

Testimony
of the California Electric Transportation Coalition
Before the Staff Workshop
of the California Air Resources Board
on Possible Amendments to the Zero-Emission Vehicle Program
December 5-6, 2002

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1. Good morning. I'm David Modisette, Executive Director of the California Electric Transportation Coalition (CaETC). CaETC is a non-profit organization of companies working together to develop and commercialize electric transportation technologies. This includes work on light-duty vehicles, mass-transportation technologies such as electric and hybrid buses and light-rail, and off-road electric transportation technologies including airport ground-support equipment, electric forklifts, and other personnel and burden carriers.

2. CaETC generally agrees with the Objectives listed in the Background Information. In particular we want to emphasize our support for Objective #3, "The regulation should maintain pressure that will accelerate ZEV technology development", because this goal of the ZEV regulations has proven to be very effective and very successful over the past 12 years.

We also want to emphasize our support for Objectives 6 and 7: "The regulation should provide manufacturers the option to pursue their preferred path towards ZEV commercialization", and "The regulation should provide flexibility with respect to fuels, technologies, and compliance pathways."

3. But we also believe that there is an important objective missing from the list. It would read something like this: "The regulation should provide regulatory stability and consistency, such that private sector companies can make plans for compliance, raise capital, invest in manufacturing capability (or other compliance paths), and bring products to market secure in the knowledge that the regulatory requirements won't be dramatically changed every few years".

And while we agree that regulatory revisions are needed to address issues raised by the preliminary injunction, we believe that many of the changes proposed in the staff "strawman proposal" are both pre-mature and unnecessary, and would in fact do great damage to the technological progress that has been and is being made in ZEV technologies.

In addition, the proposed staff strawman represents a dramatic turn away from the regulatory direction established by the Board less than two years ago. Staff's "strawman proposal" would

literally "pull the rug" out from under private sector companies, and efforts by both the public and private sectors, to bring cost-effective ZEV products to market, and to encourage ZEV development and commercialization.

4. We don't believe the situation today is as dire or as desperate as the staff "strawman proposal" would lead one to believe. When you compare the numbers of "pure ZEVs required under the 2001 mandate" as described in the published ARB fact sheet (which is the so-called "red line") to the minimum number of ZEVs under the staff "strawman" proposal on page 10, you see that staff is really proposing a reduction in the number of pure ZEVs of more than 85 percent from 2003 through 2011. An 85 percent cut in the number of pure-ZEVs.

5. We don't understand why staff would propose such a drastic regulatory change. There have been no changes in the past two years that justify this regulatory "flip-flop". When we evaluate the ZEV situation today, we see only additional flexibility for automakers, and continued technological advancement.

First, automakers are not only complying with the ZEV regulations today, they are over complying. In fact, they developed ZEV compliance plans and implemented them well before the regulations have even taken effect. Most automakers have now generated several years worth of ZEV credits, which will carry them well into this decade. Please contrast this situation with the tone of the staff background materials that seems to imply that there is a near-term compliance problem that must be addressed right away, both by cutting the numbers of ZEVs that automakers must produce, and by allowing non-ZEV vehicles to count as ZEVs for the remainder of this decade. This is not the case; and this is not right.

Second, the ARB is giving automakers an additional two years of compliance "window" as a result of the re-adoption of the ZEV regulations. This is two years on top of the credits they have already generated, and the credits they will be able to generate in 2003 and 2004. This is much more time and flexibility for automakers than the ARB Board expected when they adopted the ZEV regulations in January of 2001.

Third, ZEV technologies are improving at a rapid pace; and at a pace not acknowledged by the staff background materials. Battery technologies, which are the common link with all ZEVs, are evidencing much greater cycle life, as shown by the real-world experience of SCE that now has several vehicles with their original nickel-metal hydride battery packs that have surpassed more than 100,000 ZEV miles. And this is with first-generation NiMH, not the new generation available today that is expected to have even greater cycle life and durability. This increased cycle life translates directly into lower life-cycle costs; costs that are significantly below that projected in the ARB staff reports of 2000 and 2001. And there are additional technological improvements and cost-reduction in electric-drive trains, lightweight materials, infrastructure, and use of the vehicles for grid-support, and the secondary use of batteries.

6. Instead of cutting the numbers of ZEVs, staff should be identifying technological pathways to make the ZEV program a success. They should be identifying "enabling technologies" that will provide volume production and cost reduction of ZEV components (including high-power batteries and electro-drive systems), in a way that has a "business case" for automakers.

One part of this pathway is already in place. Automakers have already embraced hybrid-electric drive systems. Some automakers have indicated that they plan to convert most of their models to hybrid drivetrains. In other words, there is a business-case for hybrid electric vehicles.

We believe that the ARB can and should build upon this success. They should advance this technology to the next level. That next level is the hybrid-electric vehicle that has a minimum pure ZEV range (of 20 miles in our opinion), and plugs into the grid using a standard 110 volt outlet, so that consumers can take advantage of the lower-cost and reduced emissions that grid-connection provides.

