacturers, having met with other folks that have been briefed by staff, I do agree that we have to honor the process, but that doesn't mean that we agree with everything, either with each other or even with what staff has put together. And in this case, I think they got some of it right. And I think they may have gone a little too far for my taste and I think for many of my colleagues.

It has only been two and a half years since we did this. And I do realize that just last year we gave direction to staff to have these discussions about what we do with these manufacturers. It was clear to me then and it's clear to me today that that group of manufacturers does need to be treated differently. They are different.

When you look at the chart, that's very clear there is a breaking point between the large and this patch of folks. So I think the definitional change is absolutely appropriate. It makes sense when you look at the numbers.

That does not you dictate the other four things that are here as policy changes. And so in looking at those other changes, I think we need to keep faith with what we did two and a half years ago for the most part. And we cannot make a change two and a half years in on how we adjust our numbers for ZEVs in this state of California. We are making progress.

There's twelve cars out there that show that we're making progress. And I think from that conversation two and a half years ago, the number one thing that I came away with from this Board was we want consumers to have options. And that is still the case today. And if we make all of these adjustments, those consumers are going to have less options. And that goes against everything that we talked about two and a half years ago in setting the ball rolling on these policies.

We want them to have a Mitsubishi option. We want them to have a Volvo option. Me wife drives a Volvo. I would love to have her have that option.

You know, with the other manufacturers -- I don't mean to single those two out, but they come to mind. We

want them to have the option in those vehicles in addition to the large manufacturers. And so I think the definitional change I think keeps faith with what we assessed last year and two and a half years ago.

I think the pooling of their obligations in the Section 177 states keeps faith with that as well.

Other than that, I think the other changes are too significant, make too much of a change to what we set two and a half years ago for us to go forward with. So I strongly feel that we should just stick to those two changes. That keeps the market roughly where it is right now, where we set it two and a half years ago and we move forward. If somewhere down the road something completely different happens, then we adapt and change at that point. But I think two and a half years in, with the progress that's been made, we stayed the course on where we are for the good of the locations that are not in compliance and for the good of the people of California. They'll have more options to buy these vehicles when they're out there looking for cars.

So I think that's where I stand after looking over this, after having all these meetings, that is that we should stick to those two because that keeps faith with where we set our path two and a half years ago. Thank you.

CHAIRPERSON NICHOLS: Thank you. Now the last word goes to our quietest Board member, Mr. Eisenhut.

BOARD MEMBER EISENHUT: Thank you. Last and briefest. Thank you, Madam Chair.

I'm concerned about fairness. I'm more concerned about the mission of this Board and this entity. I think the adoption of the staff proposal will dilute our mission. If we engage in a discussion about details as has been indicated, I'm most concerned about the additive nature of the lead time and the credit recovery, that those are addictive numbers that puts us eight years out. And if we do engage in any sort of discussion, I would request that those be clearly on the table.

So that's -- and I'm aligned with clearly supporting two of the bullet points and have reservations on the other three.

CHAIRPERSON NICHOLS: Thank you. Okay.

Let me try doing the Chairman job here. So in terms of direction to staff because we're not going to be voting on any final rules here. I take it that -- and I can do this just with kind of maybe hand waiving or head nodding or something. I don't think we have to take a formal vote on these.

In terms of the issue about the battery swapping, I'm advised that we are unable to move on that fix without

doing a new 45-day notice. That doesn't mean we shouldn't do it. I think we have support on this Board for directing the staff to fix that and put on a new notice. Okay. Got that one.

With respect to the intermediate volume manufacturer proposal, I think we have 100 percent agreement on two of the five. And so the only question is what do we do about the rest of the proposal? And having expressed my view that I thought that the proposal went too far and the other areas, I also am interested in appeasing the family and in fairness as well. And I'm going to propose that in sending this back to the staff to work on that we would give them direction to explore whether they can come back with a modification to the proposal that results in somewhat greater flexibility and deference to the IVMs, but does not result in any significant measurable loss of momentum or numbers of vehicles that meet our requirements. If there is a way to do that, then I'm going to be for it. If there isn't, I'm not going to write it off as trivial. So it's not a statement that I know that there is an answer there. But I think there are enough laws in this so that they need to do some more work. And if there is a way to draw that line, then I'd be prepared to support it. If not, not.

Is that going to be acceptable to you, Ms. Berg?

BOARD MEMBER BERG: Yes. I just have a question for staff, if you don't mind. And in calculating the models for sales or for compliance, how do you work in the calculation of credits? In looking at how a manufacturer might comply with a certain regulation, do you have the various categories? And so you're looking at, you know, their size, their R&D capability, what they might currently have on the market. And there is a modeling effort that you plug in. How does that modeling effort take into consideration purchasing credits as a mechanism for compliance?

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH CHIEF BEVAN: In our compliance scenario, we don't take into consideration the purchase of credits. We make assumptions about the vehicles that would be produced in order to make the requirements. We assume that manufacturers take the maximum flexibility allowed under the regulation.

