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Chairperson Mary Nichols and Board Members  
California Air Resources Board

**PLEASE DISTRIBUTE TO AIR RESOURCES BOARD (ARB) MEMBERS**

Dear Air Resources Board

These comments have been submitted on-line as part of the record for this meeting and for the current review of the ZEV mandate that has apparently been requested by the Auto Manufacturers' Alliance (AAM).

I'll allude to each point verbally and try to relate to the overall relaxation of standards you are being asked to consider today. If you accede to AAM requests to let them out of their prior fuel cell production commitments, it can never be undone; there will be only further requests later on.

Mercedes Benz testimony for this meeting is that they will produce 100,000 fuel cell ZEV by 2015; if so, there is no need to lower standards.

**Stand fast. No change is required; AAM can always return to proven, reliable battery EVs.** If the Board allows AAM to give up on fuel cells now, their commitment in the future will only get weaker.

AAM has always asked to be released from their obligations, and so far always won. This consistent record of regulatory failure must be halted if our greenhouse gas reduction targets are to be met.

The tailpipe of each Internal Combustion vehicle extends to the oil refinery needed to make their fuel, and beyond, to the electric wellhead pumps, oil tankers, oil drilling platforms, foreign oil diplomacy and wars.

Each ZEV has the dual benefit of reducing stationary and mobile source pollution, as well as the upstream costs of obtaining the oil.

Moreover, if battery plug-in ZEV are for sale on the free market, the avoided cost of gasoline can finance each driver's solar rooftop system, enabling them to drive clean while helping stabilize the electric usage curve.



## 1. 2003 OVER-RELIANCE ON FUEL CELLS WAS A MISTAKE p. 3

The 2000 Battery Assessment Workshop estimated the cost of the battery for an EV at no more than \$10,500. Compared to fuel cell vehicle cost of up to \$1 million, and the attendant cost of producing technical-grade hydrogen and specially-treated high-pressure tanks, that now seems a bargain.

AAM consistently ignored customer demand for battery EVs, and are continuing to do so, particularly considering the recent oil price increases. Loss of a proven technology was a mistake then and remains so now. **AAM must either produce the fuel cells it promised, according to the schedule they agreed to in 2003, or return to battery EV production.**

No questionable breakthrough research is needed for battery EVs. Highly reliable Toyota RAV4-EV, HondaEV and GM EV1 were, and are, proven and successful only because ARB once enforced the ZEV mandate under a strong Governor.



Giving up now would be a slippery slope of future surrender.

## 2. STAFF PROPOSAL WEAKENS ZEV MANDATE p. i

Staff was charged with not weakening the "overall objectives" of the (ZEV) program, which they are interpreting as retaining 2018 as the date that there will be a sudden return to ZEV production.

As this date approaches, the idea of a miraculous surge, a sudden conversion, becomes more and more unlikely. ARB has always acceded to AAM requests to

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rework ZEV; this proposal continues that tradition by lowering the number of ZEV to be produced. This idea must be rejected. **Hold AAM to the agreement made in 2003: produce either fuel cells or battery EVs.**

### **3. GRANT ZEV CREDIT ONLY FOR SALE, NOT LEASE p. 6**

There were 43,726 ZEV gold credits granted for only 4,560 ZEV vehicles, of which 4,400 were battery EV "placements". The vast majority of ZEV were Battery EVs. However, almost all of them were taken off the road and crushed. This gives the appearance of bad faith on the part of AAM (*other than Toyota, which did leave its RAV4-EV in the hands of the public and in fleets*).

There must be no ZEV credit granted for leases that allow this sort of intransigence in the future. There has been no valid explanation for why AAM insisted on removing these clean-air ZEV from the hands of the public, then destroying them, and no explanation for why GM and Honda could not follow the example of Toyota, selling them to willing buyers.

The crushing of almost all of the ZEV fleet reflects poorly on AAM as well as ARB.

The staff report needs to be corrected to the actual number of Battery EV on the road, not the sleight-of-hand number produced and then smelted for junk. Like the vehicles themselves, the credits should vanish and be disallowed.