In the past 18 months, a research team comprised of automakers, utilities, environmentalists, academics, and others have documented and published the results of research and analysis on the benefits, costs, and market for plug-in hybrid electric vehicles. This new information, which was not available to CARB in 2001, demonstrates that Plug-in hybrid electric vehicles can achieve much greater societal benefits than the current non-plug hybrids that are on the market today. Plug-in hybrid electric vehicles can achieve:

- O 30-70% less NO_x and ROG than a non-plug hybrid.
- O 20-70% less CO₂ than a non-plug hybrid.
- O 40-80% less petroleum use than a non-plug hybrid.

These vehicles address automaker concerns about range and cost of battery electric vehicles.

This new information shows that there is a business-case for plug-in hybrid electric vehicles that produce significant ZEV range. Automakers can build upon their success with non-plug hybrids, to introduce plug-in vehicles in all vehicle sizes. These are mass-market vehicles, without niche-market limitations.

Plus, they provide a technological pathway forward to plug-in fuel-cell vehicles (and eventually non-plug-in fuel cell vehicles), and backward to pure-ZEV battery-electric vehicles. They provide the battery volumes we need to reduce battery cost, and they give consumers the experience they need to gain confidence in relying on a pure-battery electric vehicle.

There are no technological hurdles necessary to produce these vehicles. They can come to market in 3-5 years, or by the 2006-2007 model year.

7. We believe that CARB can and should incorporate the "ZEV enabling technology" of plug-in hybrid electric vehicles into the pure-ZEV (gold) category by allowing these vehicles to earn pure-ZEV credits in proportion to the pure-ZEV miles they generate. It's a simple and

straightforward concept: if you generate pure-ZEV miles, you get some pure-ZEV credit for that.

But the real benefit is that by incorporating the "ZEV enabling technology" of plug-in hybrids into the "gold" system you are contributing to the future success of pure-ZEV fuel cells and battery-electric vehicles.

By allowing plug-in HEVs to earn credits under the gold system automakers would have a broader choice of technologies for compliance under the gold standard. The two year delay and the current ZEV credit situation would provide ample time and "cushion" for automakers to adjust and select the technologies they prefer for compliance. Further, the relative amount of ZEV credits per vehicle could be adjusted to resolve concerns about cost-per-credit for each technology (advantaging one technology over another), and about total number of vehicles required under the regulation.

8. One possible criticism of allowing the ZEV range of plug-in HEVs to qualify for Gold credits may be that it might inadvertently inhibit or impede technological development of fuel cell vehicles by some automakers. We do not believe that this addition would affect the development of fuel cell vehicles, but to resolve these concerns we are willing to recommend an alternative which avoids this potential situation.

The alternative would be to add an optional compliance path to the choices available to automakers. Automakers could choose the compliance path available under the 2001 ZEV regulations, or an option which would provide for a "two-track" compliance pathway.

The first-track would be a "Fuel Cell Technology Development Track" which would satisfy 25 percent of their 2 percent pure-ZEV obligation. Total number of FCVs in this track would initially be low, with the purpose being to demonstrate and verify ongoing technological improvements and cost reduction. Automakers could comply with this track by producing FCVs, or purchasing FCVs credits from others. There would be no use of banked ZEV credits in this track.

For the remaining 75 percent of the 2 percent pure-ZEV obligation, a manufacturer would be allowed to use the full spectrum of ZEV vehicles eligible under the regulation today, including FCVs, full-function BEVs, city cars, station cars, shared-cars, even NEVs at the reduced credit levels in the current regulation, and banked ZEV credits, and we would further add plug-in hybrids with a minimum ZEV range of 20 miles.

Under this option, automakers have the full range of ZEV technologies to choose from. It doesn't "pull the rug" out from under companies that want to make battery-electric vehicles, or additional FCVs. And it adds an important new technology, plug-in hybrids, which may be the closest to a "business case" than most ZEV technologies available today.

9. We believe it is a serious mistake to allow the entire spectrum of AT-PZEV vehicles to be counted as meeting a manufacturer's ZEV obligation, as proposed in the staff strawman. These vehicles are not ZEVs, and most of them cannot be called "ZEV enabling technologies". Vehicles that can produce a minimum of 20 miles pure-ZEV range have technology that qualifies them to be "ZEV enabling technologies". And these are the technologies that staff should be encouraging under the pure-ZEV system.

AT-PZEVs are already required, in large numbers, under the existing regulations. Automakers have already embraced hybrid-electric vehicle technology, and some have announced ambitions plans to hybridize much of their product lines. The staff proposal will not further improve this technology or reduce its cost.

By allowing AT-PZEVs into the pure-ZEV category as the staff proposes we are again "pulling the rug" out from under companies that had planned to produce ZEVs. Further, these additional AT-PZEVs will not make an additional technological contribution to pure-ZEV technologies. California needs to keep in place the technological drivers that promote continued improvement and cost reduction in ZEV technologies. Plug-in hybrid vehicles, battery electric vehicles, and fuel cell vehicles provide these technological drivers.