So we assume that IVMs, for example, will make maximum use of their flexibility to meet the regulation with TZEVs, and we assume the large volume manufacturers maximize the use of TZEVs and also meet the portion of the regulation that must be met with ZEVs with a combination of battery electric and fuel cell vehicles. We modeled that in 2012 with TZEVs on average having a range of 20

miles and earning .7 credits. And the mix of battery electric and fuel cell vehicles changing over time through the 2018 to 2025 time frame with an increasing percentage being made up of fuel cell vehicles. So the average credit earned in the pure ZEV portion increases over time.

BOARD MEMBER BERG: Thank you.

So I think, Madam Chair, maybe in looking at where that flexibility might be, I think it's unrealistic to take that there will be no credit used. And so maybe some direction to staff might be to look at -- I guess I'd like to see a zero -- we're looking at zero loss, not one car lost. Yet, this is all modeling. And our very best guess as to what's going to happen.

So I think that I'm not sure how I would feel if I were staff right at this moment on what to come back with. But I certainly would be interested in looking at some other options. But zero isn't my criteria, just to let you know.

CHAIRPERSON NICHOLS: I hear you. Alberto, do you want to respond to that.

DEPUTY EXECUTIVE OFFICER AYALA: Well, I just wanted to point out to Ms. Berg's point, we can come back if the Board direction and interest is to minimize the loss of vehicles due to a reduction in the ZEV requirement. We can come back with a Scenario that

achieves that and working to staff proposal, that scenario, which is different than what we brought you today. So I think there is a possibility for us to do that. How close we get to a zero loss, we have to run the numbers and use a calculator.

CHAIRPERSON NICHOLS: Well, I accept the fact that these numbers aren't perfect as they are today. So you know, sometimes I wish you could just go in the back room and squint a little bit at the numbers and come out with the right result. But I'm not going to suggest that you do something like that. But you could make me happier if you do that. There's perhaps a range or a margin of error in these things and that might help us sometimes.

BOARD MEMBER GIOIA: I do think we operate in a world perception of what we do is very important. So that's why even the 25,000 reduction, which may not seem like a lot in the total sphere, is viewed as ARB decreases requirement for ZEV vehicles. That's the message that goes out there and that's frankly a very --

CHAIRPERSON NICHOLS: Unacceptable.

BOARD MEMBER GIOIA: -- powerful negative message. That's why I think we can figure out how to balance the details with the general message, which was symbolic, is important to carry forward because everyone has said with the mission it's taken a lot of work by

folks here and in this room and elsewhere around the state to get to where we are today. And I think it's important to continue pushing that.

Otherwise, we end up weakening the message that everybody is working on and that has a negative impact.

CHAIRPERSON NICHOLS: Thank you. So I think we have enough consensus here to send this back. The staff has enough direction as to what they're supposed to be working on. So we're good with that.

With respect to the request by BMW for an ability to make an adjustment on the timing, we don't have the ability to make that happen as of today. It does remind me, however, that within -- and other rules I have often thought that there are potentially truly minor adjustments that could be made in cases involving individual hardships where somebody missed a deadline or failed to submit a piece of paper when they were supposed to or whatever, that probably would be a good thing to let the Executive Officer deal with. I'm not talking about failure to submit reports. I'm talking about failing to take advantage of some option. Maybe that isn't something we want to do. But I think for future rulemaking, we should be looking at a possibility of some degree of Executive Officer discretion in implementing really complicated rules, but we won't have to do that today.

On this issue about electric vehicles and the data, looking at the data is a part of that I think. It's intended to that. We've clearly all said we want to look at real world data. That's what we're in the business of doing. We should be figuring out how many people are using the hybrids and advanced hybrids and plug-ins and how many is electric and gathering every bit of it.

Now, I'm going to say I fundamentally disagree with my colleague Dan Sperling about how we're going to get to where we want to go. As I read the needs here and I think we should be driven not by a desire to manipulate a market, but by a desire to solve a problem, which is the unacceptable amount of air pollution and greenhouse gas emissions that are coming from our transportation sector, trying to look at it from that sort of bigger picture perspective.

It's possible that he could convince me that the road to that lies through years and years of slightly more advanced hybrids out there and that he has a way to define it that could induce the companies to do better and give us more leverage over them in their compliance than we have right now. But unless he's willing to go back and put the resources of his wonderful institute to work and actually come forward with a proposal, I'm not buying it.

I think that the ZEV mandate is fundamentally a

simple goal. I mean, it really is a vision of where we're trying to get to. It's a fairly dramatic and difficult vision, as it turns out. But we know from our own assessment of where we're trying to get that by 2030, 100 percent of the vehicles sold in California had better be essentially zero emission reduction technologies vehicles looked at on the life cycle basis. By the time we get to 2050, we have to change the whole fleet.

