APPEARANCES

BOARD MEMBERS
Ms. Mary Nichols, Chairperson
Ms. Sandra Berg
Ms. Doreene D'Adamo
Mr. Hector De La Torre
Mr. Ronald Loveridge
Mrs. Barbara Riordan
Dr. Daniel Sperling
Mr. Ken Yeager

STAFF
Mr. James Goldstene, Executive Officer
Mr. Tom Cackette, Chief Deputy Executive Officer
Mr. Bob Fletcher, Deputy Executive Officer
Ms. Lynn Terry, Deputy Executive Officer
Ms. Mary Alice Morency, Board Clerk
Ms. Anna Wong, Air Pollution Specialist, Zero-Emission Vehicle Implementation Section, MSCD

ALSO PRESENT
Mr. Jay Bajaria
Mr. Harvey Eder
Mr. Edward Olson
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CHAIRPERSON NICHOLS: Before we get started, I want to try to clarify where we are.

This is day two of our January Board meeting, and it's a continuation of the proceeding that we began yesterday dealing with the Advanced Clean Cars Program.

Yesterday, at the end of the day, or very close to the end of the day, I announced the record was closed because I believed that we had gone through the entire list of witnesses and that everyone who had signed up to testify had either testified or decided not to testify.

It turned out that there was some confusion on the part of two people who signed up who thought that when I indicated that we would be going over a second day that meant they could come back and testify. And so in the interest of keeping this proceeding as open as possible, I have agreed that they could come back today and that we would reopen the record for the very limited purpose of allowing those individuals to testify, which they would have done if they hadn't been confused. So I think it's just cleaning up an error that was made. And I don't believe that means that we need to or that we should reopen the record, otherwise, there would be no end. People could keep coming with more new ideas. So that's going to be the first thing we're going to do.
But right now what I'm going to do is call the meeting to order. And we'll do the Pledge of Allegiance as we normally do, and the roll call. And then we'll just get going.

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

CHAIRPERSON NICHOLS: The Clerk of the Board will please call the roll.

BOARD CLERK MORENCY: Dr. Balmes?
BOARD MEMBER BALMES: Here.
BOARD CLERK MORENCY: Ms. Berg?
BOARD MEMBER BERG: Here.
BOARD CLERK MORENCY: Ms. D'Adamo?
BOARD MEMBER D'ADAMO: Here.
BOARD CLERK MORENCY: Mr. De La Torre?
BOARD MEMBER DE LA TORRE: Here.
BOARD CLERK MORENCY: Mayor Loveridge?
BOARD MEMBER LOVERIDGE: Here.
BOARD CLERK MORENCY: Mrs. Riordan?
BOARD MEMBER RIORDAN: Here.
BOARD CLERK MORENCY: Supervisor Roberts?
Dr. Sherriffs?
Professor Sperling?
BOARD MEMBER SPERLING: Here.
BOARD CLERK MORENCY: Supervisor Yeager?
BOARD MEMBER YEAGER: Here.

BOARD CLERK MORENCY: Chairman Nichols?

CHAIRPERSON NICHOLS: Here.

BOARD CLERK MORENCY: Madam Chairman, we have a quorum.

CHAIRPERSON NICHOLS: Let's then continue the public hearing, which as everybody will recall is dealing with amendments to the California greenhouse gas and criteria pollutant exhaust and evaporative emissions standards and test procedures. I won't read out the whole rest of what it is. It's a package of rules that we're working on.

And here are the two names of the people who left yesterday under the mistaken belief that the record was going to be open, Edward Olson and Jay Bajaria. If you would come forward and we will give you each the three minutes that you would otherwise have been entitled to. So whichever order you'd like to speak in, there is a podium right here.

MR. OLSON: Board members, my name is Edward Olson with (inaudible) Enterprises. I have been in gas station business and car wash business over 30 years, owning several gas stations in both Orange County and San Diego county.

The first major concern I had with hydrogen pumps
is the safety of my customers and employees. The pumps will contain like 5,000 to 10,000 PSI. The risk of explosion, especially with the customers is using a cell phone while pumping or if a customer forget the nozzle in their car and drive off is very scary.

We live in a busy and fast-paced world, and we have this issue of people driving off with the nozzles occur often at my stations. If this occur with the hydrogen pump, this will not only be costly to the place but can be extremely dangerous to my station and to the customers of our stations.

The second major concern I have is the time it will take to install the pumps and how much business it will lose during construction. I may have to shut down for some time and install them. And even if I can't stay open, the space would take by the construction would be a big inconvenience to my customers and it may drive them away.

A gas station that has installed hydrogen pumps in south Orange County was shut down for over a year during construction. This be very bad to my business and my ability to provide to my family.

The final concern I have is the lack of demand for the product. It's not economically feasible for a gas station owner like myself to take up real estate and tank
space to commit to hydrogen pumps. Currently, very few manufacturers are making cars that run on hydrogen. If there is a high business demand, let the market decide the need. For us, adding these pumps, the government shouldn't be forcing small business owners, such as myself, to place unnecessary and unwanted pumps in my station.

Thank you very much.

CHAIRPERSON NICHOLS: Okay. Thank you, Mr. Olson.

Ms. D'Adamo.

Before you go, excuse me, if you could stay for just a second.

BOARD MEMBER D'ADAMO: I just wanted to say, there have been a number of small business owners that have provided similar testimony. And I don't see anything in this regulation where you would be required to install this infrastructure. And I think you're absolutely correct; that small business owners should not be required to do so.

So I hope you leave today with maybe a little more assurance that this regulation is -- the purpose of it is to provide an incentive for a small number of these projects to begin with. Hopefully, you can continue to follow it and have your fears alleviated somewhat.
MR. OLSON: Thank you.

CHAIRPERSON NICHOLS: Mr. Bajaria.

MR. BAJARIA: Let me first thank all members of the Board for hearing my comments.

Hello. My name is Jay Bajaria. I own several gas stations with full service car washes in Los Angeles.

Let me start by saying I'm just as much in favor of having clean air as anybody here. However, I believe there is a right way to achieve it and a wrong way to achieve it. At my gas station, the primary profit center is the car wash. For me to install hydrogen in my locations require me to close down the car wash to accommodate the footprint of the hydrogen equipment. Effectively, this will put me out of business.

Business owners should be able to determine what they do sell and what they don't sell. It should be at the discretion of the business owner whether or not he or she takes existing space and dedicates it to a product that has no demand as of yet.

And as for the safety of hydrogen, I would not be comfortable having it on my property from a safety and liability perspective. Often see cars driving away from the pump with the nozzle in their car. I can only imagine the damage and destruction that would be caused by a car driving off with a hydrogen nozzle that is under pressure.
up to 10,000 PSI.

I would ask that you please let business owners and property owners to decide what services to provide rather than forcing it on them.

Thank you for your time.

CHAIRPERSON NICHOLS: Thank you for coming back and for taking the time. It's been helpful to us to hear these concerns, because I think someone has been out attempting to convince people that this regulation that we're considering would have the effects that you're talking about. And I have to agree with Ms. D'Adamo that there's absolutely nothing in this rule that would require you or any other service station owner to install hydrogen on your property. There is nothing in the rule. Let me say it as clearly as I possibly can that would require any service station to have hydrogen on their property that didn't want it.

And the other thing I would say, by the way, is that we also agree with you very strongly that hydrogen, as with gasoline, is a fuel that requires very careful handling. And we do not want to be and don't intend to be a party to anything that is going to increase safety risks. I don't think we would be allowed to be, even if we wanted to, because unfortunately there are other agencies in state government and local fire marshals, et
cetera, that have to be involved in all of this.

   But again, we do have now I think a very strong incentive to see that there is fuel available for drivers that are going to be using the fuel cell vehicles that the car companies are making. And we need to participate in trying to make sure there is a way for them to get this fuel that's safe and manageable. And if you don't want to be part of that program, that's entirely your business. But if we make it attractive enough to you, maybe you'll think about it. We'll just have to see how that goes. But it's not something that we're talking about here today.

   But appreciate your coming and letting us know what you were hearing and what you're concerned about because we're concerned, too, and we need to take that into account. So thank you.

   EXECUTIVE OFFICER GOLDSTENE: Could we just say a few words about the safety issue?

   CHAIRPERSON NICHOLS: Yes.

   CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: On the safety issue, the drive away concern, the pump and the car talk to each other electronically. And while the fueling nozzle is connected to the car, the car cannot drive away. So this issue is not true and --

   CHAIRPERSON NICHOLS: This is with respect to the
hydrogen stations that currently exists. There are how
many of them?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: They're
all like that. There is a connection that says "I'm
fueling." And when that happens, the car can't be started
up. So when it's connected/disconnected -- right now with
gasoline, you can drive away and they have a break away
which is a mechanical way of doing the same thing. With
hydrogen is a much more sophisticated way.

CHAIRPERSON NICHOLS: That's good to know. Thank
you for that.

Okay. So now, at this point, the record actually
is closed and we will not be hearing again from the
public. But it's time for the Board now to have a
discussion.

And my general proposal is this: I'd like to put
out on the table the full list of issues that people want
to address, if there are proposals you're going to be
making for amendments or you'd like to discuss possible
amendments, concerns, things you'd like clarified, let's
just do this one Board member at a time and try to get the
consolidated list together. And then let's figure out
where we have support for moving amendments forward. And
then finally what I would hope we could do is when we've
got the full set of amendments, vote of those each and
then vote on the package of regulations and do it all as one vote. I think that will give us the strongest possible sense of the will of the Board as a whole.

So I'm just going to start on my right with Ms. Berg -- no. I don't want to start with you. Okay. You'd like to pass for the moment. That's fine.

Mayor Loveridge --

BOARD MEMBER LOVERIDGE: Pass, too.

CHAIRPERSON NICHOLS: Pass, all right. I know that Professor Sperling is not going to pass.

BOARD MEMBER SPERLING: All the pressure is on now.

Well, I would like to just offer a first comment that we offer a tremendous amount of appreciation and thanks to the staff and to Chairman Nichols for having gotten us where we are. This moment, these actions we're taking, are truly historic and transformational. And it's the leadership of the staff and Chairman Nichols in putting together the deals at the federal level for the greenhouse gas standard and also as part of this, the leadership in working with industry, to come up with a set of proposals that more or less have the support of the industry, both of certainly the automotive industry where most of the actions we're taking with vehicles. And it's transformational. I mean, it's inconceivable, you know, a
few years ago that we would be considering kinds of actions that we have on the table, both for the Zero Emission Vehicle Program as well as the greenhouse gas. So I'm honored to be part of this and very excited by this.

So jumping into the details here, so I guess I'd start with the LEV III criteria pollutants and the issue of the particulate standard. My only suggestion on that is that we think about an earlier review of the PM2.5 standard. And I say that because in terms of going towards the one milligram, and that is because there are the more advanced standards being put in place in Europe and where they're using a particle count approach and it's a different approach. And it's the measurement issues. And I think Tom Cackette brought that up. So I would just put that on the table as an earlier review.

CHAIRPERSON NICHOLS: Can I just ask as a matter of curiosity? Is there any objection to just following up on that suggestion? It seems to me to be a perfectly reasonable one. Staff doesn't have a problem with initiating an expedited review on --

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Could I ask what Mr. Sperling means "earlier"? Because we were going to review it in the mid-term review, which would be 2017/2018.
BOARD MEMBER SPERLING: My understanding is in Europe they're starting this year or next year with the standard for the direct injection technology. So I was thinking more like 2015/2016.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Okay.


BOARD MEMBER BERG: Just a review.

CHAIRPERSON NICHOLS: It's a review. And staff will report back on the review and, if necessary, we'll make adjustments at that point.

BOARD MEMBER BALMES: Madam Chair.

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER BALMES: Just on this point, is that going to be too soon? Because I, for one, would like to see the one milligram per mile standard start earlier than 2025, if technically feasible. And is 2015 going to be too early to determine that?

BOARD MEMBER SPERLING: Well, I think my semi-educated response to that would be that a determination can be made at that point that it is too early. And then we push it off until --

BOARD MEMBER BALMES: As long as we can re-visit it.