10. We also want to comment on the proposed eligibility of hydrogen infrastructure for ZEV credits under the staff strawman. Staff needs to be very, very careful and cautious with this concept, because it can easily become a huge loophole that simply allows manufacturers or others to escape ZEV production of any type, at very low cost. We are very skeptical about extending ZEV credits for any infrastructure purposes, because we believe that infrastructure will naturally follow as the number of ZEV vehicles increases. Further, there is a real danger that if you provide credits for something that someone would do anyway then you haven't accomplished anything, except reducing the number of ZEVs produced. So if you are going to provide credits for ZEV infrastructure, it needs to be limited by the actual number of vehicles being brought to market. Automakers should not be allowed to "bank" infrastructure credits, without the vehicles to use them.

Lastly, although we are not a fan of providing ZEV credits for infrastructure, if staff is going to propose this it should be fuel-neutral, and not single out one ZEV fuel to receive credits to the exclusion of others.

11. We believe there are several "loopholes" in the existing ZEV regulations that should be closed or mitigated.

The first loophole involves the very large number of ZEV credits that most automakers have generated. As Mr. Taylor testified to, these credits coupled with the two-year delay in program implementation, mean that most automakers will not have to make another ZEV for the next 5 to 7 years! This is at odds with the stated position of the Board that there be no ZEV "blackout"; and that there should be ZEV vehicles made available in increasing numbers over time.

To solve this problem, this loophole, we recommend that there be a cap on the use of banked credits that would apply to all vehicle types. The first year cap would be very lenient, allowing 90 percent of a manufacturer's obligation to be met with banked credits, but would decrease over time. We recommend an 80 percent cap in 2006, 70 percent in 2007, 60% in 2008, and 50% in 2009 and thereafter.

12. The second loophole involves when a vehicle of a certain model year earns ZEV credits, in the situation where credit levels are decreasing over a period of years. We believe credits should be provided in the calendar year that the vehicle is "placed in service", and should not extend into the next calendar year. To do otherwise just exacerbates the credit glut.

13. The third loophole, or perhaps loophole solution is a better term, is to mitigate the glut of ZEV credits by temporarily increasing their value if they are used in the AT-PZEV or PZEV categories. Our thinking here is that because these other categories have higher numbers of vehicles, that the use of credits in these categories will not significantly impact production of these vehicles. We recommend that existing banked ZEV credits be multiplied by 1.5 if they are used in the AT-PZEV and PZEV categories in 2005 through 2007. To encourage the production of ZEVs in 2003 and 2004 we would also recommend that ZEVs placed into service in these years earn not only their expected credits under the pure-ZEV (or Gold) system, but also some additional credit under the AT-PZEV or PZEV systems.

14. The fourth loophole is how to prevent short-term "dumping" of ZEVs which are only on the road in California for a short period of time, as a way to generate ZEV credits. Or put another way, how can we encourage longer usage of ZEVs, such as longer leases, lease-to-own, or actual sale of the vehicle. Our "strawman" solution is to have a credit multiplier which would apply to all ZEVs, except those in approved demonstration projects. The multiplier would reward automakers that offer longer leases, lease-to-own leases, and selling the vehicles. The multiplier would penalize automakers that offer short-duration closed leases with no opportunity to extend the lease or purchase the vehicle. We would be pleased to work with you develop this further.

15. The fifth loophole, or loophole solution, is to examine whatever regulatory structure you plan to propose to the Board in terms of cost per credit. In other words, we urge you to examine your proposal in the same way that an automaker would: what is the least-cost compliance pathway? And evaluate whether that pathway results in the outcome you want.

16. Lastly, we would like to work with you on issues involving battery warranty and consumer protection issues to provide equity across all vehicles with batteries or other energy storage devices. We have some ideas that are not quite ready for public presentation today. But we want to continue to refine these, and discuss them with you for possible inclusion into the staff recommendation to the Board.

17. In conclusion, CalEVC believes that the current pure-ZEV (or Gold system) category should not be discarded - which is really what the staff proposal would do. The Gold system is not broken, but it can be improved to include "ZEV enabling technologies" which would earn pure-ZEV credits based upon the actual ZEV miles they generate.

The staff proposal would relegate commercial ZEV technologies to 2012 or later, while ignoring the opportunity of ZEV technology that is available in the near-term, building upon the success of hybrid vehicles to bring to market plug-in hybrids, that can provide benefits not thought possible even two years ago.

We urge you to update the pure-ZEV requirements, not abandon them. Take advantage of the technological improvements that have occurred over the past two years and incorporate them into the regulatory structure

There are two choices before you today. You can either take a step backward, and retreat from the ZEV requirements, by drastically cutting the number of ZEVs that will be produced for California, and instead allowing vehicles that do not produce ZEV miles to qualify as ZEVs.

Or you can take a step forward, and incorporate a new technology that will generate real-ZEV miles, and will give consumers the experience of plugging-in instead of going to the gas station. This ZEV technology overcomes the issues of limited range and high cost. It is a ZEV pathway that all Californians can take advantage of, and provides a "bridge" to future ZEV technologies including fuel cell vehicles and battery-electric vehicles.

Thank you for your kind attention.

I'm happy to answer any questions you might have.