There are things we can do to get more people to use transit and get cleaner fuels. There's lots of things going into that mix right now. But to suggest that we can sort of fine tune our approach towards vehicles and create a cleverer approach to building a market for really clean, really advanced technology vehicles, I just am not yet convinced.

I think there is a resistance in me which is if you have something that clearly is working and is picking up steam and is producing the kind of really exciting vehicles that we're seeing out there, you don't want to undermine that or mess with it either. So we can continue to have this discussion, and I think we should.

In fact, if there is anyone watching this either on their computer or in the audience who doesn't believe that this is a Board full of people who are really thinking and really committed, I don't know where you

would find a better example anywhere in the world of a public deliberating body struggling with a really big issue.

But having said that, I just want to say I don't want to send a message -- and this is a message sending business, to some extent. We're not just a group of academics speculating about whether there might be a better thing out there in the world we could do. We are fundamentally operating in a political world. And ZEV was a decision that was made by a dually constituted political body actually in the Republican administration, and it's maintained a life of its own with various tweaks and permutations up until now. And I don't want anybody out there to think that it's suddenly going to be morphed into some new and different program with a new name or a new approach. So that's my piece on this. We are now --

BOARD MEMBER SPERLING: Let me -- one minor response.

CHAIRPERSON NICHOLS: Okay.

BOARD MEMBER SPERLING: I'm willing to make a bet with you in 2030 if we provided a more flexible approach we are likely to get far more e-miles in 2030 than we would with pure EVs. I just don't -- I really don't believe by 2030 we're going to be able to get a really large market penetration with pure EVs. So you know, we

have the same goals. I'm just saying I don't know the answer, but I'm saying that given that we don't really know how to do it, leaving it to consumers and industry to meet the targets tells me what we really want and it's a continuing discussion.

CHAIRPERSON NICHOLS: We're going to have to do that clearly. I don't think we're as far apart as that might sound. I don't want to leave any impression that next year we're going to unveil some totally new program so people should not be making the investments they need to be making right now to meet the rules that are on the books today. That's the main point I wanted to leave you with.

We are half an hour over the time when we invited people to come celebrate the awarding of the Cool Cities. We need to do that.

We also need to hear from two people who signed up to give us public comment, both of whom I believe are going to be talking to us about transportation fuels under the cap. They get three minutes each under our rules.

BOARD MEMBER SHERRIFFS: I want to congratulate the staff. Two out of five, that's point four -- good job.

MR. HULL: Madam Chairman and members of the Board, I'm Tupper Hull. I'm Vice President of the Western

States Petroleum Association.

The Giants will win the World Series.

I'm also a driver of an electric vehicle, a Chevy Volt. However, what I want to address tonight is not one of the items on your agenda. So thank you for the opportunity to speak during a public comment period.

Obviously, the issue as you mentioned that we are concerned about is the expansion of the cap and trade program to include transportation fuels on January 1. The issue I'd like to raise today is a white paper that our association commissioned that looks at a number of what we feel are very serious design issues in the current program that we believe should be addressed and must be addressed before the January 1st expansion.

Our President, Cathy Reheis-Boyd, submitted that paper to you, Madam Chair, and I believe the other members of the Board. I'm happy to enter it into the record again today.

A couple of issues we'd like to clarify or make very, very clear. Our Association does not and has never opposed the use of market-based systems like cap and trade to reduce greenhouse gas emissions. What we have said consistently is that those programs must be fair, must be efficient, and must be designed properly to provide the maximum benefits at the lowest possible cost.

We believe these issues that Jean Pierre Bason who has identified in the white paper do very measurably address those features of the current program.

We are also not asking the Board, as some I understand believe we are, to repeal the regulation expanding the program. We are asking for a delay. The reason we would ask for the delay are three-fold: One, to address the issues that the white paper has raised prior to the expansion and to give the Board and the staff a time to evaluate whether there are ways which the white paper does offer solutions to the issues raised.

We also do believe as well the Californians are not well informed about this program, nor are they prepared. And learning about it through higher costs that would very likely appear in the retail level could have a negative impact clearly for our members, but also for the Board and the state and the ability to achieve the environmental goals that you want to achieve.

For these reasons, we would ask that the white paper be given consideration, that we have an opportunity to meet with the staff and review those, that the Board take some time to consider them. And I will submit them into the record. Again, thank you for allowing us this opportunity.

CHAIRPERSON NICHOLS: Thank you.

And we had one other witness on this, Mr. McKinney.

MR. MC KINNEY: Thank you, Madam Chair and members of the Board. My name is Bill McKinney. I'm here today representing the California Drivers Alliance. We are a nonpartisan coalition of consumers, fuel producers, and retailers who have major concerns about the impact on motorists from the planned January 1st, 2015, expansion of the Cap and Trade Program to gasoline and diesel.