CHAIRPERSON NICHOLS: Yeah, it's not the last
time.

EXECUTIVE OFFICER GOLDSTENE: The review wouldn't be committing in any way --

CHAIRPERSON NICHOLS: It probably would happen anyway, but it's just a good idea to have it written down and the direction be there.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: So we may ask questions that are obvious to you, but just to make sure it's on the record so that the proposal would be that the staff proposed standard, which is 2025 through '28 for one milligram, that would still be part of the rule and it's a review --

CHAIRPERSON NICHOLS: Correct. We're not changing the regulation --

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: -- in 2015 and again we'll do one in 2018 to see what the status of technology is then.

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER BALMES: I don't know if you want to wait until my turn.

CHAIRPERSON NICHOLS: While we're dealing with PM, let's just deal with it.

BOARD MEMBER BALMES: I would propose that we consider an earlier adoption of the one milligram per mile at 2022 phasing into 2025.
I realize that the manufacturers had some concern about the feasibility of both achieving that target emission and the feasibility of measuring it. And I appreciate those concerns. But I feel confident as the Chair indicated yesterday, they're smart enough to figure it out with enough lead time.

So I would like to have that -- I would like to move up the target earlier, but with a caveat that we do technical reviews to ensure that it's technically feasible.

CHAIRPERSON NICHOLS: That is a separate issue.

BOARD MEMBER BALMES: I know --

CHAIRPERSON NICHOLS: So I think I'm going to hold that for the moment, because we have consensus on the one and I don't think we do on the other. So let's -- I think let's lock in what we can agree to and move on. Okay.

BOARD MEMBER SPERLING: Sticking with the simple ones, the clean fuel outlet, I don't know if this -- it's simple; I didn't say it's not controversial.

There was a question -- it's partly a question. And there was the issue about for the auto makers as Chairman Nichols said we are asking them to give the number of vehicles that they're planning to supply, and there's penalties if they don't meet it. And I know there
was some discussion, and I support that discussion and maybe make it be a three-year rolling average. So that, in other words, if they make their forecast or -- their forecast of how many vehicles and they're off one year, that it wouldn't -- because otherwise, they would low-ball the numbers, and we don't want them to low-ball it. So that --

EXECUTIVE OFFICER GOLDSTENE: We are consulting to see what the effects would be.

BOARD MEMBER SPERLING: And these are the easy ones.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: We're struggling on the concept of this. So maybe could ask for clarification.

This is specifically focused on when the fine on the auto manufacturers would occur; is that right?

CHAIRPERSON NICHOLS: The concern is that they might be, because they're facing a penalty if they over-predict, that they will actually under-predict -- if I may speak for you here. And the suggestion is that if you made the penalty based on a three-year average rather than a year to year, that would help eliminate that problem, that concern.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Yeah. I guess I was thinking of it in a different way, which
would be that if you failed to provide the vehicles that were expected, then it wouldn't -- in the first year, your first estimate, you wouldn't pay the penalty, but only if you failed a couple of times. Is that similar to what you're talking about? In other words, you get a couple of near misses before you --

CHAIRPERSON NICHOLS: And you also might want to even it out, because one year they might be selling fewer and one year they sell more because of variation in market demand and supply and --

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: So it would be kind of like if your three-year average of -- your three-year estimates all end up being 80 percent or less than what you said in terms of your actual volume --

CHAIRPERSON NICHOLS: If you consistently under-predicted.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Yes. Our concern is not to not add any fuzziness to the estimates, because the first year estimate is what we're going to turn to this is how many stations are required.

CHAIRPERSON NICHOLS: Right.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: So anything that -- I'm trying to make that the best estimate possible for all parties. I just want to make sure we don't do something to make that fuzzier.
CHAIRPERSON NICHOLS: Well, the purpose here is I think only to get us the best quality data so that we're not causing money to be spent providing hydrogen that then isn't needed. That's the key to the whole thing. And I'm just not sure this penalty structure that we've come up with is the best possible way of making that happen. But I don't know that we've come up with a better one.

EXECUTIVE OFFICER GOLDSTENE: Maybe it would help if Analisa gives a quick overview of the penalty structure that we have proposed.

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH CHIEF BEVAN: So the manufacturers asked to predict three years in advance what they're bringing and to update that a year later. So now two years in advance. And then stations have to be in place and operational January 1st of the year they projected those cars to come. They have that entire calendar year to place their cars. If at the end of that calendar year they have failed to place the cars they projected two years out, then they might be subject to the penalty, if we can prove they knowingly falsified the report that was sent to us. That's the way the statute is written, knowingly falsified.

CHAIRPERSON NICHOLS: It's not really aimed at a person who just innocently makes a mistake.
CHIEF BEVAN: Right. There's lots of situations where that penalty couldn't be brought on them because of things that were outside of their control.

I thought of one situation where possibly it might be brought up on them and where they -- let's say predicted or objected they were going to bring $10,000 cars. And then the year they're supposed to come, they decided to send them somewhere else. That might -- you might find a way to show that was a falsification of a report.

And what we're trying to protect against is stations being put in and not having any through-put. And if we used a three-year rolling average and the cars that were predicted in year one didn't come until -- plus all the other cars until year three, that's three years the station stands empty and that's untenable.

CHAIRPERSON NICHOLS: So are you willing to --

BOARD MEMBER SPERLING: It's more the penalty part of it so we don't get the low-balling.

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH CHIEF BEVAN: It's a $35,000 one-time penalty for that report.

CHAIRPERSON NICHOLS: For knowingly filing a false report.

BOARD MEMBER BERG: That's a pretty --
EXECUTIVE OFFICER GOLDSTENE: It's a high standard for us.

BOARD MEMBER BERG: Ellen? Ellen Peter, could you please give us -- knowingly falsified is a pretty high standard.

CHIEF COUNSEL PETER: That's correct.

BOARD MEMBER BERG: My understanding.

CHIEF COUNSEL PETER: Some of the penalty structures that we have now is strict liability. Basically, you violate it, you violate it. It's different standards. That is an extremely high standard; that's correct.

CHAIRPERSON NICHOLS: So Professor Sperling is satisfied on this point. Okay.

BOARD MEMBER SPERLING: Good clarification.

CHAIRPERSON NICHOLS: So far you're batting 100 here.

BOARD MEMBER SPERLING: Keeping it more on the simple side, I do want to just make kind of a statement that -- so now moving to the ZEV mandate. So now the really interesting part. So the ZEV mandate -- I'd just like to make one statement. I'm really pleased that we've simplified it. I like that chart where we showed the hybrids go flying off into the horizon and the PZEVs as well.
And I like the idea that the principle here is that the ZEV mandate is intended not primarily to reduce greenhouse gases, but to stimulate the investment in and innovation in advanced technology. Get the technology out there. Create the supplier chains. Create market acceptance.

And I think that kind of numbers we have, I'm happy with and going up to, you know, a rough estimate of 15 percent in 2025. And I would say that we should think about it generally, as that's the end of the ZEV program. That if we actually get to 15 percent, it's a success. And just like the hybrids flew off into the horizon as part of the greenhouse gas --

BOARD MEMBER BALMES: Graduated.

BOARD MEMBER SPERLING: Graduated. As a Professor -- the same thing would happen with a ZEV.

All right. So there are several -- I guess, to me, there's two big issues with the ZEVs. And let me just put them on the table for discussion. One is the over-compliance issue. And I'm convinced that taking in -- with the understanding that negotiations took place and in good faith that that was made and that was a very important part of getting the greenhouse gas program at the national level and with California.

But on the other hand, that it does provide a
very large benefit to whichever companies you participated in. And that within certain constraints we should try to minimize the effect of the over-compliance program, or at least reduce it. So some of the -- I think the kind of things we can talk about in that are: One, raising the threshold for when companies can participate in the program. But right now that's two grams. So raising it I would suggest to something like five grams.

Another part, another aspect of that would be changing the exchange formula, which says how many credits you give up in order to get that over-compliance benefit. How much you give back into the greenhouse gas program that you're not going to use. That would be another part of it.

Another would be having the upstream emissions of the electric vehicles count in determining the numbers that are being used.

And another would be an earlier reporting date for the companies because right now it's set up as reporting in 2018. I think we want to know earlier whether they're going to participate because that has implications for the whole greenhouse gas program.

And the other feature -- and this might already be in it. I'm not sure yet. And that is stripping away all of the special extra credits that were used -- that
are used on the federal California program but not used --
that should not be used for calculating whether they are
overcomplying or not. So in other words, credits for
hybrid pick-up trucks, double credit for electric
vehicles. So I think that's already in there.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: It is.

BOARD MEMBER SPERLING: So those are the ones --
let me just leave it on the -- because we're going to have
a discussion about that, Chairman?

CHAIRPERSON NICHOLS: Uh-huh. Well, let's get
out whatever else you want to do to the ZEV program,
because I'd like to have a full discussion.

BOARD MEMBER LOVERIDGE: Can I just cut in and
add on for my own clarification? Because Dan saw this as
being good.

I just would like to know how we arrived at the
percentage. It seems to me 15 percent of the sales 13
years from now, the vehicles, rather than being good, is a
lot less than I would like to see in the South Coast
basin. So how did we -- what was the mathematics that led
us to our entry of 15 percent?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: We came
up with the number first by going all the way out to 2050
and seeing what do we need to have in terms of the vehicle
mix in 2050 to achieve the percent reduction and then we
started walking back from that. That was virtually every vehicle sold in 2040 would have to be a ZEV and the fleet would turn over by 2050. That's the kind of logic. That's just the goal.

And we walked back in time back towards the current time and tried to see how do we get from where we are to that goal. So how do we go from no ZEVs essentially to 100 percent ZEVs between 2018 and 2040 and what does that take.

And when you look at the change that has to occur per year in sales of vehicles -- in other words, how much up-take of electric and fuel cell and plug-in hybrid vehicles has to occur each year, it's pretty dramatic. And more dramatic than you normally see for most vehicles in the fleet, including the current Prius type hybrids, which in California took ten years to get to six percent of sales. And the numbers we were looking at to get to 2040 were going to be numbers that were maybe twice that per year.

So we kind of clipped the top part off and said we can't go too much higher or it's just not reasonable that the market uptake would occur. And so we came up with something near the lower end of what could still arguably put us on the path to 2050. And that was about 15 percent. It's not precise. It's not an equation. It
was judging as to how fast the market could change and
absorb these new vehicles.

That's my best explanation I have.

CHAIRPERSON NICHOLS: Maybe just a reminder
again, because I know we have to keep coming back to this,
that we're dealing with the ZEV program as one element of
our overall standards. And we're now putting them even
more tightly together than we ever have before to try to
be coherent about what we are doing.

The ZEV mandate is a floor. It is not a ceiling.
It is not even a prediction. It is the mandate. You
cannot go below it. That doesn't mean we're going to be
satisfied if we get to that number. But it is based on a
policy judgment that to go higher we need to offer other
kinds of incentives to get there. Society also has to
play a roll in terms of helping to deal with the costs and
the inconveniences and the public education and all the
other kind of transformations that are going to have to
take place in order for there to be a really successful
market for this transformation.

Our job as regulators is to do our piece of it by
putting the floor under it that without which we think
things would perhaps fall apart. But it's not -- we don't
have to do the whole job with this ZEV mandate.

BOARD MEMBER SPERLING: And the real point on
that is that we want the market to take off. And we want -- that means industry and consumers. We can't do that.

CHAIRPERSON NICHOLS: So okay. Questions or comments about this? And then I'm going to let the staff respond to the individual points that you made.

Well, let me just say one thing maybe in addition, because you raised the whole issue about the over-compliance/optional compliance path, which is what we're really talking about here and alluded to the federal negotiations that lead to the big announcement.

And I want to make it clear that the structure of those greenhouse gas regulations, which we agreed to, was one which very much favored the domestic auto companies that make trucks. If California had been designing the greenhouse gas regulations ourselves, we wouldn't have gone with the whole approach, the whole attribute-based approach, the whole idea that trucks get a different path than cars do. This was not California's idea.

