



**TESTIMONY of Felix Kramer, CalCars Founder, to the September 23, 2004
California Air Resources Board Hearing on the Implementation of AB1493
and the Staff "Initial Statement of Reasons for Proposed Rulemaking"**

My name is Felix Kramer, and I'm the founder of the California Cars Initiative. CalCars is a nonprofit startup, formed by a group of entrepreneurs, engineers, environmentalists and consumers to bring to market the cars we need for the next ten years or more. We're focused on California, which can pioneer in the necessary market transformation.

I'll be brief. I support the proposed regulations and urge their adoption. Your staff has evaluated a number of excellent approaches that can reduce the greenhouse gas emissions of vehicles. Most of them are not controversial, have been proven to work, don't cost much to implement -- and aren't mutually exclusive. I hope you'll recommend incentives for a great package of interim steps.

But there's an elephant in the room, which keeps coming up, only to get put off as unrealistic. It's plug-in hybrids (PHEVs). The Board's staff report ably shows that PHEVs reduce carbon dioxide more than any other vehicle types except all-electrics. Fuel cell cars trail behind at about the same level as non-grid-chargeable hybrids. And last year's California Energy Commission report on reducing oil dependence (which of course tracks reducing CO2 closely) also put PHEVs right on top of the list.

On top of this documented advantage is the reality that from a technical standpoint, PHEVs could be on our roads in a year or two, as modifications of existing hybrid lines. They need no new technology, no new infrastructure -- and no promise that all will somehow fall into place in a decade or two. Proof of their feasibility? This week, CalCars is finishing building our first prototype conversion, which we call PRIUS+.

CalETC, Bluewater Network and others testifying today emphasize the importance of removing regulatory disincentives to PHEVs -- and the potential of positive incentives to speed their commercialization. I'm concerned that PHEVs may continue to be overlooked. My written testimony explores why and explains how that can be addressed. My three main points: 1. Over a car's lifetime, PHEVs save money. 2. If we can agree that they're a highly effective solution, we'll find ways to deal with the larger initial cost. 3. We can prove to automakers that people will buy these much better cars -- that's what CalCars is all about.

That concludes my verbal statement -- thank you for your attention.

Why are grid-connected vehicles all too often footnotes in lists of options, considered just an obscure hybrid variant? Perhaps in part because analysts cling to outdated assumptions about hybrid economics. Some people don't really believe Toyota can be making money on the Prius. Some journalists complain that the car should cost \$10,000 more. They're seeing how complex advanced electronics can cost less to build than simpler mechanical systems.

Another example: battery costs. When it turned out that the batteries in Southern California Edison's fleet of RAV4E's were still like new after more than twice their predicted 75,000 mile rating, the Electric Power Research Institute recalculated the numbers and proved PHEVs could have a lower lifetime cost than conventional cars or gas-electric hybrids. Sure, better batteries will help. They're improving faster than many realize -- but that's not necessary.

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Right now, PHEVs aren't taken seriously because they cost more, and because auto makers don't think there's a market for them. Some government officials and advocacy groups who'd normally take a more practical view seem to take their cue from the auto industry, which advocates placing our bets on fuel cell cars -- even as the questions and doubts increase.

As for higher initial costs, if we're serious about climate change, we'll see the opportunity for tax incentives, public and private funds to buy down a few thousand dollars per car -- as did the Green Carrot program that gave us efficient refrigerators. And CalCars is about proving that many people will step up and pay more for a much better car. You may be the kind of person who pays more for leather seats -- that's a *feature* you simply want. Who ever asks, "does it pay to buy" leather seats -- or "optional" automatic transmissions? Here's PHEVs' unique feature: the feeling every day that you're doing as much as possible to reduce the environmental impact of your driving. As a bonus, you get other features: a well-engineered conversation-starting car that's quiet, efficient, and spares you frequent trips to the pump.

As for industry skepticism, I hope that's starting to change. This week, DaimlerChrysler announced its first PHEV development program converting the Sprinter van. We believe the industry will notice when government and elected officials, think tanks, and policy analysts say, "we can have much better cars right now," and journalists write about PHEVs' great acceleration. Car makers will pay attention when community leaders and celebrities start driving PHEV conversions, and maybe when CalCars organizes Prius owners, starting with the 10,000 who talk online, to offer their dealers down payments if they can deliver PHEVs.

The general public and car-buyers don't even know PHEVs exist. We aim to change that. We're taking the very popular '04 Prius and green-tuning it into a vehicle with a significant all-electric capability at low speeds. Our first PRIUS+ prototype is primitive, using lead acid batteries to prove it works. Next month, we're starting on a nickel-metal hybrid and then a lithium-ion version with better performance -- though not as good as a Toyota-built PHEV.

CalCars isn't in the business of building cars. But we'll build a few, for people who want to be as green as possible and can afford to be pioneers. What's our goal? To get people talking about a proven, risk-free technology that exists now, and to fuel a groundswell of buyer interest that will persuade one or more automakers to build PHEVs.

Sunday I heard one of California's U.S. Representatives say that it already looks like in 50 years, the Sierra snowpack will be rain, so we'll have winter floods and summer droughts. That's just the impact in our state. Imagine how hard it will be to live in an overheated, stormy world. How much is it worth to us to take major steps to head that off?

Greenhouse gases from vehicles are only part of the problem. But transportation is one of the hardest nuts to crack. PHEVs can be one component of a sustainable package that includes:

- much cheaper thin-film solar photovoltaics on our rooftops
- somewhat better batteries than we have now
- an increasingly clean power grid charging batteries off-peak at night
- PHEVs with batteries as the primary fuel, plus gasoline, natural gas, biofuels, and perhaps some day hydrogen fuel cells, as range extenders.

Your decisions can help start the ball rolling here in California, with the states that follow ARB rules joining in, followed by other states and the rest of the world. Thank you!

Please see <http://www.calcars.org> and <http://www.priusplus.org> for more information
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