We are here today to present the Board petitions which have been delivered to the clerk signed by more than 115,000 Californians asking you respectfully to delay the implementation of this impactful regulation. Bringing transportation fuel into the Cap and Trade Program will be the first time most Californians will be exposed to the direct impacts of California's climate change policies.

We can tell you the overwhelming majority of California's 23 million motorists will be directly impacted by this regulation or unaware it is coming and will have no idea why they are seeing their fuel costs rise. We understand why this program was developed and why it was necessary to address greenhouse gas emissions produced by cars and trucks.

But we also feel that it is important that consumers who will be paying higher fuel costs as a result

of this program be willing and informed partners with you as you attempt to achieve the state's greenhouse gas emissions reduction goals.

The only way that partnerships can be created and nurtured is through education and awareness. We understand this expansion is scheduled to go into effect January 1st without any additional action or public discussion. We don't know the extent to which your staff has had public meetings and workshops about this regulation, but it seems to us there has been almost no real dialogue with the public on this issue or any attempt to educate consumers about it. We believe this regulation amounts to hidden gas tax on consumers, hidden because there has not been any significant effort to educate consumers and a tax because it will transfer billions of dollars from pockets and fuel producers and fuel users to the state of California.

We would like to draw your attention to economic impact report that California Driver Alliance released on September 16th. This report by Dr. Justin Adams of Encina Advisors quantified the impacts this regulation will have on workers and the California economy. I have a copy of the report with me if you would like to review it.

Dr. Adams concludes the higher cost associated with this regulation will result in a lose of 18,000 jobs

in 2015 alone and nearly three billion dollars in lost economic output at the low end of the impact range.

At the upper range, job loss could reach 66,000 and economic dislocation can top $10 billion. It seems to us entirely appropriate and reasonable to ask that a program of this magnitude with an impact as far-reaching as it will have be subjected to a more open and transparent process before it goes into effect.

For these reasons, we ask that you delay the program and undertake a public education program to inform California consumers why and how it is being implemented.

We would also ask that CARB provide the public one or more opportunities to be heard on this important issue. Thank you.

CHAIRPERSON NICHOLS: Thank you.

And if you're interested, I'm happy to supply you and the members of your organization with a list of twelve publicly noticed meetings and workshops that were held by the Air Resources Board, all of which were attended by representatives of the industries that are part of your coalition, as well as people who are consumers of gasoline in this state, including ourselves, as well as copies of detailed testimony that was submitted by WSPA on this entire issue going back as far as 2009.

So I think in the interest of fairness, you

should also take a look at that as well. Thank you.

BOARD MEMBER GIOIA: Madam Chair, can I make one comment?

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER GIOIA: You know, I realize this white paper just came out. There is already some analysis of some of the weaknesses in the white paper. So I want to be clear, because already folks are starting to look at the white paper that WSPA had produced that identified some flaws in the white paper itself.

Second, there was a comment that this is all revenue to the state, where, actually, a lot of the cap and trade revenue is going to flow down to local communities in the forms of programs like energy efficiency and homes, how we work on cleaning the air in local communities. It's actually not all to the state. Much of it goes to local communities.

Third, this idea that there wasn't notice. I think you've well laid out that there has been much discussion about this. But frankly, coming from a county that regulates safety of several oil refineries, we understand that when a refinery has a maintenance, a turn around, an industrial accident, the public is not aware have the incidents around the state, but the price of gas goes up. If you live in Fresno and you may be paying an

increased price of gasoline because there was a turn around or maintenance or accident at an oil refinery somewhere in the state that effects production. That's not noticed to the public.

So this idea that there is not notice to the public just seems ridiculous. There was discussion for years about this program. And as we all know, the price of gasoline is very volatile and is due to many different factors: World market supply, demand, maintenance, all of these things. So I just wanted to add that.

CHAIRPERSON NICHOLS: Thank you.

I think that concludes our public comment period.

And now it's time for the most fun -- it's certainly one of the most fun things we'll do at this meeting, and that is to present the awards for the CoolCalifornia competition. And we are really privileged to be able to represent cities that are blazing new trails toward California's climate goals.

Today, we're going to be acknowledging the accomplishments of the top three cities that participated in the latest round of the CoolCalifornia City Challenge, which is an innovative carbon footprint reduction competition designed to strengthen the connection between cities and their residents in pursuant of California's climate goals.

So it's with great pleasure that I ask Mr. Corey to introduce this item.

DEPUTY EXECUTIVE OFFICER COREY: Thank you, Chairman.

The AB 32 Scoping Plan points out that achieving California's climate relies on strong partnerships with local governments and active participation of all Californians. Many local governments in California are already leading the way in their efforts to address climate change. We applaud their work.

This innovative competition is part of a CoolCalifornia.org collaboration among ARB, the University of California at Berkeley, and the nonprofit Next 10. The City Challenge is also partnership with Energy Upgrade California to encourage voluntary energy and greenhouse gas emission reductions at the household level.