And when we thought about why it would be a benefit to us to endorse this program, even though I think intellectually we would have preferred to go in a different direction, what we saw was that we had a big stake as Californians in: A, achieving really meaningful reductions in greenhouse gases from the overall automotive
fleet, but also that we have an ongoing interest in this kind of transformation that we're talking about and that we needed to bring everybody along.

And you know again, to be perfectly clear about this, the companies that are going to be able to take advantage of this program are a tiny number of companies. So far we're guessing two. Could conceivably be more. And what they get out of this is an opportunity to save on some of the costs that they would have to otherwise eat of providing more pure EVs in return for supplying a much larger number than they would ever be required to do of extremely efficient vehicles that are going to make a very big dent in the worlds -- in our contribution, in the United States's contribution, and California's contribution to the world in terms of transportation of greenhouse gases. And in doing so, it's very limited in terms of time and in terms of what it is that they actually have to do. But it's a recognition that we're all in this together in terms of trying to get to the ultimate of the cleanest and most efficient and most advanced cars possible and that people are on different paths. They're not all going to do it the same way, as we've been saying over and over again. They're different mixes.

In a sense, as you said, we could declare victory
right now because there's nobody that isn't at least
working on a full array of zero emission vehicles. When
we started, that was not the case. And now everybody is
at least made announcements and made investments and
they've made promises. But we're still not at a point
where they're all competing on a level playing field.

And I think what's different about the ZEV
program than maybe what some people want it to be or what
it could have been, what it could be, is that it really is
designed -- this piece of our regulations is the one place
where we try to get everybody into the game, everybody
working on some form of ZEVs. And we will achieve that as
a result of the proposal that the staff has made.

So I have no problem with the idea of limiting it
in ways that will make sure that it doesn't get abused,
doesn't get out of hand, doesn't incentivize people to not
continue the work on ZEVs. But I think it's important
that we recognize that this isn't something we should
feel -- I don't think we should feel apologetic or
regretful about having come up with this proposal. I
think it was a smart idea that actually helped to bring
all of the companies, regardless of their very different
positions, into a really historic agreement on a way
forward. So let's just keep that as the background as we
look at these potential changes.
And so I'm just going to say for myself, I think that including the upstream emissions is consistent with our regulations as they already exist. I don't know that that requires a -- I mean, it's not a new concept. It's something that we ought to be able to do. The idea of reporting and keeping track of this data makes very good sense.

I'm really not in favor of fiddling with the formula, because I think that then puts us back in the position of trying to redo what was already done.

So staff, if you have other ideas about ways in which we could improve this, I would be happy to call on you at this point.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE:
Actually, no. I think the upstream piece is fine.

The date -- moving the date up was a great idea. I think it was suggested -- I think we have already suggested changing it to April of 17. But some date in that time frame would give us -- in the mid-term review, we would be able to refer to the fact that some companies are confident enough to say that they could comply with -- over-comply with greenhouse gas standards all the way through 2012, which is a powerful piece of evidence for the mid-term review. And so I think that's another good one. But I would defer all the rest to Chairman Nichols.
CHAIRPERSON NICHOLS: What is the limited timing by which companies can use this? That was one of the issues that came up.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: They can generate the over-compliance starting in 2017 and use it next year. So the time when they can use it to reduce ZEVs in 18, 19, 20, and 21.

CHAIRPERSON NICHOLS: Okay. Well, I think we probably need to continue the discussion at least somewhat further.

Did you have other two more?

BOARD MEMBER SPERLING: Two more.

One of them is the BEV X program. And there's two ideas I wanted to suggest. One is the way it's designed now, I'd suggest making it a little stronger in the sense that it does not -- that it should be for a vehicle that has what some call a limp home capability. In other words, that use the electric vehicle part of it almost all the time and that the extra range or the extra capability really is only available for in a sense, emergency or extra use.

And the way to do -- so the reason I bring it up is there is no performance requirement for that extra limp home capability. So it could be a full engine with full capabilities to drive -- I guess the 80 miles was the
range that was written into it.

So I would suggest that -- I don't know exactly how to do it, but that there be the performance criteria attached to it.

And this is the way it was originally proposed by the car company that was interested in it so it's consistent with the proposal.

And then the other piece would be -- so that's making it more stringent. And the more controversial part might be adding another category in there. I know I'm the guy that always preaches simplicity and streamlining, but I was -- okay.

So the bigger idea here is, as I said yesterday, I think we really want -- our primary focus here with the ZEV mandate is to stimulate innovation, stimulate investment in ZEV technologies, stimulate the creation of supply chains for the technology. And what that means is providing companies with the opportunity to experiment, to try different things, to see what the market really wants. And there is an argument against this, and that is we want to get to this pure ZEV as quickly as possible. But I don't think -- I don't feel smart enough to know what that path is.

So I'd like to create this extra category inspired by General Motors' suggestion that would have a
vehicle that would have a 50 mile electric range, which is exactly what one of the categories in the pure BEV -- the rules for a pure BEV, the first category is 50 miles. So for the BEV X, have it 50 miles, but not let it get -- not let it achieve as much of the pure BEV credit as the BEV X would. So the BEV X, if you do a BEV X, you get as much as 50 percent of your pure ZEV credits, up to 50 percent of pure BEV credits using this BEV X.

What I suggest is for this other category that's 50 mile range, but it does allow a stronger engine, which would be like a glorified enhanced Volt that in that case it would get only 25 percent. It could be used only to get up to 25 percent of the pure ZEV credits that a company is obliged to meet.

So I apologize for the complexity. But I do think it's part of this idea, because we're struck -- when we do these regulations, we just keep creating all these categories, and you can't get away from that. But at the same time, we want to somehow keep to the principle of providing as much flexibility as possible so that there is experimentation and see how the market and the technology evolves.

I have one more thing.

CHAIRPERSON NICHOLS: Just a minute. Sorry. Did you want to comment on that?
BOARD MEMBER RIORDAN: Yeah. Let me understand just what you said with this new category. It is a battery vehicle with a range of up to 50 percent, but I'm not sure I understood -- 50 miles. Excuse me -- 50 miles. And then what are you suggesting -- it's coupled with what? There's the limp home engine that we have and this is --

BOARD MEMBER SPERLING: So this would not be a limp home capability.

BOARD MEMBER RIORDAN: Okay. What would be the range?

CHAIRPERSON NICHOLS: You're talking about the Volt?

BOARD MEMBER SPERLING: It's an enhanced Volt, a slightly enhanced Volt. And you know, the GM is pushing for it because they say, you know, look. A car like that will potentially get as many EV miles run on pure electric -- will get as many miles running on pure electricity as they argue even possibly a Leaf. But we don't know. We have no idea.

And I think we do want to be giving credit for that kind of capability. If a company -- I think that's a really expensive way to do it. I'm not convinced that's a very smart way to do it in the end because you're putting in a big engine, a big battery. It's expensive. I'm not
convinced. But maybe it is.

So I think the idea is just to allow them and give them credit for -- they need to go back to their top management and they have to say, you know, we want to do this. And it's expensive. But, you know, California is blessing us and --

BOARD MEMBER RIORDAN: And also may have some sales potential for somebody that wants a little bit more than limping home.

Okay. Thank you. I just needed clarification.

CHAIRPERSON NICHOLS: Dee Dee.

BOARD MEMBER D'ADAMO: Can I just comment on this? This is the first time hearing it, but I like the idea. I was going to be talking about the minimum requirement for Toyota and some ways to discuss ways to allow flexibility in the name of experimentation just -- if a company thinks something is a good idea, why not let them try it?

I can't help but go back to this linear credit system, which I think is a terrific way to go on this ZEV category, because for years, we've been putting the categories in boxes and playing around with the credit system. So when we add additional flexibility, the example that you give or perhaps when I get my chance here to talk about that minimum ten-mile requirement, maybe it
ought to be tied to some sort of in-use study so that we can get the information when we come back for the view in terms of -- because we're really honing in now on drivers' patterns and behavior as opposed to just what the car is capable of doing. Perhaps it's capable of doing a certain thing, but 100 percent of the time, but we know the drivers are not always going to be behaving the same way every time they get in the car.

So I would just add to what you're suggesting, some type of in-use study.

BOARD MEMBER SPERLING: And the last point is one that my honorable Board member said she was going to raise, so I will defer to her on the ten-mile threshold. And Dee Dee, take it away.

BOARD MEMBER D'ADAMO: Are you ready?

CHAIRPERSON NICHOLS: I'm ready.

BOARD MEMBER D'ADAMO: Okay. Well, I don't want to take up too much time. You did such a good job going through the issues.

But I do want to say this is interesting, that is my fifth ZEV hearing. And I've going to steal a phrase that David Friedman gave us yesterday, and that is we are really looking at climate change here with just the change in climate in dealing with the stakeholders. And I really want to thank industry, in particular. I know everyone
has done a lot of work. Mary, you going to Washington.
And staff and all the stakeholders pulling this initial
agreement forth that help to set the tone for compromise,
which is just so unusual in this arena.

But in particular want to compliment industry,
because in years past, it has always been so difficult to
move forward in making any adjustments because industry
just for the most part was not engaged. They weren't
involved in the dialogue. So it always makes it so much
more challenging in order to put policy issues together
where you really hope to make a change. If you don't
understand where industry is coming from in having an open
dialogue, the result is you have to continue to make
changes. And you have to have another review and make
more changes.

So congratulations to everyone and
congratulations to the graduates as well.

So I absolutely concur on PM standards on an
earlier study. I'm going to leave it up to Dr. Balmes on
the earlier phase-in date. I agree with Dr. Balmes on
what he's saying as far as over-compliance. I really do
think that we need to account for the upstream emissions.
We worked so hard on that for the low-carbon fuel
standard. And it just seems inconsistent for us to have a
different policy when we look at ZEVs.
I know that Mr. De La Torre has some other ideas, and I'm very open to ways of tightening this up and making adjustments, but that don't break faith with the agreement that you all worked so hard on.

With respect to the minimum requirement of ten miles and the test cycle versus something that's maybe more flexible, I just want to open that up for discussion. I suspect that there are others that have strong feelings that we need to stick with what staff is proposing. But I would like to just give my own experience because I was able to drive a plug-in for well over a month. I found in my own situation -- and perhaps just because where I live -- I was either utilizing it to its maximum, getting up as high as 88 miles per gallon, or I was on the road -- I live in the valley, so you know, drive long distances. And those situations bringing the overall mile per gallon down to more like 60.

And I just think that getting back to what Professor Sperling was saying as far as giving companies flexibility in order to encourage innovation and giving companies the flexibility for their own sense of what the market might welcome, I would like to see some flexibility on this ten mile, how we arrive at ten miles, whether it's the test cycle or some other approach.

In the event that my Board members don't agree
with me, I'd at least like for us to have a study for that lower mile vehicle that's at around 10, 12, 15, whatever they're proposing, to get a better sense of in-use so it's not anecdotal, my own experience dictating or yours or someone else's dictating how much you want to welcome this type of technology.

And again looking at that linear chart. There is a place for it. Maybe the credit ought to be lower or we leave it the way it is. We study it and then we come back and adjust the credit at a later time.

CHAIRPERSON NICHOLS: I'm going to start at the other end.

BOARD MEMBER DE LA TORRE: I just have two sections where I wanted to make comments, and one was discussed yesterday, so I wanted to clarify.

But before I do, I also want to acknowledge the progress. I haven't been here for multiple cycles of the ZEV mandate. But my understanding is there's been a lot of movement there, a lot of re-trenching, a lot of moving backward, sideways, whatever. And this is clearly a move in a forward direction.

At the risk of proving each element right, "A foolish consistency is the hobgoblin of simple minds," I think many of us like the idea of a straightforward ZEV mandate. And that's why the over-compliance issue gnaws
at us a little bit. But on the other side, we're asking
for flexibility in these other areas. So it's an
interesting dynamic in terms of where we're coming from.
I'll acknowledge that up front.

