

## **Comment 1 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: elan

Last Name: melamid

Email Address: elanmel@aol.com

Affiliation:

Subject: Needed: expanded support for CNG Vehicles

Comment:

California residents deserve the widest range of practical options to reduce their environmental footprint, including not only ZEVs but CNG-powered vehicles. ARB should pursue the following specific actions:

- 1) Continue and expand available supports for home-based CNG refueling machines.
- 2) Support expanded access to HOV lanes for CNG vehicles, including bi-fuel vehicles and larger, commercial vehicles (such as the widely available Ford F-250 pickup).
- 3) Expand the number of refueling stations across CA.
- 4) Reduce State taxes on CNG.

Thanks,  
Elan Melamid

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-04-23 20:31:57

No Duplicates.

## **Comment 2 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Stephen

Last Name: Pew

Email Address: paradigmshift@lovebeing.org

Affiliation:

Subject: Zero Emission Vehicle Program

Comment:

ARB was railroaded by the automobile corporations into dropping the Electric Vehicle program it had adopted. Evidence concerning the advancement of battery technology was ignored. Hype regarding unproven "fuel-cell" technology was blandly accepted. Promises from the automakers regarding advancement of ZEV technology was believed. It is now years later. Fuel cell technology is still extremely expensive, there is no infrastructure in place, the technology is years away from commercialization, it is four times less efficient than energy storage in NIMH batteries, and there are still thousands of ELECTRIC VEHICLES, built by kicking and screaming automakers, on the road today. Moreover, the consequences of global warming have become so apparent that even politicians have admitted it's real. When is ARB going to get real?

Stop playing around with the future of humanity, with the future of our planet! The evidence that EV technology can meet 90% of driving needs in California is overwhelming. The infrastructure is already in place (the electric grid). All it will take is political WILL. Do you have any?

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-04-23 21:44:04

No Duplicates.

### **Comment 3 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Anthony  
Last Name: Cimino  
Email Address: anthony@cimino.us  
Affiliation:

Subject: HELP US ALL  
Comment:

CALIFORNIA,

You did it once, please do it again! You know NiMH batteries WORK  
(RAV4 EVs have almost 100,000 miles on them!)

You know Internal Combustion engines are hurting children's lungs!  
ALL OUR CHILDREN!

PLEASE adopt a STRICT ZEV mandate like you had!

MAKE THEM GIVE US THESE CARS

WE WILL BUY THEM

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-04-24 15:34:17

No Duplicates.

## **Comment 4 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Daryl

Last Name: Zapata

Email Address: Non-web submitted comment

Affiliation:

Subject: Form Letter #1

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/4-zev2007-4.pdf'

Original File Name: zev2007-4.pdf

Date and Time Comment Was Submitted: 2007-04-30 11:01:04

83 Duplicates.

## **Comment 5 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Susan

Last Name: Blanchard

Email Address: Non-web submitted comment

Affiliation:

Subject: Form Letter #2

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/5-zev2007-5.pdf'

Original File Name: zev2007-5.pdf

Date and Time Comment Was Submitted: 2007-04-30 11:21:16

646 Duplicates.

## **Comment 6 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Linda

Last Name: Nicholes

Email Address: LindaGraff@roadrunner.com

Affiliation:

Subject: ZEV Technology Review

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/6-zev2007-6.pdf'

Original File Name: zev2007-6.pdf

Date and Time Comment Was Submitted: 2007-05-01 14:12:44

No Duplicates.

## **Comment 7 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Legislature

Last Name: California

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/7-zev2007-7.pdf'

Original File Name: zev2007-7.pdf

Date and Time Comment Was Submitted: 2007-05-01 14:18:44

No Duplicates.

## **Comment 8 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Gordon

Last Name: Green

Email Address: ggreensprint1@earthlink.net

Affiliation:

Subject: ZEV Status Report Comments

Comment:

On May 24, 2007 is a meeting of the California Air Resources Board to consider the Status Report on the zero emission vehicle program.

Attached is a letter in Word format that comments on the ZEV report that will be discussed during this Air Resources Board meeting.

Attachment: 'www.arb.ca.gov/lists/zev2007/8-arb\_letter.doc'

Original File Name: ARB Letter.doc

Date and Time Comment Was Submitted: 2007-05-05 17:26:53

No Duplicates.



## **Comment 9 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: George

Last Name: Rasko

Email Address: jurgis\_sj@yahoo.com

Affiliation: Electrical Engineer

Subject: Don't Pick Favorites

Comment:

Dear Board Memebers,

I am distress to read about some of the biases built into your reports and actions. Specifically:

1. including refueling time as an criteria means that you have already chosen liquid fuels as the answer, no matter what the question is.
2. your comments about battery electric vehicles are based on your (wrong) personal assessments of the marketplace, rather than reality.
3. The hybrid is getting all the perks right now, blocking many future incentives

My requests for your consideration against the above are:

1. if refueling time is to be a criteria, then equal weight needs to be given to fueling infrastructure. Example: hydrogen may be able to put energy into a vehicle quickly, but there is no hydrogen distribution system presently in California or the country. Electricity is literally everywhere right now.
2. the backlog of orders for Tesla Motors new car obviates the "customer acceptance" comments of your report section 3.2. Fundamentally, the customer has not been given a chance to own and operate an electric car. The "customer" can only accept what the marketplace offers. Previous "lease only, and then we take it back" products can't be taken seriously.
3. Allowing hybrids special access to carpool lanes has already filled them up in some places like Virginia. How can you offer an incentive like that to ZEV owner, when the incentive will be worthless because the HOV lanes will be in "hybrid gridlock"?

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-11 16:44:50

No Duplicates.

## **Comment 10 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Thomas  
Last Name: Brandt  
Email Address: thomas@suncartech.org  
Affiliation:

Subject: True ZEV  
Comment:

SUNCAR Technology Corporation  
Avila Beach, Ca 93424-0043  
suncartech.org  
805 350 3230

May 12, 2007

Clerk of the Board  
Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Electronic submittal to:  
<http://www.arb.ca.gov/lispub/comm/bclist.php>

This communication is being submitted as written comments for the California Air Resources Board consideration at the May 24-25, 2007 ARB Meeting in San Diego. We have reviewed the ZEV Technology Review report dated April 20, 2007. Our comments are for further possible action by the ARB. Please consider the following: Petroleum-based fuels and energy have been the main source for powering vehicles over the past century. A major alternative source of available energy is the abundant sunlight in California.

We would like to see additional efforts by ARB directed to long-term truly clean electric Zero Emission Vehicles (ZEVs) development that maximizes use of this solar energy. It is reasonable to use as much of California's abundant sunshine as can be made practical to help power personal transportation. One method of advancing near and long-term zero emission vehicle technologies would be to push the pioneers (large and small) to further develop true zero emission vehicles by using photovoltaic solar energy conversion for assisting plug-in battery powered electric ZEVs.