Tabetha Willmon of the Research Division will provide some background on both CoolCalifornia.org and the CoolCalifornia City Challenge. Then she'll ask the Chairman Nichols to come down to present each city with its award.

Tabetha.

MS. WILLMON: Thank you, Mr. Corey.

Good afternoon, Chairman Nichols and members of the Board.

This afternoon, I'm pleased to present the CoolCalifornia City Challenge Awards.

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MS. WILLMON: As you know, ARB is pursuing a variety of strategies to meet California's climate goals. The Scoping Plan points out that California will not meet these goals without the active participation of individuals and households. Recognizing that voluntary greenhouse gas emissions reductions are an essential component of California's effort to meet the AB 32 and 2050 goals, ARB has developed a variety of tools and resources to support voluntary efforts.

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MS. WILLMON: The CoolCalifornia.org website was developed through a partnership among ARB, the nonprofit Next 10, and the University of California at Berkeley. The goal of the program is to provide easy access to tools and resources to support voluntary efforts for local governments, small businesses, households, and schools to reduce their greenhouse gas emissions.

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MS. WILLMON: Resources housed on the CoolCalifornia.org website include carbon calculators for households and small businesses that not only help their understand their activities that contribute to greenhouse

gas emissions, but also provides a comprehensive list of actions they can take to reduce their carbon footprint.

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MS. WILLMON: CoolCalifornia has also created a searchable database of financial incentives for emissions-reducing projects and purchases --

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MS. WILLMON: -- and contains highlights of nearly 100 emission reductions success stories as well as recognition programs, such as CoolCalifornia Small Business Award Program, and most recently, the CoolCalifornia City Challenge. The CoolCalifornia.org resource pages get an average of about 5,000 visitors per month.

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MS. WILLMON: Cities have long been leaders in reducing greenhouse gas, emissions and many cities in California have adopted and are implementing Climate Action Plans.

CoolCalifornia.org features case studies on numerous California cities that are leaders in the efforts to slow climate change and as well as tools and best practices guidance to support local governments in these efforts.

Programs like the CoolCalifornia City Challenge

seek to foster a stronger connection between local governments, community-based organizations, and households with the goals of encouraging significant, voluntary, carbon footprint reductions throughout the community.

The CoolCalifornia City Challenge began in 2011 as a two-year research contract between ARB and the renewable and appropriate energy lab at U.C. Berkeley. Its purpose was to evaluate the effectiveness of city-to-city competition for encouraging reductions and to quantify the household GHG reductions that results.

This study found that the 1,000 most engaged households used 30 percent less energy than similar households and reduced energy an addition 7 percent during their involvement with the program. Total savings from energy and transportation were calculated to be 224 metric tons of CO2 equivalents.

This program demonstrated value in providing a community-based framework for local governments to engage their community, and it also showed great promise helping local governments connect with community-based organizations.

Communities-based competitions are becoming an increasingly popular strategy to engage hard-to-reach populations in energy efficiency and sustainability, and they can act as a catalyst to engage networks of

individuals and organizations in a shared community-wide goal.

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MS. WILLMON: The CoolCalifornia City Challenge has now completed its second round of the competition and it's transformed from a research project into a community-based social marking outreach program.

The objectives of the challenge are to create a competition platform for cities to encourage voluntary carbon footprint reductions throughout the community, to encourage collaboration and teamwork between local government and community-based organizations with a focus on sustainability, and to quantify the household greenhouse gas emission reductions that result from this type of program.

Research findings from the initial pilot round provided valuable insights into the households that participated in the competition, including demographic and social economic characteristics, attitudes, as well as motivations that led them to join the competition. This information helped identify improvements in program alterations for the second round.

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MS. WILLMON: Round two of the challenge began in early 2014 when cities had to apply to join the program by

securing official support from their city manager by March 31st. The competition formally launched on April 1st and lasted for six months. It had two phases whereby prize money provided by our sponsor, Energy Upgrade California, was awarded to each of the cities. The first phase ended May 30th and a total of $50,000 in prize money was apportioned to the cities based on the number of new participant sign-ups earned by each city. Since then, the cities have competed to earn points for their participants' energy and travel mileage reductions through the end of August.

At the end of the competition and as you'll see today, cities are being apportioned the remaining 50,000 in prize money based on the number of points earned by their participants. In addition, throughout this competition, cities have been competing for the title Coolest California city.

Today, we are announcing the top three cities in the competition in showcasing their accomplishments as well as recognizing all of the cities that participated in the latest round of CoolCalifornia city challenge. As this program transitions into a permanent outreach program, we plan to run the competition in the future and are working with potential partners to a secure ongoing support and additional program improvements.

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MS. WILLMON: Ten cities completed the application process successfully: Arcada, Burlingame, Chula Vista, Claremont, Corona, Long Beach, Lynwood, Mission Viejo, Rancho Cucamonga, and Riverside. Collectively, these cities engaged nearly 4,000 households in climate action over the last six months, which is a 40 percent increase from last year in less than half the time.