In terms of the car and truck piece, that's the
easiest one. Basically, following up on the conversation
yesterday that that information be made publicly
available, whether it's at the mid-term review or at other
points where analysis is done and information is gathered,
that that information on the consumer purchasing trends
and California's fleet mix based on actual sales, that
that information be made public at every step of the way,
whether it's a formal date that is already in the
Resolution today or something that takes place in the
coming years, that that information be made public so that
both here in California and at the federal level they can
see what's happening in the marketplace with this car and
truck dynamic.

We don't want to have everything we do here
undermined by the manufacturers just shifting production
into more flexible vehicles where they get more leeway for
pollutants. So that's the first. I think we discussed
that yesterday. I think it's fairly straightforward.

The second is related to the over-compliance
issue, and it's been alluded to. Again, wanting to keep
faith with the negotiations and the discussions that you
mentioned. These things are just more clarifications of
what that over-compliance would be. Number one, ensure
that over-compliance is calculated in a manner consistent
with full accounting of upstream greenhouse gas
emissions -- this is what Dan was talking about earlier --
for the ZEVs and T ZEVs.

Number two, that the Board re-affirm its intent
to have all auto makers meet 2022 to 2025 ZEV requirements
as proposed and end the GHG ZEV over-compliance provision
in 2021. The Board re-affirm the need for the ZEV program
for State attainment of NAQS and recognize the ZEV program
separate and stand-alone program from the LEV III GHG or
national program.

Number three, require manufacturers to apply no
later than December 31st, 2016, to be eligible.

And number four, monitor the provision over 2014
to 2025 and report every two years back to the Board on
the number of manufacturers intending to participate their
market share and the number of ZEV or T ZEV vehicle loses
for California and Section 177 states. That's it.

CHAIRPERSON NICHOLS: Staff understand these
amendments and what's your view on it?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Yeah.

Several of them we actually worked with Mr. De La Torre to
come up with some resolution language that's almost identical to what he stated there. So that all sounds fine to us.

I think adding the upstream emissions to the over-compliance agreement is not a deal breaker, I don't think it will be, and does add consistency since in our regs we do count over-compliance upstream emissions. In the Feds, they don't. And so when we bring this back to have a California-specific calculation, it makes sense.

CHAIRPERSON NICHOLS: That Resolution is clean on this issue. We've fought this battle with EPA and obviously we didn't succeed. But they recognize that we are taking the position that we are.

And actually, I don't think it's telling tales out of school to say that they've agreed that this is something that should be temporary. They don't have an intellectual defense for their position. Their position was it was needed to get electric vehicles started in their view and it's not going to be needed forever. And they realize they're going to have to change, but they just can't quite get there yet.

BOARD MEMBER SPERLING: If I could just add to that. In response to some of the car companies saying it's not their responsibility to do upstream, the response to that is that if there are -- if the upstream emissions
are taken into account looking across different states, for instance, then they will market them in areas where the benefits are the greatest. And so they do participate in that way and that's the importance signal for us to be sending.

CHAIRPERSON NICHOLS: Right.

Okay. Any further discussion on this package of amendments?

I think consistent with the discussion that we've had before, these are helpful clarifications and support what we're trying to do here. I don't think there's going to be any objections to moving forward. So good work. And thank you. Especially for your very first ZEV.

BOARD MEMBER DE LA TORRE: I don't know how to take that.

CHAIRPERSON NICHOLS: You're already a ZEV pro.

BOARD MEMBER DE LA TORRE: I will say though that with all the PR around and greening car companies, hopefully this whole process helps move them more into practice and reality instead of just press releases and TV commercials.

CHAIRPERSON NICHOLS: That's great. Okay.

Dr. Balmes.

BOARD MEMBER BALMES: Well, this is only my second ZEV meeting. I have to say I felt thrown into the
fire the first time. I feel a little bit more battle scarred this time.

And I've also met with virtually all the auto manufacturers and many of the environmental NGOs. So I felt like I got a lot of input into these standards.

So I'll start with LEV III. And I've already stated what I'd like to put forth. See what my fellow Board members think. I would like to see the cleanest possible air that we can come up with without pushing the bounds of technology beyond what's feasible. And so I'd like to challenge the auto makers to try to meet the one milligram per mile standard earlier than 2025. I think 2022 would be a target I would set. So moving the process three years earlier so it would be a phase in from 2022 to 2025.

We heard testimony yesterday that the auto makers were already concerned about what we have proposed in terms of their ability to meet it with engines that they haven't quite figured out yet and measurement techniques that also haven't been quite figured out. But I'd like to challenge them to try to meet this earlier rather than later. And I think if we are going to have a technical review, we can determine whether it's feasible or not.

So that's my proposal is to move it up three years. And I'll see what my fellow Board members think.
I've heard from the auto industry that the PM contribution from gasoline engines is relatively minimal, but it's still real. There's still a fraction that comes from gas engines. And I think we need to try to continually try to improve on the emissions from those engines. Decrease emissions from these engines. And I think there is enough lead time that we ought to be able to get there.

With regard to ZEV, I like both the proposals that Professor Sperling and Assemblyman De La Torre have put forward. The one item that Dr. Sperling put forward that I'm not clear about what the staff reaction to in terms of the negotiations is the five -- going from two to five grams per mile for the exchange. I liked Professor Sperling's idea.

And while I'm on the ZEV over-compliance issue, I wanted to compliment Mr. De La Torre for correctly quoting Emerson -- it's usually mangled and I think that's the exact quote.

So with regard to the clean fuel outlet, I'm very comfortable with what staff has proposed. I hope that the MOA process will move forward. I agree wholeheartedly with Ms. D'Adamo that there has been a climate change even since I think February 2008 or March 2008 when we last did ZEV from the auto industry. And I would like to see the oil industry, as Professor Sperling mentioned yesterday,
which often calls is the energy industry get on board with regard to building a fuel cell infrastructure that is happening in Germany and in England and elsewhere. I think California needs to be there.

It's a time when the State budget is tight. We all know that. It's a time when the State economy is not the greatest. But we need to move forward with building a fuel cell infrastructure. So I hope that the oil industry will get on board as opposed to dragging its feet.

CHAIRPERSON NICHOLS: Okay. I think I'll reserve comments until later and just continue on here.

Supervisor Yeager.

BOARD MEMBER YEAGER: Thank you. And it's really an honor to be able to take the vote we're going to be doing very shortly.

I know all of us certainly in public life and working on these types of issues, the environment, transportation, and to actually be able to contribute to changing the environment has been quite an honor.

I know that for many consumers the marketplace hasn't provided them what they wanted. I think if you talk to anybody, they wish they could drive more efficient cars that had less pollution. That's everybody's goal. And you know that people are spending way too much money for gas. And they wish they didn't have to spend so much,
not only because of their own pocketbook, but what it does for international affairs as well.

And the fact that we are going to change what consumers can buy and what they can drive, which is really what they want, is really one of the most important things that we do. I know we're standing on the mountaintop looking at how all this is going to change so many things. But when you think of the individual who's going to go to a dealership and buy the type of car they want to me is very exciting. I don't want to lose sight of that, of how it's affecting the individual citizen here in the United States. And it's very nice to be able to give them what they seek.

I know a lot has been said particularly about over-compliance. And I agree with the language that has been provided. I'm also worried about backsliding. It seems like at least we'll be able to understood a little bit more what the auto makers are doing getting that information. So if backsliding does occur, we're able to correct it earlier than later. Certainly the issues about the upstream emissions I agree with.

I think the one issue -- and I'm in agreement with Dr. Sperling and Dr. Balmes -- is going to the five grams from two on the over-compliance. And I'm looking forward to hearing staff's reaction to that a little bit
more. To me, it seems doable. But I would just want to have that confirmed.

I hope we can look at incentives in the future. We've got cap and trade coming up. I want to try to figure out how we might be able to use some of those revenues. I'm hoping some of it will go into being able to serve as rebates for people who buy ZEVs. I know that when Carl Moyer and AB 118 programs are renewed, I'm hoping that again we can look at using some of those funds for incentives.

And then just to talk a little bit about Tesla because it's in my backyard and part of the Bay Area, I was working for a Congressman who represented the Fremont area quite a few years ago, and I remember very well when the EM plant closed and the hardship that that caused, not only for all the workers but for the whole area. And then how exciting it was when NUMMI came in and a lot of those jobs were preserved. And we were able to have that partnership and be able to continue to manufacture cars.

And then, of course, with the closure of NUMMI and then Tesla comes along. And I had the privilege of taking a tour of the facility last week, and I think we all need to do whatever we can to make sure that California does have a car manufacturing plant here in the state and encourage other type of manufacturing for any
number of reasons as far as less shipping and good jobs and producing the types of cars we want.

The one thing I'm most nervous about is how over-compliance might affect them and may be going from the two to five is one way to do it. But I know that we're going to have the mid-term reports so we get a better understanding of how many people are using that over-compliance. I know we don't want to go with the cap, but I'm just hoping that we're able to make sure that Tesla remains strong and that their business model which relies so how much on these credits that it still works for them to be able to produce the type of cars that many of us want to hopefully purchase in the future.

CHAIRPERSON NICHOLS: Okay. Mrs. Riordan.

BOARD MEMBER RIORDAN: Thank you, Madam Chair.

We have come a long way. And thinking back to those hearings that I sat through in the early days of this program, it truly is amazing. And I want to salute and commend everybody who's been involved, staff as well as manufacturers, as well as those who have been involved in the research that's brought us to this point.

Certainly, I would support much of what Member De La Torre has suggested.

And also, Dr. Sperling, I'm very interested in adding and complicating, as you suggest, a little bit more
the thought that there would be another category that
could provide some incentives for some development of
almost BEV X but different. I do like that idea. And I
think to move us right along, I'll just end there.

CHAIRPERSON NICHOLS: Okay. I'm going to go back
to the two colleagues who haven't spoken yet to see if
they're interested at this point.


BOARD MEMBER BERG: Thank you very much.

I, too, want to add my congratulations. My first
meeting was, in fact, the Pavley II standard back in 2004.
And so I was sworn in in the middle of August. And the
first meeting was in the middle of September. And I
specifically remember Lynn walking very close to me and
saying, "Well, you know, when you enter this room, that
isn't always like this." Because what could prepare you
for standing room only, 300 people, with cameras in the
back? And I remember thinking, "Oh, my gosh," and that
commercial don't let them see you sweat.

So this meeting was -- the whole process of this
was 180 degrees different. I do see that there has been a
huge change. I'm very excited about the enthusiasm of all
the car companies and the stakeholders that I personally
met with. I think we have absolutely the cars coming and
I think that we're addressing the infrastructure. There
might be some sticky pieces still left in that, but I think we're really addressing that.

And I think the one thing that I would like to put on the table and that is the third leg of the stool, a popular analogy that Professor Sperling likes to use really is consumer behavior and consumer choice. And we haven't spent a lot of time with that. I'm really hoping that once we take this historic vote that we will be able to take some of our time and effort and spend that time on consumer behavior and consumer choice. Because without that third leg of the stool, the stool is not going to stand firm.

And as a proud Leaf owner with almost 3,000 miles on my car and using the car many times as my primary vehicle, I can tell you that it is a huge change. And we have a lot of work to do there. And if you think about it, we have a lot of work to do to educate the dealers who are going to be selling these types of cars to these consumers. When you talk about moving beyond the early adopters who are willing to go without heat in order to save the mileage to make sure that they get home on their range, that is not going to be commercialization. So I think we really have our work cut out and I really fervently -- I'm passionate about this -- to do that study.
So at home today, we had talked about language of harmonization putting on an intent of to harmonize but not at -- but keeping the flexibility that we want to maintain our leadership.

CHAIRPERSON NICHOLS: This is on test procedures and other aspects of the implementation.

BOARD MEMBER BERG: Correct. And is it the Level III comes out on the federal, where we can harmonize --

CHAIRPERSON NICHOLS: I was quite re-assured by a conversation I had yesterday with a representative of U.S. EPA who was with us throughout this process that that really is going forward. But I think it doesn't hurt to have some language.

BOARD MEMBER BERG: And you had mentioned that. I'm following that up on mentioning that from yesterday.

CHAIRPERSON NICHOLS: Okay.