The immediate effect would be that this helps extend the daily driving range of a battery powered electric ZEV used for commuting and other purposes. For example, a fully charged ZEV leaving home in the morning can be parked in the sunlight where, using photovoltaic cells, it could continue to actively charge the battery pack all day long while the sunlight is available up to the point of departure for the return trip in the evening. Recent technology advancements in new generation thin film photovoltaic solar cells make this scenario much more practical from a cost and suitability standpoint than it was just a few years ago. There is already at least one company successfully producing and supplying these advanced photovoltaic cells in

volume. More companies are establishing large scale manufacturing facilities in California to produce advanced thin film photovoltaic solar cells. These thin film cells are lightweight but flexible and the costs are significantly less than older generation silicon solar cells.

Successful deployment of photovoltaic solar assisted plug-in battery electric ZEVs will help supplant vehicles having tailpipe emissions of greenhouse gasses. Analysis of daily driving habits, especially local trips and short commutes shows that much more of what is done presently with full size, full performance highway vehicles could be done using properly configured photovoltaic solar assisted battery powered ZEVs targeted for local use. In some instances these can be entirely sun-powered and a true ZEV when the daily routine is for short distances.

A shift in public response might be possible for use of these as second or even third family vehicles instead of conventional petroleum powered vehicles. Certainly the public has responded to the AT PZEV type of vehicle (such as the PRIUS) in ways more favorable than expected by many in the automobile industry. ARB regulations and programs helped this rapid transition.

Good targeting of future regulations and development programs might help accelerate the solar photovoltaic electric ZEV as well. Defining this photovoltaic enhancement as a premium alternative course for large manufacturers might also help progress. There is little doubt that over the long term the battery powered ZEVs will become more successful as battery technologies and costs improve. Advanced, lightweight materials incorporated into new vehicle designs will also contribute to progress.

What we are advocating here goes beyond that - toward the ultimate ZEV.

Another point to consider is that even a current design plug-in battery electric ZEV generally uses the electrical grid as it's only power source and consequently is depending on power plants. Many power plants are themselves sources of greenhouse gasses (GHG) due to the petroleum or coal fuel they consume. Any progress that can be made to supplant that grid supplied power with photovoltaic solar supplied power is a positive step in reduction of emissions. Photovoltaic enhancement of AT PZEVs and ZEVs could help reduce gasoline use and grid supplied electrical power and there is no special infrastructure required since the photovoltaic cells are mounted on the vehicle. Eventually having millions of vehicles utilizing several kilowatt-hours per day or more of free and totally clean power from the sun can begin to make a difference. And much more might be possible.

Our view is that photovoltaic enhanced ZEVs could become a very important step in the right direction because the GHG situation would be improved and the direct economic costs could become very favorable over the long term compared to gasoline powered vehicles.

We believe that these photovoltaic enhanced electric ZEVs will become an important part of overall personal transportation solutions in the future.

Our simple request is that the ARB evaluate this potential and begin to promote it as part of future and even near term actions and programs so that we get to true ZEV use as early as possible.

We look forward to your consideration of these matters.

Sincerely,

Thomas Brandt  
Thomas Brandt

Chairman & CEO  
Suncar Technology Corporation

Attachment: 'www.arb.ca.gov/lists/zev2007/22-arb\_may\_2007\_a.doc'

Original File Name: ARB May 2007 a.doc

Date and Time Comment Was Submitted: 2007-05-12 09:53:23

No Duplicates.

## **Comment 11 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Darell

Last Name: Dickey

Email Address: darell@evnut.com

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/35-zev2007-11.pdf'

Original File Name: zev2007-11.pdf

Date and Time Comment Was Submitted: 2007-05-14 15:21:44

No Duplicates.

## **Comment 12 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Jeff

Last Name: U'Ren

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/36-zev2007-12.pdf'

Original File Name: zev2007-12.pdf

Date and Time Comment Was Submitted: 2007-05-18 12:46:09

No Duplicates.

## **Comment 13 for ZEV Program Status Report (zev2007) - 45 Day.**

First Name: Lynda

Last Name: Pash

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/37-zev2007-13.pdf'

Original File Name: zev2007-13.pdf

Date and Time Comment Was Submitted: 2007-05-18 12:46:47

No Duplicates.



## **Comment 14 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Torbjorn  
Last Name: Hemmingsen  
Email Address: torbjornhem@bredband.net  
Affiliation:

Subject: Question regarding sustainability in the fuelcell?  
Comment:

Dear members of this public meeting!

Why is there only a 3 years capacity/lifelength in the fuelcell?  
Are there corrosionproblems with the membrane or the flow field  
plates?

Yours sincerely  
Torbjorn Hemmingsen

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-20 03:40:33

No Duplicates.

## **Comment 15 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Torbjorn  
Last Name: Hemmingsen  
Email Address: torbjornhem@bredband.net  
Affiliation:

Subject: Outlook for flow field plates and membranes?  
Comment:

God morning, dear members of this hearing!

How's the status and report on the durability/lifelength on fuelcellstacks, flow field plates and membranes?

Have you taken contact and done research on the company Cell Impact, who massproduces flow field plates at a low cost?  
[http://www.fuelcellmarkets.com/cell\\_impact/1,1,13659.html](http://www.fuelcellmarkets.com/cell_impact/1,1,13659.html)

Yours sincerely  
Torbjorn Hemmingsen

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-21 01:59:38

No Duplicates.

## **Comment 16 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Ian

Last Name: Clifford

Email Address: Ian.Clifford@ZENNCars.com

Affiliation: ZENN Motor Company

Subject: Enhancing the Zero Emission Vehicle Program

Comment:

Clerk of the Board  
California Air Resources Board  
1001 I Street, 23rd Floor  
Sacramento, CA 95814

Re: Agenda Item 7-5-5, May 24, 2007  
PUBLIC MEETING TO CONSIDER A STATUS REPORT  
ON THE ZERO EMISSION VEHICLE (ZEV) PROGRAM

Board Members:

ZENN Motor Company would like to add its support to the staff recommendations "to adjust the credit value appropriately to reflect the value of NEVs for emission reduction". We believe that this more equitable treatment of technologies is in the best interest of consumers, and indeed in the best interest of the global environment. As the Expert Panel found (Staff Report, p 9), NEVs are helpful in that they:

- reduce harmful emissions
- reduce greenhouse gas buildup
- help with energy independence issues
- are commercially viable

The Panel was asked to examine "the prospects for technology advancement in both the near- and long-term" and "to project mass marketability of vehicles using these technologies".

The panel rightly recognizes that the NEV offers a true zero-emission solution to climate and air quality issues. However, many of the obstacles to greater use of the NEV have been, and continue to be social, not technological.

- It has taken 10 years to gain access through legislation to public roads. A few states still resist (46 of the 50 States allow NEVs)

- municipal ordinances are a pre-condition of legal operation and this continues to be a significant obstacle and source of confusion

- the existing patchwork of municipal by-laws is widely variable, too scattered, and sometimes overly restrictive

Because of these factors, we applaud the proposed initiatives of the Board to educate, inform and motivate the public to consider new alternatives that challenge common assumptions about urban transportation. (As outlined in California Consumer and Fleet Manager Reactions

To Clean Vehicle Technologies, p 3)

According to the Panel and Staff Report, the issues with NEVs are thought to be:

"Market potential for the technology is relatively small due to limited applicability" (Staff Report, p 9)

- The cliché image of the NEV is that it is driven by a senior citizen in a gated community. Our real world experience does not support this misconception. Hundreds of average Americans from all parts of the United States contact ZENN every month. They tell us that they would like to drive the ZENN in their public urban environment, not a restricted private road network. A significant proportion would like to use a NEV for business purposes.