Because participants track their driving and home energy use, the program offers a rare opportunity to measure the greenhouse gas emissions and reductions of households that report their data through the program.

Over the last year, participants in these ten cities logging energy and vehicle reports reduced more than 340 metric tons of CO2 equivalent greenhouse gas emissions, which is equivalent to taking over 140 California homes off the electrical grid for a year.

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MS. WILLMON: In order to points, cities had to engage community participation. ARB held informational webinars and monthly meetings to inform the cities on successful sign up strategies that we learned from the pilot round.

Cities worked to engage residents through various

events, including festivals, street fairs, and other activities, such as gift cards and local sporting events ticket raffles, as well as promoting home energy retrofit programs.

Many cities took advantage of our new partnership with Energy Upgrade California and invited their mascot "Bear" to help, who is a two help recruit participants and solicit participation from the community.

ARB and Energy Upgrade California also worked to help promote the new signups and participation via social marketing channels and local media.

Households responded by Pledging further reductions and taking action to reduce their emissions through activities such as biking instead of driving or hanging laundry out to dry instead of using the dryer.

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MS. WILLMON: During the competition, households tracked driving and home energy use in online software that was developed by U.C. Berkeley researchers from the same data that underlies the CoolCalifornia house old carbon calculator.

Participants would create an account from the challenge home page where they would customize their profile and enter data regularly on their electricity, natural gas, and vehicle travel.

They would then be given points through the software based on their energy and vehicle use compared to average used by others within the ZIP code. Households earned points for their city every time they enter data or reduce their emissions. A variety of points were given for achieving these reductions. Green points were given to participants whose energy use and travel were below average for their ZIP code. Bonus points were given to participants who reduced their own usage. Participants could also earn kudo points for activities such as inviting a friend to join the challenge, or uploading photos, or sharing their personal success stories.

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MS. WILLMON: This chart shows the number of points earned by the top three cities throughout the competition. As you can see, it was a tight race for the first place, even down to the very last day.

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MS. WILLMON: Before we announce the winners of the competition, we'd like to take a moment to extend huge thanks to our sponsor this year and hopefully a continuing partner as we begin working towards future rounds of the CoolCalifornia city challenge.

At this time, I would like to introduce Regina Marston from Energy Upgrade California to say a few words

about the city challenge and what it's meant to them.

MS. MARSTON: Thank you Tabetha, and good afternoon, Commission.

We are very proud to have been a sponsor of this. We actually have been admiring the CoolCalifornia Challenge since it's inception as a pilot. When they came to us and asked us if we would get involved, we jumped at the chance and strong-armed our CPUC partners to allow us to do this.

The value of the partnership really goes way beyond the challenge because we did so much work together and we saw how the cities responded to Bear, our mascot and to our social media. And we really felt that we had found a great partner in achieving our goals as well.

Throughout the challenge, we got to meet with city officials and residents and individuals that were involved in the challenge. We heard over and over that this is really a way for them to have community pride and create an avenue for them to come together and that's really what energy upgrade California is all about.

So we look forward to the possibility to work together and continue the challenge and showing people how to take small and large energy actions to reduce their energy usage and their overall carbon footprint.

We want to say thank you to all the cities and

all the individuals who participated. We hope to continue this partnership and sponsorship for many years to come. Thank you so much.

MS. WILLMON: Thanks, Regina.

At this time, I will briefly introduce each winning city and then invite the city's representative up to a few words. After the winners are introduced, Chairman Nichols and Board Members Judy Mitchell and Barbara Riordan will come down to the front podium to present the winning cities with their awards and take pictures with the cities.

Our first award goes to the city of Riverside. I'd like to introduce Mayor Rusty Bailey who is here on behalf of Riverside to accept the award.

(Applause)

MS. WILLMON: For the past ten years, the city of Riverside has taken great strides towards becoming a greener and more sustainable place to love. In 2007, the city's Clean and Green Task Force adopted a sustainability policy statement, which gave way to the Task Force's Green Action Plan, a robust strategy designed to show officials and residents how to go green in the areas of energy, greenhouse gas emissions, waste, urban design, urban nature, transportation, and water.

Riverside's participation in the CoolCalifornia

City challenge enabled the city to engage the community on a more personal level. The city actively recruited residents through local events, worked with the Mayor to create outreach videos to promote participation, and even held a contest to win lunch with the mayor. Throughout the challenge, Riverside participants demonstrated a strong commitment to tracking and reducing greenhouse gas emissions from household energy use and travel.

Well over 1100 Riverside households signed up for the challenge, and they collectively reduced approximately 130 metric tons of CO2 equivalent emissions. As a result of these accomplishments, Riverside is being named the Coolest California city. At this time, we'd like to invite Mayor Bailey up to say a few words.