BOARD MEMBER BERG: On the clean fuels, I'd like to follow up on Supervisor Roberts. I really think we need to make a commitment to work with stakeholders, legislators, other agencies to streamline the permitting process. That is such a large piece of the cost. Not only in time, but actual outside consultant, the cost of that is enormous. And if we can help streamline that, that will also make things more efficient, especially on the time line.
Also on the fuel cells, I think -- and really we have done this on the ZEVs as well, acknowledge the fact that we are mandating new business models. We're mandating new business models with transportation. And in doing so, that we really need to monitor and keep part of the review process. This has to be a sustainable model. This cannot be a model sustained by subsidies or by companies that we are mandating put these whatever it is in. In this case, fuel stations. So I would like to see as part of the review process that we are asking are these models -- these business models sustainable for the future. They're going to become profitable.

On the ZEV, I'd like -- and those two things are just an acknowledgement, Chairman. I'm not suggesting that we need specific resolution, but if my fellow Board members agree, it's just something that will go into the review.

But I would like to put on the table and discuss that there is a significant change in the volume from going from an intermediate to the large manufacturer. And if there should not be any other criteria attached to that 20,000 cars that would, in fact, acknowledge that there are varying size of companies that have varying dollars and abilities to R&D. Do they really belong in the large manufacturer versus the intermediate?
Now that we're bringing intermediates into a commitment, not pure ZEVs, but the next level in 2017, it seems to me we're asking everybody to do their part. I think we want to make sure there is no unintended consequences that we are lumping somebody who should be in the intermediate category into the large category because we have this hard line of 20,000 cars. So I would just like staff's review on that and take a look at should there be anything other criteria that we should be adding to that 20,000.

Also on the intermediates, I understand there is a 15-day change. But one of the manufacturers had mentioned that they didn't have the flexibility as the large manufacturers in such things as the 177 states. And I understand that that was something that Tom Cackette -- Mr. Cackette, we talked about that. You said that was something you've already addressed and I'm comfortable --

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Yes.

BOARD MEMBER BERG: -- with that.

And with that, I'm excited that we're including an electric charging piece into the clean fuels. I really think that we need to have that as a priority because we're asking for the electric vehicles to be on the road now. And so I think we do need that behavioral study. And I'm all in favor of not putting infrastructure in to
make people feel better. But as I pulled my Leaf in yesterday and asked the parking attendant if they had a plug and went about looking for one with a parking attendant, which I'm very happy to say that they did and allowed me to plug in. As we're commercializing this, this is another big change. And I do think that we need to understand it, because it can't be a one-off thing.

So it was a lot of fun, because the parking attendant: A, had not been in a Leaf; had not seen it get plugged in. And I had several people come out when I went up to get my car, because I had to unplug it, and to say to me, "Oh, we had never seen one plugged in." So this is still all brand-new to everybody that we're going to ramp up.

And I do think that education, studying, there is a big piece and a big component. I think we should go and find a sitcom that gets a car that as they're having all their drama on the sitcom and pull in, they're naturally plugging in and going into the kitchen because we have to start introducing to people that this is the new reality. And this is the new normal.

With that, congratulations to everybody. It's really a great, great job. Well, well done. And congratulations.

CHAIRPERSON NICHOLS: Thank you.
Okay. Mayor Loveridge.

BOARD MEMBER LOVERIDGE: Very, very brief comments.

My first introduction to the CARB Board was "Who Killed the Electric Car?" I remember I was very puzzled at what I saw.

Second, the comment that Sandy made I think is particularly important that is the marketplace. I cheered what's taking place in the laboratory. We cheered the fact it's gone to the storefront. I think now the question is getting from the lab to the storefront to the streets. I think there is -- in addition to wishing the auto companies well, I think there is a major roll in this marketplace.

The third point and the one that I had not anticipated but particularly listening to the Nissan notion of the quick charger, it seems to me that is the kind of transformational idea that you can go to a gas station, not spend the three hours there listening to the radio, but seeing a gas station filling up your battery in the car. You know, if it's $10,000 for a quick charge and maybe $10,000 to install, with a modest amount of money, you could get a number of these quick chargers around the state and maybe begin to transform -- and less than difficulty Sandy has trying to make it around this basin.
I did want to ask Tom if he would respond to one comment from testimony on Tesla and just to have your reaction to it. This is on their third page of their testimony, Tom. It said this option will also reduce demand for ZEV credits, the sale of which Tesla uses to support its operation of both including further development of EVs and EV power train components. Do you have any comment on this conclusion that they offer?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Yes. I think the comment was that they are planning on selling the credits generated by Tesla since they're not subject to the regulation. And it's possible that their clients might be people who take advantage of the over-compliance requirement, which means that a company that does that would have its pure ZEV obligation or its obligation reduced by 40 percent on average over the four years. So to see that means those companies would meet the 40 percent pure credits. So the number -- the demand for their credits may come down.

CHAIRPERSON NICHOLS: I take this particular comment very seriously, just jumping in at this point. Because the State of California has quite an investment in Tesla's success in many ways. And I just want to make sure that people understand that the issue of the credits of the ZEV program has always been one factor in our
involvement with the Tesla program, but it's not the only one. And I think it's important to understand that there is a number of different pieces that go into making this company a success. And I don't want to say their success is assured, because it's never -- you can never bank on it. But I think they're in a very good place to do well in the market that's evolving here. And although we certainly would like to have even more opportunities to market the credits, I think you can be carefully watching the situation and make sure that they're not going to be put at a disadvantage. It's a great company. They've done wonderful things I think.

BOARD MEMBER BALMES: Madam Chair, if I might just address that point. I think one concern that Telsa expressed to me was not just the potential loss of ZEV credit purchases, but if other companies that are currently collaborating with Telsa in terms of power trains -- Daimler and Toyota right now that I know of. If they chose the over-compliance route -- I'm not saying they would -- but that could impact Telsa more.

CHAIRPERSON NICHOLS: But, fortunately, I think we've come up with some ideas for how to keep this thing under control.

Back to me. I think there's going to be a couple of items that we're probably going to have to vote on,
unless I can persuade folks to do things a little bit differently.

But before I get to my comments on some of these items, I actually want to take advantage of this opportunity while we still have at least a good representation of our stakeholders with us, including a number of representatives from industry as well as environmental and consumer groups to specifically call out two members of our staff who don't always attend our Board meetings and may not be known as widely as they should be for the work they've done, but who truly are fathers of the low emission vehicle programs. And that's Steve Albu and Paul Hughes. Steve and Paul, would you both please stand up?

(Applause)

CHAIRPERSON NICHOLS: That's what they call a spontaneous outpouring of regard and affection.

But I just want to say a couple of words here about these two guys because really, they have been at the center of the ARB's entire vehicle program since at least 1990 when the first ZEV regulation was adopted.

And the program that we are looking at today is not the first time that they've had to reinvent everything that they were doing either because they've done this before, each time finding new ways to continue
California's leadership position in the area of passenger cars and light-duty truck emissions controls.

Beyond setting tailpipe fleet average standards, they've been involved in ever more controls of emissions of all types going back to the original concept of dealing with evaporative emissions before anybody else was even looking at counting them. And also the whole program to require on-board diagnostics that I mentioned yesterday. I just can almost never stop smiling what I think about the role that California has played in developing of that technology and the whole concept of using the car to monitor itself.

They have undertaken technology demonstrations that have proven catalysts worked, that you could do on-board diagnostics and proving the feasibility of a zero evaporative emissions level when people said it couldn't be done. And, you know, they do all this from their relatively modest facilities that we have out there in El Monte tee. I think I can say it's not a palace that they work in. But they have developed a really I think remarkable knack for listening to the industry in a deep way, understanding what's needed and what's possible, and in a very positive way that isn't either adversarial to industry or to the vehicles that they make, but in fact is one of a positive support of nature pushing continuously
to find ways to get beyond whatever people thought could be done at the moment.

And they've done this also making very conservative cost estimates about what things would cost, which consistently have been undershot by industry when they actually got into complying. They have found time and time again that the companies were able to find lower cost ways of complying.

So I really just want to say right now that your commitment to making California a leader here as well as your perseverance is very largely responsible for us being able to be here today. And on behalf of all the Board, I just want to say again thank you very much.

(Applause)

CHAIRPERSON NICHOLS: Also I have to say that when I was in Washington with Tom Cackette for a good bit of last summer during some of the most horrible heat waves and these guys were constantly looking at all the data and the information that was coming in, you know, from the meetings with the industry, it was really great to know that they were there. And we weren't going to slip into any errors as a result of not knowing what was possible or what could be done. So it's been a great process to get to where we are.

I think it's time to bring this to a close. And
I think there are a few things that we all agree on, which we can just sort of tick off and some others that deserve maybe a little bit more conversation.

So I think we're in agreement on the earlier review of the feasibility of PM2.5. I just want to make sure that Aaron, I think you're our scribe here, Aaron Livingston, our counsel, that we're in agreement on the four items that Hector De La Torre raised, the general comments from Sandy Berg. I think we're all in agreement on, but don't require any specific regulatory language.

And so where we have potential changes that have been put forward, which I don't sense that we've got consensus on -- at least I don't have consensus on them, so therefore I'm not hearing consensus -- are fixing some new categories of BEV X, the ten-mile threshold issue and the early phase in of the one milligram per mile PM standard.

So let me start with that one first because on its face, you know, I would like to agree to it. I don't have an objection in concept to the idea that we should be pushing for the earliest possible improvements in PM emissions. My concern with that is that we are already pushing the envelope ahead of where EPA is going on the LEV III program. They're not dealing with PM at all, as I understand it, at this point.
And to be perfectly blunt, I don't want to do anything that endangers our waiver here. We want to get this package approved as a package. And I think that this is one of those improvements, which as you've said yourself, is in a sense somewhat cosmetic because it will have to be reviewed to determine whether the technology is there anyway.

The way the program is now, we have the ability to look at where we are in 2015. And if it seems as though technology has come along, the measurement techniques that people are worried about, they are -- or we've gone to a different approach to measuring particle mass, we wouldn't be precluded from moving ahead earlier, but to lock it in now in the regulations strikes me as being just a little bit pushing too far. So I would prefer not to make that change if I could do that.

Yes?

BOARD MEMBER BALMES: Well, understand you not wanting to lock it in. What I was proposing wouldn't necessarily lock it in because there would be a technical review.

CHAIRPERSON NICHOLS: Right. But the pressure will be on to keep to it. And it would be -- as we've done with other things where we want to keep the pressure on, it's a slight tilting of the balance in the opposite
direction. I don't know if staff wants to add anything to that comment.

EXECUTIVE OFFICER GOLDSTENE: We always have the option to come back, I think.

CHAIRPERSON NICHOLS: Yeah.

EXECUTIVE OFFICER GOLDSTENE: Let the review -- as we get more information, we'll share it with the Board.

CHAIRPERSON NICHOLS: We are already beyond what we know is even potentially possible. Yes.

CHAIRPERSON NICHOLS: Yes, question?

BOARD MEMBER D'ADAMO: I have a question about the waiver issue, because I'm in favor of this. But the issue you raised about a waiver --

CHAIRPERSON NICHOLS: Technical feasibility is one of the issues that's always involved in a waiver, just to be blunt about it. EPA is given the authority to deny a waiver based on lack of technical feasibility for what's in the regulation. I'm not saying that they would or that we would lose. I think know that. But there's enough stuff in the record out there right now to cast considerable doubt about that.

DIVISION CHIEF CROES: The technical --

CHAIRPERSON NICHOLS: You can do resolution language that says we'd like to get there, that we want to get there. It's actually putting it in the regulation
that's the decision -- I'm not sure that's what you're proposing.

DIVISION CHIEF CROES: The technical activities already happening. Basically, we're working on the management techniques right now. It's something that you will have the answers in a few years.

But I agree with you the basically pushing the bottom early may be risky in terms of all the other problems. When you have the data, like I say, in a few years to be able to make the right decision about things like number count versus mass and what the number levels really should be.

BOARD MEMBER BERG: Madam Chair?

CHAIRPERSON NICHOLS: Yes, Ms. Berg.

BOARD MEMBER BERG: One of the reasons I'm uncomfortable with moving the standard forward right now is I think we don't have enough data on the European tests, which my understanding is particle based and its equivalence to our test.