- Most American households today have more than one vehicle. In fact, 41% have two and 47% have three or more. From our perspective, replacing just one of those secondary ICE vehicles with a NEV would have a substantial positive impact on air quality and climate change. This is an enormous market and remedial opportunity but without leadership it is more likely to be induced by a relentless increase in oil prices.

- It's not inconceivable that the NEV may have "limited applicability" in an environment designed for sprawl and habitual commuting. However, the fastest growing trend in urban planning is the New Urbanism movement which promotes compact urban design and mixed use of space. The NEV is a natural complement which shares many of the same ideals about sustainable communities. As more New Urbanist communities are developed, the market for NEVs is likely to expand accordingly.

"performance limitations"

The common misconception is that the public will not accept alternative forms of transportation that diverge from the existing 'norm' of high speed and long range. Yet consider the current experience with some 'low speed' forms of transportation:

- Neighborhood Electric Vehicles evolved from the public acceptance of golf carts which established a market beyond the golf course despite a deficiency in speed, comfort and safety.

- US sales of electric bicycles, for instance, are projected to double to about 200,000 units by 2009 regardless of limited speed and range, and lack of comfort or safety features.

- The very low average speeds in cities and neighborhoods throughout the USA must also be considered.

The panel concluded that NEVs "provide no significant benefits to future mass market ZEVs due to simple technology...". This bias toward finding a more exotic and undoubtedly expensive new technology for future mass commercialization does not fit with the market experience to date. The Board should continue to support successful ventures which use currently available technology while encouraging the introduction of newer innovations. This is the path that the ZENN Motor Company currently follows:

- ZENN has developed a quality product for personal mobility which is an environmentally responsible choice, technologically feasible, economically viable and appealing to consumers. ZENN will continue to fill the demand in the NEV market which we perceive to be a permanent and expanding market niche.

- At the same time, ZENN has invested in, and holds rights to, a potentially 'game-changing' energy storage technology (EESor Inc. based in Austin Texas) so that we are positioned to be a leader in zero emission transportation if and when the new technology becomes commercially available early in 2008.

Let me close by emphasizing that the Panel's conclusions tend to distort the potential of Neighborhood Electric Vehicles by:

- greatly underestimating their market potential
- exaggerating the role of 'performance' in consumer choice

As I have described above, the significant obstacles which prevent the wider use of NEVs are primarily administrative barriers built around old attitudes and perceptions. The public has indicated to us that it is ready and eager to adopt new behaviors that have a visible impact on the challenges of air quality, climate change and oil dependence. I encourage the Board to pursue those policies that will accelerate the current trend toward responsible social change.

Ian Clifford  
Chief Executive Officer  
ZENN Motor Company

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-22 10:12:29

No Duplicates.

## **Comment 17 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Claudine

Last Name: Jones

Email Address: claudine@energy-solution.com

Affiliation:

Subject: BEV Consideration

Comment:

Dear Sir/Madam,

I am a long time driver of all electric vehicles and would like to chime in with a strong vote in favor of the continued support and encouragement for the use of such emission free vehicles. I provide power for my car via the use of a Photovoltaic system and I also make use of the existing system of inductive chargers in California.

If I can do it for eight years and find it not only suitable for my needs, but actually pleasant to drive and maintain, then I see no reason not to continue.

Thank you,

Claudine Jones

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-22 11:36:37

No Duplicates.

## **Comment 18 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Robert  
Last Name: Seldon  
Email Address: seldon@speakeasy.net  
Affiliation:

Subject: ZEV Mandate  
Comment:

Please do not modify the Phase II part of the current ZEV mandate except to force EVs and plug-in hybrids into the market sooner rather than later.

The auto industry is stalling while other companies are bringing out EVs and plug-in hybrids. Be the pioneers you once were!

Other states are following California's lead. Do the right thing.

Thank you.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-22 11:47:02

No Duplicates.

## **Comment 19 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: David

Last Name: Modisette

Email Address: Non-web submitted comment

Affiliation: CA Transportation Coalition

Subject: Status Report on ARB's Zero Emission Vehicle Program

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/43-zev2007-19.pdf'

Original File Name: zev2007-19.pdf

Date and Time Comment Was Submitted: 2007-05-22 14:26:01

No Duplicates.



## **Comment 20 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Ian

Last Name: Cree

Email Address: ianccree@hotmail.com

Affiliation:

Subject: Global warming/air pollution

Comment:

### **AIR RESOURCES BOARD**

Ethanol hybrid usage is marginally better than oil, and threatens world food supply. The alternative: No greenhouse gases electric cars are still largely being ignored. Why?

Electric cars have been manufactured for many years, but have not caught on, almost certainly because early models were not very powerful and not very efficient. Yet there was little research being done on them and global warming was only grudgingly being accepted by a few. The all powerful oil lobby and a highly blinkered president chose to ignore, or rather blanketed the reality with a combined fog and smoke screen to protect their obscene profits.

Now all that has changed, - not the smoke screen, but electric cars.

Tesla has demonstrated the superiority of electric cars over gas and diesel vehicles, not only in eliminating greenhouse gases and air pollution, but in efficiency and safety: Their highly efficient batteries can hold their charge for up to 250 miles before requiring recharging. They can be recharged via an ordinary electric outlet in 3 1/4 hours, and they can accelerate to 60 m.p.h. in about 4 minutes. They are equipped with controls which ensure that all 4 wheels individually hug the road and have exceptional stability even on ice. They have roll bars designed to protect their passengers. Of course, there is zero danger of fuel leaks, fire and explosion on impact - therefore no danger of being incinerated!

What is the disadvantage?: Cost. The Tesla costs about \$92,000. This, however, is offset by the cost of electric power - estimated at 1 cent per mile. (\$100 per 10,000 miles). Therefore, if a new car is not purchased for 15 years, and the car is driven at a rate of 10,000 miles per year, the cost of electricity used in that period would be: \$1500. Gasoline at \$3 per gallon in a vehicle using a gallon per 13 miles would be \$34,615. [Data from Tesla advertisement, calculations are mine]

Subtracting \$1500 would leave a difference of \$33,115. Taking this from the sale price would leave an effective cost of \$58,885. (Greater usage would expand the difference and further reduce the effective cost).

Since the Tesla is an original model, and it is likely that other companies will get into the act, inevitably reducing the cost, and

further research is also likely to increase efficiency, the effective cost would probably equal that of current automobiles or even less, in the near future. This would eliminate the need to use corn or other biologicals for vehicular power.

While wind and solar farms can be expanded exponentially, there is little mention of tidal power. Research into this resource seems to be lacking at this time. With the enormous power of tides on the Atlantic and Pacific seaboards, there should be enough non-polluting power for generations to come! It is time for the Sleeping Giant to awake!

While I have discussed the question of global warming and environmental pollution in economic terms, there other benefits over and above climate change in terms of human health, fresh air, and economic savings which would amount to many billions of dollars in terms of reduced need for medication, medical care, hospital care, hours of work lost due to respiratory problems, and perhaps reduced human and vehicular damage from accidents.