MAYOR BAILEY: Thank you. I know what you're all thinking is where's Ron Loveridge? Well, there he is. Right there. And he sent me with his list of ten items to talk about today. You all know about his lists, don't you?

It truly is an honor to succeed my monitor and friend, Ron Loveridge, and to continue to build upon his legacy of sustainability in Riverside and Southern California, as you all know probably better than me. I have cut my speech down from, my victory speech, from 30 minutes to 15 minutes because we've all been here a long

time today. I know you all rode your bikes and the sunlight is Waning here. And that turkey and cranberry sauce comment is really getting to my stomach right now.

But as was mentioned, this started off with a Mayoral challenge to individuals. One of those challenges was a lunch with the Mayor. And I'm glad to tell you that my friend John Cook, the Director of Sustainability at UCR, won lunch with me at a location of his choice in Riverside.

And Dr. Sperling, your city of Davis inspired me when I looked at the initial e-mail and that message from the Mayor. And I thought about how you all won. I was assuming it was probably the bike capitol of the world and all of your students that had got on their bikes. We have 55,000 students in our cities. Riverside has a chance at this.

So continuing in terms of challenging roots, we went out and challenged neighborhoods. And one of those neighborhoods, the (inaudible) Street Green Team is represented by Justin Scott Ko here tonight was definitely in competition with another group of motivated students from University of California Riverside led and inspired Professor Kron, who's here tonight. Thank you, Professor Kron, for your support in this.

So some of the funding is going to go to

continuing the internships that we have created through our Riverside public utilities, which truly was the competitive competition -- I would say in this close competition, fierce competition with Claremont until that last tick of the clock at midnight. I know we were talking about that, refreshing our computer constantly to see who was the Coolest California city.

It was a tough challenge. Congratulations to all the competitors. Thank you all 1,170 Riverside residents participants. They contributed more than 3 million points to this competition. We couldn't have done it without them, including the staff here today. If you can imagine the Mayor coming in had every day and saying, "How many points do you have? Where are you on the list?" And there's Phil and Belinda, Stephanie, my Chief of Staff Marie Kane, and the RPU team led by Ryan Bullard, our Sustainability Officer, Mark Cloud, and then our new General Manager Grish Bulichandrin.

And just to finish off here, the audit process, we appreciate that very thorough. It even audited our Sustainability Officer's mother, Ryan Bullard, who they did validate her solar use on top of her roof. So we thank you for that.

And thank you for this time and for this honor. And look forward to using the carpool lane on the way home

tonight. So I appreciate the -- truly, you mentioned it earlier today, in sitting and listening to your debate and discussion, I'm proud of this body, this Board for your robust debate that you had over an important public policy issue for our state. So I just added that to my notes to say, you know, kudos to you, as Mayor Loveridge would say. And thank you for helping California.

(Applause)

CHAIRPERSON NICHOLS: Congratulations.

MS. WILLMON: Our next award goes to the city of Claremont. And I'd like to introduce Mayor Joe Lyons, who is here on behalf of Claremont, to accept their award.

The city of Claremont has a conscientious population that wants to serve as a regional leader --

(Applause)

MS. WILLMON: -- population that wants to serve as a regional leader in demonstrating the value of energy conservation and sustainable living. The city is guided by the Claremont Sustainable City Plan adopted in 2008. Claremont also boasts a community-based organization called Sustainable Claremont which is focused on involving the broader community in the city's robust sustainability program and was a critical component of Claremont's strategy for engaging the community in the city challenge.

The city and Sustainable Claremont hoped to use

the challenge competition as a way to involve more members in their community. They also believed that the challenge could highlight the success of one of Sustainable Claremont's most successful programs, the Community Home Retrofit Program, which is also known as CHRP. Just over 500 Claremont households participated in the challenge and diligently tracked and reduced their carbon footprints throughout the competition, resulting in approximately 89 metric tons of CO2 equivalents reduced.

Claremont took a very close second place in the competition and is being recognized as a CoolCalifornia City.

Mayor Lyons, we invite you to say a few words.

MAYOR LYONS: Thank you, Madam Chair, Commissioners.

And this is one of the perks and pleasures of being a Mayor of a city that is so progressive and caring, but not only of its own heritage, but the future of California.

And I would be remiss in not recognizing a number of people that are here that made this possible. Fellow Counsel Member Sam Pedrosa is here with us to receive the award. Our City Sustainability Coordinator and Planning Department Member, Chris Spears. And then of course our most our noted champion, sustainability champion and

founder and immediate Past President of the Sustainable Claremont, which is again our community-based organization, that is champions all of our community-based efforts, Dr. Freedman Allen.

It was a tight competition right up to the end. We had had a Commissioner's recognition award ceremony the evening that was the final night of the competition. We sent people home and sure enough they started plugging in something that had never been plugged in before. And it was touch and go. It was leap frog after leap frog until eventually I suspect Riverside's equivalent to our Freedman Allen took charge and pulled the reigns in on some of the people who hadn't completed their reporting.