And I got some information yesterday that suggested that if you looked on an equivalent basis for what they know right now, it isn't a one gram in Europe. So I think there's too many unknowns that we are committed to getting the information and coming forth on the 2015. If we can do it sooner, great. We have seen that pushing
people tends to be a good way to go. But I think we need
more certainty, and I would be comfortable moving on that
basis.

CHAIRPERSON NICHOLS: If this really was an area
where we had gotten information and a strong input from
the large and technically competent environmental
organizations, I might feel differently about it. But we
haven't.

BOARD MEMBER BALMES: Well, actually --

CHAIRPERSON NICHOLS: I've seen nothing that
convinced me.

BOARD MEMBER BALMES: Let me -- first of all, I
don't consider it a cosmetic proposal, because I think --
can I just object to the characterization, because I think
it really makes a difference how much PM is emitted in
one --

CHAIRPERSON NICHOLS: I didn't mean to suggest
that we didn't care about the PM.

BOARD MEMBER BALMES: And the second thing is
I've heard a lot from the mainstream environmental groups
I think to group their supporting trying to go to an
earlier one milligram per mile standard. That's actually
a part of the reason I'm putting it forward. So I think
that the mainstream environmental groups are behind that.

CHAIRPERSON NICHOLS: Supporting it is one thing.
And having the information to back it up is something else.

BOARD MEMBER BALMES: I agree with Ms. Berg that we don't have the information. So I would amend my proposal somewhat to say that I would like to have the goal of having the one milligram per mile standard earlier, if technically feasible. So if you don't want to lock it in because of fear about a waiver denial, which I appreciate is an important concern --

CHAIRPERSON NICHOLS: It's been stated as a goal. BOARD MEMBER BALMES: Can we state it as a goal that we're trying to get to?

CHAIRPERSON NICHOLS: Yes, you can do that. And then I withdraw my objection. And we would probably have consensus on the Board.

EXECUTIVE OFFICER GOLDSTENE: We would do that in the Resolution.

CHAIRPERSON NICHOLS: Yes.

BOARD MEMBER D'ADAMO: So in light of this recent development here, are we bringing it back as soon as we can in order to receive the information from what's going on in Europe and make a better assessment? Is that --

CHAIRPERSON NICHOLS: 2015 was already the proposal.

Well, I know Bart Croes was here yesterday. I
don't know if he's here today. I've asked for a report to the Board on what's going on on this whole issue of measurement, the black carbon issue with relationship to climate change and other particle measurement issues because I think it's time for a technical review here on whether our programs are adequately focusing on the right things. And, you know, we also need to look at methane too. But particularly on the black carbon, there is a lot of information out about the benefits of taking an approach that focuses more on the shorter term very powerful greenhouse gases as well. So I think there will be other opportunities to focus on this issue besides just the review of the LEV standard. Okay.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Mary, can I make one comment on this, which probably complicates it for you rather than simplifies it. But the measurement issue, I think there is a high probability can be solved early enough. And, therefore, we'll either change it. The technique will switch to number or something like that. But that's going to be resolved in the next three years, four years I think.

The real issue here that causes staff to propose a slower implementation phase is we are convinced that in the 2022 to 2025 time frame when the GHG standards get really tough that there is going to be significant new
combustion technologies tried out by the auto manufacturers. And the real issue here is just simply if they develop that technology and when they look at the PM emissions that they thought they were going to control the one gram and they kind of go, whoops, it doesn't do it, we run the risk of losing that technology for GHG while they go back and try to work another year or two to fix the problem. So it's really a risk management -- from our viewpoint, it's a risk management situation and how hard do you want to push the concurrent development of PM control with the GHG control and what happens if it doesn't work.

CHAIRPERSON NICHOLS: Well, I think Dr. Balmes' proposal as he has now formulated it is a good way to go because it keeps the issue front and center in terms of what we need, which is both PM and GHGs. But it doesn't force them to do anything that doesn't make sense. So I'm actually quite content with this outcome if others are as well.

So then the last bit was the new categories for redefining the threshold for EVs. And I don't know -- maybe I'm in a peculiar position here, because I'm arguing for flexibility as we all are on one hand and not for other things. But it seems to me that this effort to sort of reward everybody and make all the children above
average is different from allowing people to do the things or allowing competition to bloom.

In other words, whether we change our definition of how many miles you need to operate on pure electric or not is not going to have very much impact in my judgment on whether or not Toyota continues to market the plug-in Prius that works the way that Prius does, because they're looking at a worldwide market for plug-in vehicles. And their assessment is that they're going to do better with a slightly more electric version of the Prius than they are with something that pushes for much more battery, because they can do that at less cost and therefore get people used to plugging in and people like Ms. D'Adamo will move on that scale and that will be good.

On the other side of the coin, I think BMW is going to pursue their strategy of the small gasoline engine attached to the more powerful EV because they think that's going to be more successful for their customers. And that's a good thing. And you know, we can all have different views about which of these things they buy or lease.

The issue really is what do we need this ZEV mandate for. We keep coming back to that. How do we turn it into something that actually is accomplishing something over and above our existing standards. And it seems to me
that keeping it as pure, if you like, as we can but relatively limited. As Mayor Loveridge and others have pointed out, the mandate is not that huge, you know. It's nothing like what we're hoping for in terms of what the market is actually going to produce. So are we sending -- what kind of signals are we sending in the short term if we start changing our definitions again to try to get people more credit for phasing in of things they're kind of already doing anyway versus trying to keep a goal out there that we're holding people to.

I don't want to speak for the staff because they can speak eloquently for themselves on this issue. And I don't want to be narrow minded about all of this either. I really don't want to be contentious about it. I think we're in some danger that we're so euphoric about all the good stuff that's going on out there that we're going to start handing out credits right and left in a situation where it's not necessary and may take focus off of investment in the things that we need people to stay focused on, even while they're trying all these other things out. I hope that's clear. But that's why I'm not very enthusiastic about the proposals from my two colleagues here.

BOARD MEMBER SPERLING: Could I kind of address it at the same level that you are?
CHAIRPERSON NICHOLS: It's a general comment.

BOARD MEMBER SPERLING: There's two different approaches, and who knows which one is right. One is to say we want to get the pure ZEV technologies out there because that's where we want to be and let's not mess around. Let's stay focused on that. Another one says that let's try to get as much of this technology out as many different product lines and at low cost as possible. And that will -- and that will need to as much or more as quick an attainment moving towards it.

CHAIRPERSON NICHOLS: My argument is that's going to happen anyway, because that's where the market is going. I think they're not being driven by our ZEV mandate to do all these things. I mean, I'd love to think it was all us. But you know, it's not. It the world is headed in the direction of getting off of petroleum. And they want to sell cars.

BOARD MEMBER D'ADAMO: I think in large part the reason we have those graduated seniors is because of the ZEV mandate. We're able to -- we got here and what ended up happening -- and then once we get to the point where that incrementalism has a large enough class, they move on.

And so I felt very purist, which is why the
over-compliance issue troubled me. So back when we allowed more flexibility for hybrids, for example, I was one of those I saw things black and white. And now I see this whole package in terms of shades of gray. And the reason that in these two areas here the Super Bowls or the Toyota plug-in, the reason I think that we ought to explore this more is now we have even another level of shades of gray. It's not just range, fuel economy, but it's also the driver's behavior and driving patterns. And we just don't know enough about that.

So kind of circling back around to my comments earlier. I would at least like to see some further review of this with more in-depth analysis based on use.

EXECUTIVE OFFICER GOLDSTENE: Certainly more data for both of these proposals would be --

CHAIRPERSON NICHOLS: Data is always good.

EXECUTIVE OFFICER GOLDSTENE: Would be helpful. But the affect of what is being proposed does weaken what we're trying to do here. And while we see the basis of the argument, we don't know enough. We were on the BEV XX or whatever we want to call the Volt idea. It would have the effect of lessening GMs ZEV needs, for example. The consequences --

CHAIRPERSON NICHOLS: It slows the program down.

Mr. De La Torre.
BOARD MEMBER DE LA TORRE: I agree with the general concept of having the flexibility. I've had conversations with some of my colleagues about having as much out there as possible so that consumers have a variety of things they can choose from and then we'll see where it all goes.

I think that the key point for me on this issue specifically is that they get a one for one credit for a full BEV for these cars. And they're not. And you know maybe it's 80 percent. Maybe it's some other percentage. But it's pretty clear they're not a full ZEV so they don't get the full credit.

And I think we need to set some standards and figure out what some corresponding benefit from these vehicles are and then they get a corresponding credit to that benefit. But a full credit is -- I think it's a steep price to pay for that vehicle, even if the consumer wants to get it. There will be benefit to those consumers. There will be benefit to that manufacturer. It just won't be 100 percent. I think that was the most compelling thing that I saw in the discussion over these cars.

BOARD MEMBER SPERLING: Let me try to explain though. I mean, I would differ with the assertion that this slows down the program. I would say just the


opposite. Because, you know, what we're not saying is not
one for one credit. But, for instance, if we had this new
category, they're only getting a small amount of credit
per vehicle and only has a limited value in terms of as I
suggested, for instance, the BEV XX would be only 25
percent. And it gets smaller.

So the outcome of what we're talking about
here -- at least what Dee Dee and I are suggesting is we
actually get a lot more vehicles out there and they
wouldn't be as -- perhaps they won't be as many as the
pure ZEVs, but many more vehicles out there with many more
batteries, many more drive lines, longer supply chains,
more consumer experience.

CHAIRPERSON NICHOLS: They don't need our ZEV
program to do that. And in the mean time, we're sliding
back into the world of ULEVs and ZLEVs and PLEVs and
however many other LEVs there are in the world, which is
what we're trying to get away from when we went back to
this package of doing everything together. We were trying
to make it more simple and more clear. And I think you're
being misled by the pattern of what's happening now into
thinking that we have to somehow add rewards to keep it
going. I really believe that's not necessary.

BOARD MEMBER SPERLING: I would just say, you
know, looking at the industry, I don't -- perhaps I don't
have as much confidence as some people in the room about
the investment actually happening and the movement
forward. I mean, Nissan sold 10,000 BEVs in the whole
state, in the whole country. That's a tiny, tiny number.
The cost of that vehicle -- the true cost of that vehicle
is far more than what they're selling it for.

I mean, a lot of what we're talking about is
symbolic. And that is sending a signal that we really are
committed to it. We're not prescribing. We aren't
prescribing a certain type of technology, but we really
are committed to helping both on the consumer side --

CHAIRPERSON NICHOLS: We're not helping Nissan by
adding the BEV XX. You're making it harder for Nissan.
You're undercutting them by doing that.

BOARD MEMBER SPERLING: But that's okay. What
we're doing is sending a signal that, you know, this is a
technology for all the companies to be involved in.

The point is it's not moving forward. The point
I was trying to make about it, it's got a long, long ways
to go. The costs are really high. The industry is losing
a lot of money on every one of these vehicles, and they're
doing -- and as a result of that, they're not making
investment. Nissan really is the only company that's made
a sincere major commitment. There's a few other companies
like GM that are kind of on the cusp.
But we've got a long ways to go to get to where we want to be. And I get nervous that when we start trying to put things into too few boxes. And I would like it to be -- ideally, we have a continuum -- some kind of performance based. And maybe at some point we should go back because we've talked about BEV X. Maybe it's all how many electric miles you get, something like that. And maybe that's an outcome here.

CHAIRPERSON NICHOLS: That would be direction to the staff to take a look at a different approach. And we also recognize that things like the efforts that we're undertaking to get the fueling stations in, to look at working with the cities who are key partners in whether or not this is going to be successful if we can't get your home charger installed by the time you bring your vehicle home, you're not going to buy an electric vehicle. There are so many impediments to this market success that are way beyond what ARB's regulatory program does. I just don't -- I really think it's a mistake to keep tweaking our program and seeing that as the main way to get there.

Yes?

BOARD MEMBER LOVERIDGE: Tom has spent 24/7 thinking about this the last several years. His essay --

CHAIRPERSON NICHOLS: Absolutely.
CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: You have two issues here.