I would value your thoughts on the above - (Not as an electronic automated reply).

Sincerely,

Ian Campbell Cree, MB(Hons.), MS, FRCS(Eng. & C.), FACS, LRCP

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-22 14:52:43

No Duplicates.

## **Comment 21 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Doug

Last Name: Metcalf

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: 'www.arb.ca.gov/lists/zev2007/45-zev2007-21.pdf'

Original File Name: zev2007-21.pdf

Date and Time Comment Was Submitted: 2007-05-22 15:14:38

No Duplicates.

## **Comment 22 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Mark

Last Name: Looper

Email Address: looper@spamcop.net

Affiliation: private alternative-fuel vehicle owner

Subject: Expert panel report too optimistic about FCVs, pessimistic about FPBEVs

Comment:

Thank you for the opportunity to submit comments about the ZEV independent panel report. I write as a long-time user and advocate of alternative fuels; I have owned natural-gas vehicles since 1993, and in 1998 I drove my CNG Dodge van from Los Angeles to Maine and back to draw attention to the viability of fuels besides gasoline and petrodiesel. Since 1998 I have maintained a website on the topic, now at [www.altfuels.org](http://www.altfuels.org).

After reading the panel's report, I am concerned that they reached conclusions about the relative viability of full-performance battery EVs and fuel-cell vehicles that are driven more by the automakers' priorities than by the inherent merits of the technologies. Specifically, the panel notes that no substantial improvement in hydrogen storage will be possible without breakthroughs in technologies that are not out of the lab yet; they also note that the fuel cell stack itself must improve in many different directions (higher power density, greater durability, lower cost) that conflict with one another, so that the simultaneous solution of all the problems will again require technological breakthroughs. As far as I could tell, though, their status projection amounts to saying that "with all the effort being expended on these tasks, success seems likely," and their timeline for scale-up of manufacturing amounts to saying that "once these problems are solved, commercialization will occur quickly."

By contrast, their conclusions about FPBEVs start from the automakers' assertion that these are too limited to progress beyond niche-vehicle status, and they proceed from this to note that there has not been much improvement in batteries suitable for FPBEVs because of lack of automaker interest, nor is likely to be. I am, of course, aware that the panel's charter was by necessity circumscribed, and they were charged with evaluating the status of technologies as they found them; however, they were also charged to make projections for scale-up of manufacturing, and this involves assumptions about what will be as well as observations of what is. In this case, it seems that the panel accepted at face value the automakers' denigration of FPBEVs.

A year after "Who Killed the Electric Car?", the Air Resources Board has an opportunity to revisit this question. As a pre-emptive strike against negative publicity from that film, GM bought full-page newspaper ads and Google AdWords to drive traffic to a blog posting defending their actions with regard to the EV1; I posted a page at <http://www.altfuels.org/misc/onlygm.html> with a detailed, point-by-point rebuttal of GM's spin. Other automakers

are equally guilty of misrepresenting both their level of effort to "sell" (in most cases, of course, actually only lease) FPBEVs several years ago and also the level of consumer interest in the vehicles. Ed Begley, Jr., famously said that FPBEVs were so limited that they could serve the needs of "only" 90% of the population; the true potential market is likely smaller than that, of course, but certainly it should include a large fraction of two-car households. What needed, and needs, to be done is (1) to make the vehicles actually available and (2) to base a sales pitch on the advantages of the vehicles, namely that even without exotic batteries they have enough range for the vast majority of daily driving on an overnight charge that leaves you with a full "tank" of cheap fuel every morning, and they free you from smog checks, tuneups, and rush-hour gas lines, and on top of that you have all of your torque available off the line. Automakers failed to do either (1) or (2).

The panel concluded, without having any specific reasons that I could divine from their report, that the huge obstacles to commercializing fuel-cell vehicles will be overcome simply because automakers and component suppliers are putting so much effort into the task. But surely it's a lot easier to change customer preferences with public education, i.e., advertising, than it is to fight the laws of physics! The automakers claim they tried but failed to commercialize FPBEVs several years ago; if, like many observers, the Board sees through this claim, then surely it seems reasonable that you should require them to divert some of the resources being (in the view of many) squandered on fuel cells to make another, honest try at tasks (1) and (2), with tighter supervision this time to keep them from "faking it" (by making the vehicles nearly impossible to get, by running minimal and not very persuasive ads, etc.). In the MOA period, automakers promised to produce enough FPBEVs to "meet demand," which gave them an incentive to claim there wasn't any demand to meet; then a few years ago, they promised to ramp up FCV production starting at the end of this decade, if only they would be let out of making battery EVs. Now I understand that automakers want the FCV introduction timing stretched by another decade. "Fool me once, shame on you; fool me twice, shame on me," but there isn't a proverb to cover allowing oneself to be fooled three times in a row! I urge the Board to hold the line on the present ZEV regulations, and if automakers can't keep their fuel-cell promises, then let them be forced to make an honest effort this time to build and sell plug-in vehicles.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-22 23:39:39

No Duplicates.

## **Comment 23 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Marcos

Last Name: Peixoto

Email Address: marcos\_peixoto1@yahoo.com

Affiliation: none

Subject: Please reconsider Pure Battery Electric Vehicles

Comment:

Hello CARB,

I am a concerned citizen that have been driving a pure electric vehicle for a while. A Toyota RAV4 EV to be more specific. I commute about 22 miles each way and I charge my car at my workplace every other day. My friends and co-workers never seen or heard about cars like mine - some are actually very interested in getting one. There's just none to buy. My car is ready for volume production. This car have never had any issues in 4 years of continuous operation. Almost 60K miles in my odometer and no maintenance required other than changing two complete sets of tires and adding washer fluid to my reservoir. I had severe concerns when I read your report. There are a number of references about battery technology not being ready. I dispute that. Ready for what? These batteries are perfect today and would answer the needs of over 90% of commuters. NimH technology is actually safer than Li-Ion and provides good enough power. It's a shame - let me repeat S H A M E that CARB's ZEV mandate was overturned in 2003. I just imagine what a 2008 RAV4 EV would be like? Please - be bold and start changing the world - starting from here - California. Forget Hybrids and Fuel Cell cars - just bring back something that works perfectly today - The Battery Electric Vehicle.

Sincerely,

Marcos Peixoto

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 01:12:39

No Duplicates.

## **Comment 24 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Jerry

Last Name: Pohorsky

Email Address: Pohorsky@comcast.net

Affiliation: Electric Auto Association

Subject: Stop Driving with your Brakes on

Comment:

The original ZEV mandate required 10% of all new cars sold in California to be ZEVs. Over the years many concessions have been made and a precious handful of BEVs were made available to the public such as the RAV 4 EV that I now own and drive. I have over 60 K miles on it and drive it over 1,000 miles per month.

Thanks to the hard work of fellow EAA members, Toyota was persuaded to stop crushing these cars and allow them to remain in service. I used to have an EV1 but GM did not behave the same way as Toyota. Now GM is making noises about the Chevy Volt - probably because they realize that they can't pull off the fuel cell promise they made and will need something else electric to meet your requirements sooner or later.

