

## **Comments to California Air Resources Board on VW Settlement Funding Options**

This letter is written in support of funding from the VW Settlement for electric vehicle transportation infrastructure, and especially for hydrogen refueling stations. I am an independent consultant and I have been involved with the Central Coast Tri-Counties region – Ventura, Santa Barbara and San Luis Obispo – in the preparation of their hydrogen readiness plan funded by the California Energy Commission. It is clear to me from this work that the absence of hydrogen refueling infrastructure is the most significant barrier to accelerated adoption of Fuel Cell Electric Vehicles (FCEVs) in this region.

### **The Need for funding Hydrogen Refueling Stations**

The first hydrogen station in the Tri-Counties is now in place and operational in Santa Barbara. But without a basic network of supporting stations, the automakers are reluctant to designate dealerships to sell FCEVs locally, and most buyers are unwilling to travel 100 plus miles to purchase and service these vehicles. (For example, our nearest Toyota dealership for the Mirai is in Santa Monica.)

Implementation of the readiness plan for the Tri-Counties will require an aggressive effort to secure further funding for stations in the region, since there is significant competition for limited funds available from the State through AB8. The VW Settlement offers at least one additional opportunity for this, and these funds may be used to support fund-raising efforts locally to expand the network of stations.

For this reason, I strongly support CARB Category 1 as a priority for use of the VW funds specifically for hydrogen stations. It is important to recognize that the cost of each hydrogen station is a barrier that is unique to hydrogen. This means that the build out needed to achieve an incipient market happens very slowly. An injection of funds to a regional community can dramatically change that as it can allow a community to operate an early fleet of hydrogen vehicles without the handicap of waiting several years to reach a point whereby the market can function in a commercially viable manner.

### **Renewable Hydrogen and Distributed Generation**

Other important considerations in allocating funds to the regions would be (1) the degree to which renewable hydrogen is to be incorporated in the supply system, and (2) how the need for distribution can be eliminated by having local generation.

### **Green Cities/Green Communities**

Sustainable communities would have an immediate benefit from the use of the VW Settlement funds if the hydrogen station infrastructure were coupled with CARB Category 4 (“Green City”) in a way that would allow for the emergence of “hydrogen hubs”. For example, a funding allocation for four or five stations in a region that has an approved readiness plan could provide sufficient investment to spur the initial market for FCEVs, and with that would come a greater familiarity of hydrogen and awareness of its potential for use in fleets and stationary

applications. This could be a feature of progressive smart grid cities. For example, ideas might build off the initial work already under way at UC Irvine's Advanced Power and Energy Program to integrate fuel cells in a micro-grid in combination with FCEVs in a campus environment.

### **Allocation Process**

It is recommended that regions interested in this opportunity could be invited to submit proposals that detail how funds used for hydrogen refueling stations would be used, following basic criteria developed by CARB. Regions would be encouraged to be innovative in their responses, and then they could be prioritized in terms of demonstrated readiness, attractive market indicators for personal and heavy-duty hydrogen vehicles, pursuit of renewable hydrogen and distributed generation, and the ability to provide linkages between other main hydrogen hubs (such as midway between Los Angeles and San Francisco along the 101 highway).

Other factors could include:

- Ideas for promoting fuel cells (and hydrogen) for stationary applications as well as for mobility
- Efforts made to provide co-funding locally for at least some of this infrastructure
- Commitment to begin or maintain education and outreach efforts for FCEVs, which could be tied to the California Fuel Cell Partnership 2017 Awareness Campaign that will be launched in 2017.

The application process for funding might specify funding criteria, but remain open enough to allow responding communities to offer creative proposals for how the funds will be used, without being overly restrictive. To this end, respondents would be required to demonstrate the GHG and air quality benefits derived from the use of funds, as well as other co-benefits.

### **Summary**

I strongly believe that commitment of VW Settlement funds to hydrogen infrastructure and related needs could be an excellent way to provide a huge boost to hydrogen at a time when stations are desperately needed to fuel the higher number of FCEVs that will soon be made available for sale in the state.



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