CHAIRPERSON NICHOLS: The staff rescue us again.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: You know, I very much respect the division. Let give you my opinion in simple terms and then that's the best I can do at this point.

The BMW concept which led to BEV X, which is the long-range battery range, with an APU, my view that vehicle is a BEV. My view is that a Volt with a bigger battery on it that gets 50 miles but can still operate indefinitely on the combustion engine is not a BEV. And that's why we have in the T ZEV category and why it cannot be used to meet General Motors BEV requirements.

And this is just a matter of that curve, you know, as to what credit which we think relates to its environmental advantage is. So it's quite a ways down the curve. BEV is at the upper end, the pure ZEV. And the Prius plug at the other end right now.

So for the GM Volt concept, staff just doesn't believe that just adding 50 miles makes it a battery Electric vehicle or should it get battery electric vehicle credits that can be used in the pure ZEV category.

On the other one, as to whether it sort of comes down to is the Prius concept minimal -- sort of the
minimal end of the range is that really even a plug hybrid or not, should it be in this ZEV category or should it be somewhere else. We tried to say that if it was ten miles of driving capability at least it drove like an electric vehicle. Every morning you get in and you get pretty much an electric drive for at least the first ten miles of your trips, which are many, many trips.

And this other way it just -- we don't think it will be perceived by consumers being as much of an electric vehicle. And the difference isn't really technology so much, it's that to make it meet the requirements we propose, the issues need to be used in a different battery of roughly the same size, but of a slightly higher cost which would provide both power and range. And so that means it's more expensive, but it's not like it takes their concept and throws the car away and say this whole concept is no longer valid. It just needs a different battery.

And for the plug-in Prius itself, it meets our requirement. This is only for bigger cars that use the same drive train. So the real issue here is, well, I guess if you go with the staff proposal, it means Toyota and other people would have to do more development work to provide a power and energy battery that would make a larger car like a Camry or something meet this
requirement. And if not, you could largely transfer the
Prius plug-in technology into a bigger vehicle. And you
wouldn't have to do much to change it and the price of the
vehicle would be somewhat lower. That's kind of what's at
stake. It's not a good no-go thing. It's a, am I going
to -- is this a more BEV like vehicle or is it not.

CHAIRPERSON NICHOLS: Dee Dee.

BOARD MEMBER D'ADAMO: But so if you could just
comment on further study, because some of these vehicles
are already out there. For example, the BMW could easily
be studied. And I think there was a discussion anyway
between the staff and BMW and the NGOs on studying. But
what you're talking about, the super Volt, I don't know if
there would be an ability to study that. When you say the
engine could use it indefinitely, well, it could. But in
practice, would it be used indefinitely by everybody? I'd
like to get a better sense.

And then same thing on obviously the plug-in that
Toyota has. That's already going to be introduced. But
the Camry, I don't know how involved it would be to study
use of it transferring over to that other platform.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Well, I
think you've really hit on the most important point that
has caused the staff to be troubled or coming up with a
definitive recommendation. We did ultimately. But that
is that we don't have the answers to these because we don't have the cars.

We looked at the Prius plug-in, for example, with round-the-block drive a couple years ago. But more recently, some of the staff have been able to drive it more often. And that's where we start getting at least a better impression of how it meets various people's needs. And then if we can collect data over time over a few-year period, we'll have a much better understanding, factual understanding of how this vehicle performs from various consumer and environmental metrics.

So I think our approach, which is not in conflict but just different than what Dr. Sperling has said, is that we tended to be more conservative on how to approach this because we don't have any information. And then we'd like to see when these cars become available, you can't drive a BMW I3 equipped vehicle yet because it's not coming out until next year. We don't know the answers to these things. But we chose not to open the range to more and more technologies that might not be in line with how we see the technology needing to go until we actually get the data.

And then at that point, as Dr. Sperling said, you're going to go back and re-evaluate what is the metric for this program and is it vehicles miles traveled and
stuff. But you need data to do that. So it just made our judgment on is this consistent with the goal we're trying to get to, which is more BEV-like and fuel-cell-like vehicles, rather than some weaker performing vehicles that have a higher fraction of gasoline usage.

CHAIRPERSON NICHOLS: So can I push this a little bit to a conclusion here because I think we're ready to see what the choices are. The choices are staff proposal plus a direction from the Board to accelerate your study of the possibility of reframing or going with a direction that was in the original set of amendments that were proposed by Dr. Sperling and Ms. D'Adamo. I think those are sort of -- that's kind of the range of choices here is --

BOARD MEMBER BERG: Where does the new performance standard -- I heard the two of you talking about a performance standard.

CHAIRPERSON NICHOLS: I think that would be a goal or a potential -- you know, potential outcome or further study would be that we would be reformulate the ZEV program to be more of a performance standard. That is a long-term goal and one that I think we always need to be looking at as a metric of sort of the gold standard of what we would like to be doing as regulators, if we could.

DIVISION CHIEF CROES: Where we've drawn the line
for our "conservative" approach is how much or whether the
engine is needed to operate the vehicle for a significant
amount of time. And the lower bound is ten miles for the
Prius like and then the lower bond for the ZEV X is 5
miles. And I think that was what we used as our best
conservative judgment about where the bright line is.

But I think the staff is comfortable with I think
where you all may be going or some of you to study this --

CHAIRPERSON NICHOLS: Let's not presume anything
yet.

DIVISION CHIEF CROES: For example, BMW is free
to provide all the data on the BEV X. We'll know. I
think if we can get similar agreements at the lower value,
we can look at that as well.

CHAIRPERSON NICHOLS: Right. So I'd like to look
at these two people here and say what do you want to do?
Do you want to have a vote on changing the regulation as
it is today up or down? Or do you want to reformulate
your proposal as a Board directive to staff to do the kind
of analysis that they say they intend to do and bring it
back to us?

BOARD MEMBER SPERLING: I think philosophically I
feel strongly enough that we should be going in the
direction of encouraging more experimentation that -- and
in a way that leads to lower cost.
And I'm not so worried about getting specific reductions or exact number of BEVs out there. I'd like to get more. So I'd like to stick with my proposal. And you know, it's not -- in the end, this is a huge success no matter how it turns out. And these are relatively small changes. But I think philosophically I believe in it strongly enough philosophically I think we should be ending that message and going more in that direction. And I think the implication is if we did accept it, these are pretty small changes. But I think they're important enough that I would like to --

CHAIRPERSON NICHOLS: Okay. Do you want yours lumped in with that or not?

BOARD MEMBER D'ADAMO: We can. I would support you and then also with the flexibility on the lower -- my backup is to have a study. So hope we can bring it back to that.

CHAIRPERSON NICHOLS: All right. I think we need a roll call vote? And everybody understands the proposal on the table?

BOARD MEMBER BALMES: Can you restate the proposal?

CHAIRPERSON NICHOLS: That's what I was about to do. I think I can shorten it.

It's that the motion made by Dan and seconded by
Dee Dee is in two parts. One is an addition of a new category for the BEV XX. And the other is to change the ten-mile threshold for being classified as a BEV to an equivalency concept, which will have a score of ten miles overall on electric as opposed to ten solid miles.

BOARD MEMBER SPERLING: And allows for -- makes it easier for larger vehicles to come in as a plug-in hybrid as well.

CHAIRPERSON NICHOLS: That would be the affect of doing it. Okay. And --

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Before you do it, there was one other -- you had mentioned on the BEV XX, which is the Volt, having it limited. Is that part of the proposal?

BOARD MEMBER SPERLING: Yeah, 25 percent.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: You could only use it for 25 percent of your pure ZEV requirement.

CHAIRPERSON NICHOLS: Pure ZEV requirement.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Whereas, the two BEV X is limited to 50 percent.

CHAIRPERSON NICHOLS: Okay.

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH CHIEF BEVAN: What model year that would start?

CHAIRPERSON NICHOLS: I can't understand --
CHIEF BEVAN: What model year would that be allowed?

CHAIRPERSON NICHOLS: What model year do you intend for this to start in?

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH

CHIEF BEVAN: I bring that up, because that could very significantly impact zero emission vehicles being delivered in the next few years if it was an early start. These manufacturers have a lot of credits we were hoping they would be spending now so we would see actual product coming to market. It appears the categories of fuel cells --

CHAIRPERSON NICHOLS: This is going to extend the lifetime of those credits --

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH

CHIEF BEVAN: Oh, yeah.

CHAIRPERSON NICHOLS: -- beyond what you envision being able to use the credits they already have. Thank you.

ASSISTANT CHIEF COUNSEL LIVINGSTON: There are two items I'm not sure were covered. One was ensuring that upstream emissions around and encapsulating over-compliance.

CHAIRPERSON NICHOLS: We've concurred on that one.
ASSISTANT CHIEF COUNSEL LIVINGSTON: Sorry.

The other one that manufacturers report no later than December 31st, 2016, on whether they're choosing over-compliance.

CHAIRPERSON NICHOLS: I think that's a consensus. That's part of the regulatory amendments. They've all agreed on. This is the only item in contention and then we're going to get to the actual package.

So Madam Clerk, please call the roll. You can vote yes or no.

EXECUTIVE OFFICER GOLDSTENE: Chairman, we still need an answer --

CHAIRPERSON NICHOLS: A nay vote means we go back to the staff proposal.

EXECUTIVE OFFICER GOLDSTENE: We need an answer from Professor Sperling about the start date because it does have to --

CHAIRPERSON NICHOLS: Oh, that's right. Just to be clear, if you vote no, you're going back to the staff proposal.

Sorry. The question is what model year does this begin with? Never do anything arbitrary. It's open to discussion.

BOARD MEMBER SPERLING: I'm willing to defer to staff on what would be --
CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: The logical choices I think are soon or 2018.

CHAIRPERSON NICHOLS: Either do it --

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: And the implication is there would be fewer BEVs I think in the earlier years because more credits could be used because these generates more credits if it starts now. If it starts in 2018, it will be a lesser -- well, same impact but it will be relatively lesser, I guess.

BOARD MEMBER SPERLING: I'm okay with 2018.

BOARD MEMBER BERG: Does that lessen the impact?

SUSTAINABLE TRANSPORTATION TECHNOLOGY BRANCH

CHIEF BEVAN: Yes, it does to some degree.

CHAIRPERSON NICHOLS: Okay. Let's call the roll.

BOARD CLERK MORENCY: Dr. Balmes?

BOARD MEMBER BALMES: Oh, boy. I have to go first. I know why Sandy was glad I came on the Board.

CHAIRPERSON NICHOLS: You can pass and get called on later.

BOARD MEMBER BALMES: I think I will actually.

CHAIRPERSON NICHOLS: He's deferring.

BOARD CLERK MORENCY: Ms. Berg?

BOARD MEMBER BERG: Deferring.

BOARD CLERK MORENCY: Ms. D'Adamo?

BOARD CLERK MORENCY: Mr. De La Torre?
BOARD MEMBER DE LA TORRE: No.
BOARD CLERK MORENCY: Mayor Loveridge?
BOARD MEMBER LOVERIDGE: No.
BOARD CLERK MORENCY: Mrs. Riordan?
BOARD MEMBER RIORDAN: Regretfully no. But certainly support a study.
BOARD CLERK MORENCY: Professor Sperling?
BOARD MEMBER SPERLING: Yes.
BOARD CLERK MORENCY: Supervisor Yeager?
BOARD MEMBER YEAGER: No.
BOARD CLERK MORENCY: Chairman Nichols?
CHAIRPERSON NICHOLS: No.
BOARD MEMBER BALMES: Regretfully no for Balmes.
BOARD MEMBER BERG: Yes.
BOARD CLERK MORENCY: Ms. Berg?
CHAIRPERSON NICHOLS: Okay. You can give us the tally.
BOARD CLERK MORENCY: The motion is defeated, three to six.
CHAIRPERSON NICHOLS: Thank you. So the staff recommendation prevails. Good discussion, everybody.
And we still want I think to bring back a question of asking the staff to do a study on these items. And we don't need to have a roll call vote on that one.
EXECUTIVE OFFICER GOLDSTENE: We'll incorporate that into the Resolution.