But I think it's competitions like this that do, in fact, add to both the fun and the awareness of and significance of the issues. We certainly want to thank the Air Resource Board for sponsoring this and of course for the sponsorship of the upgrade -- energy upgrade for their contribution to the effort.

I'd like to just make mention to one thing because the money that was received by and through this competition will be the seed money for what is a greater competition that the city is fortunate enough to be named a participant in. That's the Georgetown University Energy Price. If you have not heard of that competition, you may

want to look and discover I believe eight cities in California that made the list of 52. And it's a $5 million winner take all competition that will monitor the two elements that we'll monitor during the CoolCalifornia competition, gas and electric consumption and the reduction over a two-year period. We will really put that money the good use to move that program forward.

I believe Davis is one of the participants in that, along with the Southern California, Chula Vista, and Irvine. So we're looking forward to again extending the kind of involvement that this allowed us to initiate with the community and take it to that next step, which will -- in fact, if we are fortunate enough to be able to utilize the resources and the efforts that will go into this, it will certainly bring our sustainability plan to another level. And that is certainly made possible by our positioning in second place in this competition. Next year, if we compete, it will be first. We will be the coolest. So again thank you very much on behalf of the city. And we certainly much appreciate the recognition.

(Applause)

MS. WILLMON: And the final award goes to the city of Rancho Cucamonga. I'd like to introduce Mayor Pro Tem Sam Spagnolo, who is here on behalf of the city to accept their award.

(Applause)

MS. WILLMON: The city of Rancho Cucamonga is the inaugural city in San Bernardino County to participate in the statewide city challenge. Through its Healthy RC Initiative, the city aims to foster a healthy mind, body, and earth. The city council identified that healthy communities and green sustainability concepts should be woven into their latest general plan update.

The city plans to expand on this effort by developing a Sustainability Action Plan in 2015 and joined the CoolCalifornia City Challenge in anticipation that it would provide an excellent forum for engaging residents to take action related to climate change and overall conservation.

Participation in the city challenge allowed the city to place sustainability initiatives in the limelight, such as having the Energy Upgrade California Mascot Bear help promote their sustainability booth at local events. Over 250 Rancho Cucamonga households participated in the challenge, and their commitment to tracking and reducing their greenhouse gas emissions led to an estimated 40 metric tons of CO2 equivalent reduced.

Rancho Cucamonga's accomplishments led to its third place ranking in the challenge, and Rancho Cucamonga is being recognized as a CoolCalifornia city.

Mayor Pro Tem Spagnolo, would you like to come up and say a few words?

MAYOR PRO TEM SPAGNOLO: Thank you very much.

And I applaud the Board who has been sitting here for a couple hours. I really admire your tenacity on how you deal with the issue of making California a clean city -- or clean state, I should say. And the city of Rancho Cucamonga is very involved with that. As was mentioned, our Healthy RC, we developed that some years ago. And actually where we had the Healthy RC Mind, Body, and Earth, we incorporated into our general plan. And it guess along with our development that comes down the road.

I don't have a lot of staff here. I mean, we came in third. We didn't have a lot of competition in that area. But I have a young lady here that was spearheading the whole thing, Deborah Allen. And that's not to say we're not as engaged in Riverside and Claremont, our neighboring cities, in the participation that we put into it.

I was part of this challenge. I, myself, have been a solar power house for about six years. And I've had an electric vehicle for two years and served my purpose very well.

The area, the type of driving that I do around the city has enabled me to probably use 80 percent of my

driving is done on electric, which is a great asset to have.

So you've heard all of our accolades and we are very happy to receive this award and to go along with our Healthy RC commitment that we made in the community and actually it's the community that made this award possible. So we thank you very much for your commitment to keeping California clean. Thank you.

(Applause)

MS. WILLMON: We'd like to thank and congratulate all of the cities who participated in the 2014 round of the CoolCalifornia City Challenge. We hope they will continue to support California's climate goals. And we sincerely appreciate their commitment to sustainable and healthy communities.

As we gear up for future rounds, we look forward to learning more about the commitment and accomplishments of more California cities and households.

At this time, we'd like to ask Chairman Nichols and Board Members Judy Mitchell and Barbara Riordan to please come down and present the cities with their award and take pictures. And we would also like to invite the cities to take a picture with Bear, who is here from Energy Upgrade California.

(Whereupon the Air Resources Board recessed at

5:53 p.m.)

CERTIFICATE OF REPORTER

I, TIFFANY C. KRAFT, a Certified Shorthand Reporter of the State of California, and Registered Professional Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing hearing was reported in shorthand by me, Tiffany C. Kraft, a Certified Shorthand Reporter of the State of California, and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing nor in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of October, 2014.

TIFFANY C. KRAFT, CSR, RPR
Certified Shorthand Reporter
License No. 12277