If you had merely left the regulation alone we would have thousands of battery electric cars on the road by now instead of just a few hundred. Instead we have all these layers of nonsense like PZEV and FCVs that nobody can afford to build, buy, or fill with fuel.

Several times each week I am asked by someone how they can get an electric car like mine and I have to tell them that thanks to CARB, you can't. Nobody ever asks me how they can get a fuel cell car.

Please streamline the ZEV mandate and make it simple again. Otherwise you will reap the harvest of unintended consequences like you have in the past. Do you want more lawsuits from the automakers? Cars like mine prove that we already had the technology needed 5 or 10 years ago.

Battery improvements are nice but the Panasonic EV-95 was good enough already. Ask Chevron why we can't get those batteries anymore. Maybe their record profits have something to do with it.

It is time you are accountable to the people who breathe the air in California instead of the ones with the deep pockets and expensive lobbyists.

All I ask is that you go back to the original 10% requirement and let the automakers figure out how to get there. It would not surprise me if there were lots of Battery Electric Cars in dealer showrooms as a result. All of these other modifications to the mandate have resulted in fewer ZEVs, not more.

Adios,

Jerry Pohorsky  
Electric Auto Association - Silicon Valley Chapter President

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 07:32:38

No Duplicates.



## **Comment 25 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Paul

Last Name: Scott

Email Address: paul@pluginamerica.com

Affiliation: Plug In America

Subject: Consumer Acceptance of Battery EVs

Comment:

See attached file.

Attachment: 'www.arb.ca.gov/lists/zev2007/49-carb\_testimony1.doc'

Original File Name: CARB Testimony1.doc

Date and Time Comment Was Submitted: 2007-05-23 07:49:48

No Duplicates.

## **Comment 26 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Scott

Last Name: Rodamaker

Email Address: scott@mcrfea.com

Affiliation:

Subject: Future Electric Car owner

Comment:

CARB Panel,

Thank you for your time and I pray you take my advice under consideration. California must lead the way, historically this has been true and I suspect will continue. Why are hybrids all the rage, I own one myself as do many of my neighbors and friends but we continue to have no options to buy a full electric which I would buy in a heartbeat. In reality I have a savings account especially setup for purchase of the 2nd generation Tesla 4-door, which is still a few years out. Hybrids are good for two reasons: first the regeneration capability obviously recaptures otherwise lost energy and secondly the electric/battery drivetrain is amazingly efficient especially compared to an internal combustion engine.

By now most people understand hydrogen vehicles are a sham and without significant technological advances will not be ready for the next decade for the public. I thank you but need to remind you electric vehicles were ready for mass production a decade ago, no not a 100% solution for every person but a damn good one for a lot of commuters or housewives rushing out to school, the grocery store, etc. Tomorrow GM could license the Tesla battery pack and reproduce the EV1 (probably EV2) producing easily a 200 miles plus vehicle at likely \$50,000-\$60,000 without any State or Federal incentives, clean air credits, etc. Make the ZEV mandate a reality again, we must push for better vehicles, higher fuel efficiency, to improve our air and health, and do our part for the planet and children.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 08:55:16

No Duplicates.

## **Comment 27 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Kevin

Last Name: Taylor

Email Address: kevin\_roger\_taylor@yahoo.com

Affiliation: EVA

Subject: BEVs

Comment:

I attended a ZEV meeting in Sacramento after driving my family from San Diego in a Honda EV Plus. I asked for another BEV option after my lease extensions ended, specifically a RAV4-EV. I eventually was able to purchase a RAV4-EV at great expense. My RAV4-EV was sold last week, because of not only the expense, but that published intentions of new BEV production have devalued the RAV4-EVs. Also, support for the BEVs is almost non-existent. This all combines to an ever increasing expense to own and operate such vehicles. A great part of this is the entrenched oil and 'convenience over health' paradigm alienating BEV activists. I plead to you to balance the playing field to make BEV's easier to experience so more people can participate in cleaning the air, etc. Fuel cells are more expensive. Shift your emphasis toward the short term and BEVs.

In addition I find bicycle commuting far more helpful in minimizing pollution, and increasing the health of all, but again, the difficulty from fighting the perceived convenience of the automobile is greatly offsetting. Please help minimize these hurtles, such as car exhaust, noise, waste heat, and oil leaks while riding on the roads. Also, the degradation of the quality of life from the full well-to-wheels-to-grave life cycle! BEVs do this now, not future fuel cell vehicles which use much more electricity to operate (more money & pollution), and don't have an advantage as being the only Type III ZEV, since a properly engineered BEV meets the Type III ZEV qualifications.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 09:04:06

No Duplicates.

## **Comment 28 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Muriel

Last Name: Strand

Email Address: auntym@macnexus.org

Affiliation:

Subject: zev technology & market picture

Comment:

This report should include a discussion of photovoltaic (PV) electricity production for batteries.

A power source with no direct emissions from energy production (except maybe the production/distribution/installation of the PV panel) should be given high credits for meeting current and accelerated ZEV requirements.

The predicted NiMH battery price for production levels above 100,000 does not seem to me at all challenging to many middle-income consumers when you consider several other related market conditions.

The first of these conditions is the widely reported low maintenance costs of battery electric vehicles. This means lower total costs to consumers, especially when gasoline prices will continue to rise. Moreover, informed observers have noted that GM and Ford are trapped by their market relationships to dealers, based on decisions made decades ago. Dealers of course make good money providing maintenance, and this income stream may be threatened by low-maintenance, consumer-friendly vehicles. Thus, industry's protestations of inability to manufacture or sell more than 100,000 vehicles may be based on non-technological difficulties.

The second of these conditions is the apparent availability of increasing production of PV panels and decreasing prices as volume and knowledge increase (even with some cost increases in raw materials). Again, this compares favorably to inevitably rising costs of fossil fuels. Some research into this market, and its technological and economics prospects, would pertain to the future of BEVs, FPZEVs, or whatever you want to call them.

Other major conditions are the worldwide prospects of declining supplies of fossil fuels, of dangerous global climate change induced by past, present and future use of fossil fuels, and of the unnecessary risks of reviving nuclear powerplant construction (not least of which is very large fossil fuel requirements for mining, etc.). Recent substantial increases in public awareness of some or all of these dangerous challenges have I believe greatly increased consumer interest in non-combustion energy sources, and thus also consumer acceptance of new solutions and new cost structures. Industry protestations of lack of consumer interest should be viewed with great skepticism.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 09:19:33

No Duplicates.

## **Comment 29 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Gregory

Last Name: Simon

Email Address: simo1@pacbell.net

Affiliation: San Francisco Electric Vehicle Associati

Subject: ZEV mandate

Comment:

Dear CARB,

Because zero-emissions travel is not part of your recent protocol,  
I very much hope you re-institute the ZEV mandate from the 1990's.

We've driven two 100% solar-powered 2002 RAV4EVs for six years  
now, doing our little part for sustainability.

It's ironic and sad to hear recent CARB members say the electric  
vehicle program failed; you consider our story a failure?

No worries, Simo

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 09:19:33

No Duplicates.