**Credit must only be granted for vehicle sales, complete change of ownership to willing buyers, so that this sort of misleading accounting does not recur.**

### **4. STICK TO ORIGINAL (OR ALTERNATE) PATH**

AAM promised, in 2003, to produce requisite numbers of ZEV according to the relaxed schedule of requirements agreed to by CARB at that time. The Auto Alliance had, and has still, the option of continuing to produce proven BEV, or, as they claimed was the easier path, produce smaller numbers of fuel cell vehicles. There is no reason, particularly in view of the Mercedes Benz testimony about their planned production of fuel cells, to relax standards. **Let AAM stick to their original commitments.**

### **5. FUEL CELLS ARE THE DEAD END**

AAM and ARB staff argued in 2003 that Battery EVs were a dead-end, and that every dollar spent on BEV production took away from fuel cell research, which, they claimed, was the ultimate goal. Why pour money into short-term Battery EV production that, they declared, was a dead end?

AAM and ARB gave up on what was then a proven technology, with a fan club and thousands of BEV on the streets in the hands of loving drivers, for what now seems, according to the Expert Panel, to be an unrealistic assumption.

After 5 years of "Hydrogen Fuel Cell Research", fuel cell cars are farther away than ever, and new obstacles to them keep cropping up. Instead of admitting this fact, **AAM is requesting more time to continue on this same expensive, futile search for fuel cells.**

It may be that Fuel Cell research is the dead end, and the ultimate standard is Battery EVs. **Sticking to the agreement retains AAM chances to demonstrate fuel cells, but if they fail, they can go back to proven Battery EVs.**

#### **6. ZEV REGULATIONS NEED SIMPLIFICATION p. 15 et seq.**

The Board ordered staff to simplify the ZEV regulations; instead, the proposed changes make them *much more complicated*.

The original ZEV mandate was simple: each zero-emission car is counted as one ZEV, and only one. By complicating the idea, the Board risks obscurantism and loss of credibility.

**The Board must return with the people to the plain idea of "one vehicle, one ZEV", and reject the concepts such as EAER, UFrce, 4th order polynomial fits, and arcane grants of ZEV credit which have nothing to do with zero-pollution vehicles.**

The public can understand that the Board is under pressure from very powerful vested interests; if you have to surrender to them, at least admit it, and stop using problematic terms such as "partial zero emission."

**Make ZEV regulations simpler, you don't have to agree with the staff proposals to complicate and mystify them further.**

#### **7. Type F PHEV must do highway-speed in ZEV mode (p. 17)**

Staff is requesting what amounts to replacement gold ZEV credit for "advanced componentry allowance" on a new "type F" PHEV that goes through the UDDS FTP-72 test cycle for light vehicles partially on "ZEV fuel," even if the vehicle's engine starts at times. The maximum speed attained momentarily on this cycle is less than 60 mph, and most driving is stop-and-start at about 18 mph.

<http://www.dieselnet.com/standards/cycles/ftp72.html>

So the plug-in Prius and the GM dual-mode hybrid pickup truck would both get "ZEV credits" that displace real ZEV, even if the driver never plugs in the car at all, under the theory that it will "...encourage the deployment of higher battery capacity HEV drive systems...[so that] costs can be shared...".

Staff report, p. 17 states these use "10 kW" of power, instead of talking about how much all-electric range they have (kWh). The proposal creates a loophole ZEV credit for HEV that cannot run in normal driving without an Internal Combustion (IC) engine. The electric motor is envisaged only an IC assist.

This already assumes defeat of the ZEV mandate; such vehicles can never be zero emission ZEV, they will always require gasoline for the daily grind.

**NO gold ZEV credits, or replacement credits, should be granted for any vehicle that can't go at highway speed in all-electric mode.** Such a vehicle, whether blended mode or serial hybrid, is primarily an oil-fired vehicle, and should be restricted to Silver or Bronze credits at most. If the Board returns to the ZEV mandate, there will be genuine ZEV, and no need for the levels of credits and fine distinctions, complicated calculations, and hocus-pocus.

**A plug-in hybrid awarded ZEV credits must have a demonstrated range on ZEV fuel only of at least 40 miles at highway speed,** capable of being augmented with add-on battery packs for those wishing to convert them to longer-range BEV. Features such as the built-in routine to stop add-on battery packs on the Toyota Prius should be prohibited and penalized.

ARB must make explicit the difference between plug-in serial hybrids such as the proposed GM VOLT, which is just an EV with a genset, and the so-called plug-in blended hybrids, like the plug-in Prius and the GM "dual mode" hybrid pickup. The latter cannot go at highway speed in EV-only mode, so they are dependent on gasoline. The full-function serial hybrid can drive oil-free if you go less than 40-, or 80-, or 160- miles, depending on the size of the battery.

**Instead of weakening the ZEV mandate, the Board can strengthen it in the recommended ways in order to meet our AB32 and AB1493 goals.**



**Bring back the ZEV clean-air cars, and make this a common sight.**