CHAIRPERSON NICHOLS: Yes. The direction to do the study goes into the Resolution. Absolutely. All right. I believe that --

BOARD MEMBER BALMES: Mary?

BOARD MEMBER DE LA TORRE: On the study issue, the scale that is being discussed, I think that's a conversation we need to have that is flushed out that as soon as staff can take us in that direction. Because I think it should be a broad discussion of how do we do that, how do we peg it to performance and make the credits for performance across the board.

CHAIRPERSON NICHOLS: Maybe before you do a study you actually come back with a study design for what you plan to study and bring that to the Board. That ought to be something you could do in like six months.

EXECUTIVE OFFICER GOLDSTENE: We're having a discussion about whether or not we can compel the data to be submitted to us or not.

CHAIRPERSON NICHOLS: Whether we have sufficient information?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: Yeah, I think before even the study, we need to know can we get the information, which right now how it's operated is
contained in the computer on the vehicle. And the vehicle
manufacturer has to be willing to provide that data so we
can either come up with a mandate that says you must
provide data or we can just simply condition -- if you
don't provide data, I guess maybe in the future you don't
get the benefit of some positive change. So I think
everybody would want to do it, but

BOARD MEMBER D'ADAMO: If an auto maker requested
additional flexibility, they need to provide the data.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: I think
we're okay with the Resolution.

CHAIRPERSON NICHOLS: Okay.

BOARD MEMBER BERG: Madam Chair, the only thing
we really haven't discussed is the volume change and if
there should be any other criteria.

CHAIRPERSON NICHOLS: Oh, right, for the
intermediate.

BOARD MEMBER BERG: For the intermediates. And I
would appreciate the comment from staff on that.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: We were
unclear on what the outcome is on over-compliance in
general in the various proposals. Is that still on the
table?

CHAIRPERSON NICHOLS: There's no further items on
the table. We agreed with Mr. De La Torre's four points,
and that was it.

    BOARD MEMBER BALMES: Did we resolve the proposal
by Dr. Sperling, the two gram going to five grams?
    CHAIRPERSON NICHOLS: I refused to bring it up.
Prerogative of the Chair.

    BOARD MEMBER BERG: Sounds like resolution to me.
    CHAIRPERSON NICHOLS: Not happening.
    BOARD MEMBER BERG: On the volume change, is that
the same --
    CHAIRPERSON NICHOLS: I'm happy to have a
discussion about that, but you need to be -- we need to
have a discussion on what we're doing with that.
    BOARD MEMBER BERG: The question to staff is --
and I understand that we have moved the volume from 60,000
to 20,000. Should there be any other criteria, global,
ranking, any other criteria to make sure that we do not
have any unintended consequences of moving a manufacturer
from intermediate to large volume that really doesn't have
the ability to compete in that arena. That's the question
for staff.

    AIR POLLUTION SPECIALIST WONG: I think staff is
open to adding more criteria. I think we need direction
on what that criteria should be because some of the
manufacturers that are affected by this change, something
like a worldwide sales volume doesn't help them very much.
So I'm not sure what other criteria we're looking for, but we are very open to adding other criteria to the size definition of 100 percent. I don't know what that criteria should be.

CHAIRPERSON NICHOLS: Maybe I'm confused about two different issues. I thought that this was a problem that might be able to be solved by giving people who were just coming into that category as much time as they would have had. In other words, there was an issue about how much time people had to build up to the full compliance. Is that the same issue?

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: That was brought up by VW. It seemed like it was a separate issue.

CHAIRPERSON NICHOLS: It's not the same.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: It was when you buy a company, does it make you become a large manufacturer? And the suggestion was just make everybody 2018.

I think back on what the criteria are, I guess I would be more persuaded by looking at it for a couple years and seeing what they're doing. Because we did have sort of the dichotomy of, no, we don't have the resources to be a big manufacturer, but gee, we're developing the BEV, for example. So how does that play out? The
marketplace, as Ms. Nichols said before, may be what
drives them to have to be competitive.

BOARD MEMBER BERG: They need to be competitive.
There's no question about that. Because this is the
direction.

And so certainly not to jump on the train, in my
opinion, would not be a sustainable decision. That said,
we do have a huge range. If you look at the graph between
who is in now the large volume manufacturers. And I just
want to make sure there is no unintended consequences.

I'm very happy with if we agree that we will
monitor it and that our goal is not to transfer an
intermediate manufacturer into the large category that
truly doesn't have the research budget, the sales, the
volume to be able to compete. And we can leave it at
that. And if somebody comes and makes a compelling
argument that they certainly know they can call me as
well, then we can take it up from there. But I think we
have to be sensitive to the fact we have made a huge
change and there could be some unintended consequences.
And we need to be willing to look at that. I'm happy with
that, Madam Chair.

BOARD MEMBER BALMES: Mary, I would just like to
add my support to what Ms. Berg has said.

Since we've been mentioning other companies
specific -- and maybe it's because I was a proud RX7
owner, I do think Mazda is a somewhat special case here
and the fact they've been divested from Ford which was
carrying their R&D budget for a considerable amount of
time. So I do think that this is an issue that we need to
monitor. I'm comfortable with what was just discussed.

CHAIRPERSON NICHOLS: Okay. Thank you.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: You
brought up the VW thing. Do you want to deal with that?

CHAIRPERSON NICHOLS: Well, I think as I
understood it that they're probably going to get their
situation resolved.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: No. I
think the issue was they're going to become big. But they
will be subject to the full ZEV mandate in 2018. Or if
they buy Porshe, does that action of buying Porshe mean
that they have to meet it in '17 or '16?

CHAIRPERSON NICHOLS: I see.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: That
was the only -- the distinction of the current regulation.
They brought into question is whether it made sense.

CHAIRPERSON NICHOLS: I'd like to fix that to
give them the same amount of time that anybody else would
have gotten. Is that okay? All right. Thank you for
bringing that back.
Are there any other hanging issues? Any other areas of confusion, or are we ready to move to a vote?

BOARD MEMBER YEAGER: Other than the five grams.

CHAIRPERSON NICHOLS: I'm sorry. Five grams.

CHIEF DEPUTY EXECUTIVE OFFICER CACKETTE: This was my question before. If the five grams and everything other than including the upstream emissions, was that decided or not as part of the over-compliance agreement and that's all we were asking.

CHAIRPERSON NICHOLS: Well, I think this is completely inconsistent with the discussions that we had at the national level. And I cannot support it. And I would really ask you to forgo having to put yourself out there to show your cojones by voting for it. I mean, what is the point here? We can't do it. I can't let you go in this direction.

BOARD MEMBER BALMES: I thought it was an unresolved issue.

CHAIRPERSON NICHOLS: Okay. But now I want to bring it back again.

BOARD MEMBER BALMES: I think Mr. Cackette was also unclear what we were going to do with that. So I just wanted to be clear.

CHAIRPERSON NICHOLS: Well, I would like it to be
clear we're not making a change. But I don't want to --
if you want to vote on it, we can do another roll call
vote. Okay. We're not doing another roll call vote.
Okay. Thank you. I'm sorry. I misunderstood. I thought
that was where we were.

I guess it's been a long discussion. And I'm
sorry if I confused any of you.

I've been asked to make an announcement that ten
minutes after we vote there's going to be a conference
call that's for media only. Our communications people
have set this up. So if there's anybody listening on the
web who is media who wants to call into this conference
call, the number is 1-800-619-3420. 1-800-619-3420. And
the password for the call is "clean cars." That's a good
password. And if you're not media, I guess you're not
allowed to call one way or the other.

All right, folks. I think we're done, except for
the final vote. So --

BOARD MEMBER D'ADAMO: Move adoption.

BOARD MEMBER SPERLING: Second

CHAIRPERSON NICHOLS: Any other comments that
anybody would care to add at this point?

I just want to thank you all. It has been a
terrific process. And I know that all of the proposals
that we have received have been in the direction of trying
to make this program more effective. There's never been
any question about it.

I do have one other thing I would like to
mention, because we've moved sort of beyond the clean fuel
outlet discussion very readily, because really nobody
seemed to have any proposals that they wanted to make,
which is fine. I'm completely in support of it.

But I just want to say for the record and before
we conclude this proceeding that I remain very hopeful
that this is an issue that we can resolve through
discussion with the industry and that we really want to
send the strongest possible message that we are open to
solutions that don't involve invoking the regulation but
would build on the good discussions that have already been
held about the memorandum of agreement.

We are not in a mode to try to force people to
build stations that they don't want to build. We know
there are businesses out there that do want to provide
clean fuels that the market is going to need and that just
need a little bit of financial help to make that happen.

We think that today's fuel suppliers have a role
to play, that they should play, that they should want to
play in bringing these other fuels in line. And that it's
particularly appropriate for companies that currently use
hydrogen and make hydrogen as part of their processes to
be involved in helping to bring the hydrogen to where the consumers are going to need it for the new fuel cell cars that are coming.

   So I think that ought to be clear, but I really am distressed that it seems to have been the case that, you know, there was felt to be a need to go out and tell small business owners that they were going to be facing requirements to put dangerous fuel on the properties and to spend money that they don't have in order to serve this new market when, in fact, the exact opposite is true, that we're actually opening up opportunities for small businesses here to be selling a product that they can't currently sell because it's not being made available to them.

   So I really hope that whoever is listening here will take this message in spirit that it's meant and respond in a positive fashion.

   And with that, I will call the question and ask everybody that's in favor of this package of advanced clean car amendments that we now have before us to say aye.

   (Ayes)

   CHAIRPERSON NICHOLS: It is unanimous.

   And I want to thank everybody who stuck with us to the end for this. And wish you all a great journey
We do have -- I'm sorry. I was handed a name of a person who wishes to address the Board during the public comment period. We do have a public comment period. It's required. And we should do this before we depart. So before we adjourn Harvey Eder is the only person who signed up for the public comment period. You have three minutes to address the Board.

MR. EDER: Good morning. My name is Harvey Eder. I'm with the Public Solar Power Coalition. And I want to talk to you about solar energy and solar conversion in general, but more specifically now about the low carbon fuel standard that was at the meeting last week, December 16th. I want to incorporate into the record everything from the low carbon fuel standard and participating in that, the biggest competition for solar is national gas. The price is down close to the lowest it's ever been.

And fracking for natural gas is going on now. And this was not looked at over the last several years in the Scoping Plan leading up to a November -- excuse me -- February '09 study done on LNG and CNG. There were omissions of the staff in three areas, in fracking the multiple use for natural gas and in methane emissions over the life of a vehicle. And in fracking, there was in
April -- last year in April from 2011 an article from Cornell which said that fracking could be worse than coal for greenhouse gas emissions. And this has been submitted to staff and it has not been dealt with before.

There was an article in Science Magazine that used the figure of 34 times versus the Board uses 25 times CO2 equivalent in looking at greenhouse gas emissions for natural gas for methane.

And methane emissions over the life of a vehicle, staff, Michael Benjamin and Cody Livingston, started talking with them over three years ago about this. And they supplied a series of studies about buses. And there was a study done in Washington, D.C. in December of '06, and it uses a comparison with diesel natural gas buses and uses figures of 10 and 17 grams of methane emission per mile. The study that was done in February of '09 by staff uses less than 400th of a gram. And it was brought to the staff's attention there was a discussion with John Cordis and some other folks. And it's just kind of up in the air what could happen with this.

CHAIRPERSON NICHOLS: You can finish your sentence

MR EDER: Pardon?

CHAIRPERSON NICHOLS: Finish your sentence. Your time is up, but you can finish.
MR. EDER: This should be dealt with. There's the possibility of litigation and maybe a compromise. I notice you said that to the oil companies yesterday. So might see what happens. Thank you.

CHAIRPERSON NICHOLS: Thank you. Thanks for your input. I don't think there's anything to add at this point.

So thank you, all. And you're all welcome to participate in this press call, if you want to.

(Whereupon the Air Resources Board adjourned at 11:26 a.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 31st day of January, 2012.

TIFFANY C. KRAFT, CSR, RPR
Certified Shorthand Reporter
License No. 12277