## **Comment 30 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Judith

Last Name: Bayer

Email Address: judith.bayer@utc.com

Affiliation: UTC Power

Subject: UTC Power Comments on Zero Emission Vehicle Program

Comment:

Please find attached a copy of UTC Power's comments on the Zero Emission Vehicle Program. If there are questions regarding this transmission, please contact Judith Bayer (judith.bayer@utc.com). Substantive questions should be addressed to Ken Stewart, Vice President Transportation, UTC Power (ken.stewart@utcpower.com)  
Thank you

Attachment: 'www.arb.ca.gov/lists/zev2007/54-  
utc\_power\_statement\_on\_zev\_rule\_5.23.2007.doc'

Original File Name: UTC Power Statement on ZEV Rule 5.23.2007.doc

Date and Time Comment Was Submitted: 2007-05-23 09:28:47

No Duplicates.

## **Comment 31 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Arthur

Last Name: Marin

Email Address: amarin@nescaum.org

Affiliation: NESCAUM

Subject: ZEV Program Review Comments

Comment:

Please see attached comments.

Attachment: 'www.arb.ca.gov/lists/zev2007/55-nescaum\_zev\_review\_comments\_5-23-07.pdf'

Original File Name: NESCAUM ZEV Review Comments 5-23-07.pdf

Date and Time Comment Was Submitted: 2007-05-23 10:33:14

No Duplicates.



## **Comment 32 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Michael

Last Name: Lord

Email Address: toyota\_corp\_comm@toyota.com

Affiliation: Toyota

Subject: Toyota Comments for Consideration at 5/24-25 ZEV Public Meeting

Comment:

Please find attached Toyota's comments for your consideration.

Attachment: 'www.arb.ca.gov/lists/zev2007/56-toyota\_comments\_for\_5-24-2007\_zev\_board\_hearing.pdf'

Original File Name: Toyota Comments for 5-24-2007 ZEV Board Hearing.pdf

Date and Time Comment Was Submitted: 2007-05-23 10:42:50

No Duplicates.

## **Comment 33 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Felix

Last Name: Kramer

Email Address: fkramer@calcars.org

Affiliation: The California Cars Initiative

Subject: CalCars Testimony on ZEV Program

Comment:

See attached for our report on the receptivity of automakers to third-party battery warranty proposals and other steps that could rapidly accelerate demonstration fleets and mass commercialization of plug-in hybrids.

Attachment: 'www.arb.ca.gov/lists/zev2007/57-calcars-arb-zevreview-24may2007.pdf'

Original File Name: calcars-arb-zevreview-24may2007.pdf

Date and Time Comment Was Submitted: 2007-05-23 10:51:00

No Duplicates.

## **Comment 34 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: laura

Last Name: stuchinsky

Email Address: lstuchinsky@svlg.net

Affiliation: Silicon Valley Leadership Group

Subject: Zero Emission Vehicle Program, May 24 Board meeting

Comment:

letter attached.

Attachment: 'www.arb.ca.gov/lists/zev2007/58-zev\_ltr.pdf'

Original File Name: ZEV ltr.pdf

Date and Time Comment Was Submitted: 2007-05-23 11:17:31

No Duplicates.

## **Comment 35 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: David

Last Name: West

Email Address: dave.west@dep.state.nj.us

Affiliation: 609-530-4036

Subject: Comments: NJDEP: ZEV Technology Review 2007

Comment:

Please find attached comments on the subject report from the NJDEP.

Attachment: 'www.arb.ca.gov/lists/zev2007/59-zev\_review\_2007\_comments-njdep.doc'

Original File Name: ZEV Review 2007 Comments-NJDEP.doc

Date and Time Comment Was Submitted: 2007-05-23 11:49:49

No Duplicates.

## **Comment 36 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Michael  
Last Name: Gaylord  
Email Address: mikegaylord@hotmail.com  
Affiliation:

Subject: Zero Emission Vehicle Mandate  
Comment:

Please reinstate the legislation mandating manufacturers produce Zero Emissions Vehicles for sale in California --in this case, electric cars. In fact, the best thing would be to increase the percentage of cars brought in to this state, more than the original act called for.

Electric cars worked. People wanted them. Battery technology is good enough, and all the software and hardware worked. The cars were built, and almost without exception, they were sweet. Manufacturers still have the plans to these cars, and truth be told they probably still have the factory dies and technology to start up again where they left off.

There is no good reason why they can't resume production. If they say they aren't ready, or that the technology is not proven, then they are lying. The cars worked. Please make them bring them back into production. That is what the people of this state --your employers-- want.

Thank you.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 11:50:04

No Duplicates.

## **Comment 37 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Dave

Last Name: Goldstein

Email Address: goldie.ev1@juno.com

Affiliation: EVA/DC

Subject: Independent Expert Panel Report - Prospects for BEV Technology

Comment:

I am Dave Goldstein, President of EVA/DC, the Electric Vehicle Association of Greater Washington since 1980, with more than 30 years of diversified experience with electric and hybrid vehicles and advanced battery systems. I have served on a number of U.S. Department of Energy advisory committees, including many years as a member of the Ad Hoc Advanced Battery Readiness Working Group (ABRWG.)

Thank you for the opportunity to review the 2007 ARB Independent Expert Panel Report on the Status and Prospects for Zero Emission Vehicle Technology. Although I have not had sufficient time to review the entire 207 page report, I have read through a great deal of it, and have been generally impressed with the depth of this effort to characterize the current state of energy storage, its metrics and implications for California, and effectively, for the entire world.

The panel has painstakingly characterized each technology, its strengths and weaknesses, market potential and presumed market penetration. It has done a particularly admirable job in describing the various Lithium-Ion battery chemistries and fuel cell challenges.

In so doing, however, the panel has, by nature of the questions posed, relied heavily upon industry sources and opinions to gather and produce this information. In the process - no doubt inadvertently - an unfortunate but pervasive automotive industry bias is evident throughout this report. Several statements and key assumptions, particularly with regard to economics and consumer attitudes, are highly questionable and should be reviewed with a critical eye by ARB staff, noting that industry opinions and regulatory actions are inherently at odds with one another,

Properly informed regulatory decisions, on the other hand, ultimately benefit both industry and consumers, by rationalizing the market, creating meaningful standards, accelerating critical mass in emerging technologies and thereby creating new business opportunities as well as consumer choices while ultimately providing cleaner air for all of us.

I do not envy the challenge before ARB staff. We are running out of time. Yet we are aiming at a moving target - Energy Storage - which has challenged us for most of the past century and which will likely challenge us for most of this one as well. Thus, a fundamental question that may or may not be properly framed by this report is, or should be: "When is good enough good

enough?" It is up to ARB to decide.

Within that context, here are a few statements that I believe should be critically reviewed:

Page 3, NiMH costs - The panel states that "high costs remain the greatest challenge for battery and HEV manufacturers" as well as Medium Power and High Energy NiMH, then states that costs would be significantly reduced in 1 million systems per year to roughly 40 percent to no more than \$2,500. This is about the cost of a premium sound package and/or GPS system in many vehicles and is more than eclipsed by the added cost premium of an SUV compared to a pickup truck or minivan. Yet consumers make that choice every day. If the value proposition is there - overlooked, apparently, by this panel, then why should "cost" remain the greatest challenge?

Page 3, etc. - The panel repeatedly compares initial battery prices to "lifetime fuel costs." While this may be one metric applied by consumers, it is not the sole determinant of consumer demand, and hence, market opportunity. Rather, it is a false argument presented by OEMs that do not presently offer hybrids in any significant numbers. In fact, - a more appropriate comparison would be lifetime vehicle costs including batteries (and for PHEVs, electricity) vs. lifetime costs for ICEVs, including fuel and maintenance.

Page 3, etc., -- Li-Ions are claimed to offer "lower specific costs," yet the numbers shown for Medium Energy/Power Li-Ion batteries in mass production are about the same cost as NiMH's in mass production. In fact, this matches the predictions of an EPRI study that found that both chemistries in mass production would ultimately cost about the same (approx. \$250-300/kWh.) Yet the panel seems to be suggesting that OEMs - and hence CARB - should wait for Li-Ions to be perfected rather than to allow or encourage NiMH to accelerate the early adoption of PHEVs. Again, this is an OEM argument for delaying implementation of technology-forcing standards until battery technology is "mature."

NiMH technology, as the panel correctly states, is relatively mature, as the panel states, and has already demonstrated. Now the argument seems to be, "Let's wait for the next technology to come along before proceeding."

Unfortunately time has run out to submit further comments. I would welcome the opportunity to continue this analysis with regard to Li-Ion, which indeed is a very promising near term technology.

But I must end my analysis here.

Regards,

Dave Goldstein  
President, EVA/DC  
Tel: 301-869-4954

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 12:00:51

No Duplicates.



## **Comment 38 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Arthur

Last Name: Keller

Email Address: zev@kellers.org

Affiliation:

Subject: Reinstate ZEV Mandate

Comment:

My wife and I have driven RAV4 EVs (pure electric vehicles) since 2001. About 2/3 of our overall driving has been in these vehicles. About 1/3 of our overall driving occurs in a gasoline-powered minivan, which we primarily drive when we go long distances or need to carry more passengers than the RAV4 EV can carry. If our minivan was a plug-in hybrid vehicle, then perhaps 90% of our driving would be using electricity, dramatically lowering our need for gasoline.

It is clear that fuel cell technologies have not arrived. Like Charlie Brown with that football, using fuel cells in cars is a concept we've been promised for years, and will continue to be promised for years.

As Felix Kramer says, electric cars and plug-in hybrid vehicles are the only vehicles that get cleaner over time, precisely because the grid gets cleaner.

And we know that electric cars fueled with coal-fired electricity are still cleaner on a well-to-wheel analysis than gasoline-powered vehicles. This is especially true with the California electrical grid, which is much cleaner than the national average.

About 15 million plug-in vehicles (plug-in hybrids or battery electric vehicles) could be charged overnight without adding a single power plant.

So my recommendation is to change the ZEV mandate to eliminate credits for experimental fuel cells, and set a mandate for zero emission vehicles, like battery-electric vehicles with some credits given for plug-in hybrid electric vehicles, like the Prius conversions or the proposed Chevy Volt.

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 14:21:58

No Duplicates.

## **Comment 39 for ZEV Program Status Report (zev2007) - Non-Reg.**

First Name: Arnold

Last Name: de Leon

Email Address: a-ev-owner@deleons.com

Affiliation:

Subject: We need a stronger ZEV not weaker

Comment:

In 2002 I replaced the Prius that I drove with all electric RAV4-EV. I promised that I would not buy another vehicle that was not cleaner and better than the one before it. We are two car family and our second car is Prius.

It's now 2007, I've logged over 54,000 miles in my RAV4-EV. Should something unfortunate happen to my EV there is nothing that I can buy today that is better. There is no denying that the technology existed then and it certainly exists today.

Our Prius, as good as it is, still can't be powered by the solar panels that are on roof our house. I'm still waiting for car that has plug on it to replace that car.

Bring back the original ZEV mandate, level the playing field for cleaner vehicles like battery electric vehicles and plug-in HEVs. Fossil powered vehicles have had an unfair advantage, they are not penalized for the air pollution that they cause compared to ZEVs. Don't pick the technology, remove the preference for fuel cell vehicles. If fuel cells are the answer then they will emerge as the winner in fair contest.

Arnold de Leon

Attachment: "

Original File Name:

Date and Time Comment Was Submitted: 2007-05-23 20:06:37

No Duplicates.

## **Comment 1 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Felix

Last Name: Kramer

Email Address: fkramer@calcars.org

Affiliation: California Cars Initiative (CalCars.org)

Subject: Final version of testimony presented yesterday

Comment:

For the record, I would appreciate your replacing my earlier submission with this electronic file.

After I uploaded a version before the Weds May 23 deadline (confirmation text below), I modified this testimony. What I'm now uploading matches the printed version delivered to Board members and staff on Thursday. (I presented verbally only brief excerpts)

Thank you, Felix Kramer

CONFIRMATION PREVIOUSLY RECEIVED:

Comment 57 for zev2007 (Non-Reg).

CONTACT INFORMATION:

First Name: Felix

Last Name: Kramer

Email: fkramer@calcars.org

Phone: 6505205555

Affiliation: The California Cars Initiative

File (i.e., Attachment): calcars-arb-zevreview-24may2007.pdf

Attachment URL:

[www.arb.ca.gov/lists/zev2007/57-calcars-arb-zevreview-24may2007.pdf](http://www.arb.ca.gov/lists/zev2007/57-calcars-arb-zevreview-24may2007.pdf)

Subject: CalCars Testimony on ZEV Program

Comment:

See attached for our report on the receptivity of automakers to third-party battery warranty proposals and other steps that could rapidly accelerate demonstration fleets and mass commercialization of plug-in hybrids.

Attachment: [www.arb.ca.gov/lists/zev2007/64-calcars-arb-zevreview-24may2007-final.pdf](http://www.arb.ca.gov/lists/zev2007/64-calcars-arb-zevreview-24may2007-final.pdf)

Original File Name: calcars-arb-zevreview-24may2007-final.pdf

Date and Time Comment Was Submitted: 2007-05-25 09:36:21

No Duplicates.

## **Comment 2 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: David

Last Name: Modisette

Email Address: Non-web submitted comment

Affiliation: CA Electric Transportation Coalition

Subject: Status Report on ARB's Zero Emission Vehicle Program

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/65-zev2007-ws-1.pdf](http://www.arb.ca.gov/lists/zev2007/65-zev2007-ws-1.pdf)

Original File Name: zev2007-ws-1.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:36:17

No Duplicates.

### **Comment 3 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: William

Last Name: Korthof

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/66-zev2007-ws-2.pdf](http://www.arb.ca.gov/lists/zev2007/66-zev2007-ws-2.pdf)

Original File Name: zev2007-ws-2.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:37:31

No Duplicates.

## **Comment 4 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Doug

Last Name: Korthof

Email Address: Non-web submitted comment

Affiliation:

Subject: Plug-in Cars: Self-funding for solar power and clean air

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/67-zev2007-ws-3.pdf](http://www.arb.ca.gov/lists/zev2007/67-zev2007-ws-3.pdf)

Original File Name: zev2007-ws-3.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:39:01

No Duplicates.

## **Comment 5 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Karl

Last Name: Heinz-Ziwica

Email Address: Non-web submitted comment

Affiliation: BMW

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/68-zev2007-ws-4.pdf](http://www.arb.ca.gov/lists/zev2007/68-zev2007-ws-4.pdf)

Original File Name: zev2007-ws-4.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:40:41

No Duplicates.

## **Comment 6 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Robert

Last Name: Brown

Email Address: Non-web submitted comment

Affiliation: Ford Motor Company

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/69-zev2007-ws-5.pdf](http://www.arb.ca.gov/lists/zev2007/69-zev2007-ws-5.pdf)

Original File Name: zev2007-ws-5.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:41:32

No Duplicates.



## **Comment 7 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: John

Last Name: Williams

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/70-zev2007-ws-6.pdf](http://www.arb.ca.gov/lists/zev2007/70-zev2007-ws-6.pdf)

Original File Name: zev2007-ws-6.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:45:06

No Duplicates.

## **Comment 8 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Alan

Last Name: Weverstad

Email Address: Non-web submitted comment

Affiliation: General Motors

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/72-zev2007-ws-7.pdf](http://www.arb.ca.gov/lists/zev2007/72-zev2007-ws-7.pdf)

Original File Name: zev2007-ws-7.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:54:29

No Duplicates.

## **Comment 9 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Ching

Last Name: Lui

Email Address: Non-web submitted comment

Affiliation: SCAQMD

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/73-zev2007-ws-8.pdf](http://www.arb.ca.gov/lists/zev2007/73-zev2007-ws-8.pdf)

Original File Name: zev2007-ws-8.pdf

Date and Time Comment Was Submitted: 2007-06-01 14:56:19

No Duplicates.

## **Comment 10 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Luke

Last Name: Tonachel

Email Address: Non-web submitted comment

Affiliation: NRDC

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/74-zev2007-ws-9.pdf](http://www.arb.ca.gov/lists/zev2007/74-zev2007-ws-9.pdf)

Original File Name: zev2007-ws-9.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:09:54

No Duplicates.

## **Comment 11 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Ben

Last Name: Knight

Email Address: Non-web submitted comment

Affiliation: Honda

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/75-zev2007-ws-10.pdf](http://www.arb.ca.gov/lists/zev2007/75-zev2007-ws-10.pdf)

Original File Name: zev2007-ws-10.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:12:41

No Duplicates.

## **Comment 12 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Alec

Last Name: Brooks

Email Address: Non-web submitted comment

Affiliation:

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/76-zev2007-ws-11.pdf](http://www.arb.ca.gov/lists/zev2007/76-zev2007-ws-11.pdf)

Original File Name: zev2007-ws-11.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:13:13

No Duplicates.

## **Comment 13 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Fred

Last Name: Maloney

Email Address: Non-web submitted comment

Affiliation: Daimler Chrysler

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/77-zev2007-ws-12.pdf](http://www.arb.ca.gov/lists/zev2007/77-zev2007-ws-12.pdf)

Original File Name: zev2007-ws-12.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:14:29

No Duplicates.

## **Comment 14 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Jamie

Last Name: Knapp

Email Address: Non-web submitted comment

Affiliation: ZEV Alliance

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/78-zev2007-ws-13.pdf](http://www.arb.ca.gov/lists/zev2007/78-zev2007-ws-13.pdf)

Original File Name: zev2007-ws-13.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:16:49

No Duplicates.



## **Comment 15 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Danielle

Last Name: Fugere

Email Address: Non-web submitted comment

Affiliation: Friends of the Earth

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/79-zev2007-ws-14.pdf](http://www.arb.ca.gov/lists/zev2007/79-zev2007-ws-14.pdf)

Original File Name: zev2007-ws-14.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:17:31

No Duplicates.

## **Comment 16 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Dan

Last Name: Elliot

Email Address: Non-web submitted comment

Affiliation: Phoenix Motorcars

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/80-zev2007-ws-15.pdf](http://www.arb.ca.gov/lists/zev2007/80-zev2007-ws-15.pdf)

Original File Name: zev2007-ws-15.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:20:57

No Duplicates.

## **Comment 17 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Ken

Last Name: Boshart

Email Address: Non-web submitted comment

Affiliation: Boshart Engineering

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/81-zev2007-ws-16.pdf](http://www.arb.ca.gov/lists/zev2007/81-zev2007-ws-16.pdf)

Original File Name: zev2007-ws-16.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:22:07

No Duplicates.

## **Comment 18 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Evan

Last Name: House

Email Address: Non-web submitted comment

Affiliation: Altairnano

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/82-zev2007-ws-17.pdf](http://www.arb.ca.gov/lists/zev2007/82-zev2007-ws-17.pdf)

Original File Name: zev2007-ws-17.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:25:19

No Duplicates.

## **Comment 19 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Dennis

Last Name: Hogan

Email Address: Non-web submitted comment

Affiliation: Phoenix Motorcars

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/83-zev2007-ws-19.pdf](http://www.arb.ca.gov/lists/zev2007/83-zev2007-ws-19.pdf)

Original File Name: zev2007-ws-19.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:28:59

No Duplicates.

## **Comment 20 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Jeff

Last Name: Ulrich

Email Address: Non-web submitted comment

Affiliation: Altairnano

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/84-zev2007-ws-20.pdf](http://www.arb.ca.gov/lists/zev2007/84-zev2007-ws-20.pdf)

Original File Name: zev2007-ws-20.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:30:52

No Duplicates.

## **Comment 21 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: C. Robert

Last Name: Pedraza

Email Address: Non-web submitted comment

Affiliation: Altairnano, Inc.

Subject: Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/85-zev2007-ws-21.pdf](http://www.arb.ca.gov/lists/zev2007/85-zev2007-ws-21.pdf)

Original File Name: zev2007-ws-21.pdf

Date and Time Comment Was Submitted: 2007-06-01 15:32:33

No Duplicates.

## **Comment 22 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Linda

Last Name: Nicholes

Email Address: Non-web submitted comment

Affiliation: Sierra Club

Subject: Sierra Club Statement on ZEV Regulation

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/87-zev2007-ws-22.pdf](http://www.arb.ca.gov/lists/zev2007/87-zev2007-ws-22.pdf)

Original File Name: zev2007-ws-22.pdf

Date and Time Comment Was Submitted: 2007-06-05 14:22:46

No Duplicates.



## **Comment 23 for ZEV Program Status Report (zev2007). (At Hearing)**

First Name: Olivier

Last Name: Bourges

Email Address: Non-web submitted comment

Affiliation: Nissan North America, Inc.

Subject: Confidential--Zero Emission Vehicle Program Review

Comment:

Please see the attached comment.

Attachment: [www.arb.ca.gov/lists/zev2007/88-zev2007-ws-23.pdf](http://www.arb.ca.gov/lists/zev2007/88-zev2007-ws-23.pdf)

Original File Name: zev2007-ws-23.pdf

Date and Time Comment Was Submitted: 2007-06-05 14:31:41

No Duplicates.