

PROPOSAL:

Approve and Adopt Expanded Plug-in Hybrid Electric Vehicle Program

SYNOPSIS:

The AQMD has sponsored plug-in hybrid electric vehicle (PHEV) research and development since 2000. Through this support, PHEVs have gained national attention and are potentially poised for greater deployment. This action is to develop a program to further accelerate the development of PHEVs by (1) increasing resources to address the technical challenges, (2) directing staff to promote the technology to local communities, and (3) joining the Austin Energy Plug-in Partners National Campaign.

COMMITTEE:

Technology, March 31, 2006, Recommended for Approval

RECOMMENDED ACTIONS:

Adopt the attached Resolution to:

1. join the Austin Energy Plug-in Partners National Campaign; and
2. direct staff to develop a program to accelerate PHEV deployment by
 - a. proposing projects to address the PHEV technical issues; and
 - b. organizing outreach to promote and incentivize local communities to use PHEVs.

Barry R. Wallerstein, D.Env.
Executive Officer

Background

The volume and success of gasoline-fueled hybrid electric vehicles (HEVs) are continuing to increase, with major automakers announcing new hybrid models each year. The manner in which the various vehicle components are sized, packaged, fueled, and controlled; however, substantially impacts the air quality benefits from these vehicles. One hybrid electric concept that offers substantial air quality benefits is the plug-in hybrid electric vehicle (PHEV), which can travel solely on battery power for a prescribed range thereby providing zero emission miles. AQMD has supported PHEV development since 2000 and has two current projects underway to demonstrate (1) DaimlerChrysler PHEV Sprinter delivery vans and (2) the conversion of Toyota Prius vehicles to PHEVs. There has also been national attention on PHEV technology as a means to reduce petroleum dependence, with diverse supporters including neo-conservative groups, environmentalists, and utilities. Austin Energy, the electric Utility for Austin, Texas, also recently initiated a national "Plug-in Partners" campaign to build a market for PHEVs by soliciting the top 50 US cities (by population) and their utilities to support PHEVs through incentives, fleet commitments, and educational outreach to communities. The Cities of Los Angeles and Irvine have already joined this effort (LA Times, January 25, 2006).

As this technology continues to progress and realize lower and lower emissions, the AQMD Governing Board has directed staff to expand its efforts and leverage existing programs elsewhere to accelerate PHEV commercialization.

Proposal

Staff proposes two parallel efforts, one technical and one outreach-oriented, to expand the AQMD's existing PHEV program.

PHEV Technical Plan

There are critical areas of technology progress, particularly in battery development, that need to be addressed if PHEVs are to become commercially viable. Many of the issues that challenged mass electric vehicle deployments are still open questions with the new battery technologies, e.g., durability, battery life with depth of discharge, replacement cost, and safety. Selecting the optimum chemistry and battery type (power vs. energy) are also important factors to incorporate in the vehicle design. For example, a transit bus will have different requirements than a light-duty passenger vehicle. Although AQMD partners are working on these issues, increased pressure, attention, and funding may accelerate this progress. Staff recommends convening a working group of key partners, such as DaimlerChrysler, EPRI, and SCE, along with technical advisors and other invited experts, to develop a strategic research, development, demonstration, and deployment PHEV Technical Plan (PHEV Tech-Plan) to address and overcome these barriers. All of the major automobile manufacturers, especially the ones with commercial hybrid vehicles (Ford, Honda, and Toyota), will also be invited to participate. The working group will assist staff in developing projects to include in the PHEV Tech-Plan but the individual projects will still require Governing Board approval for implementation.

The PHEV Tech-Plan will be technology-driven to accelerate the implementation of commercially-ready PHEVs. The second part of the strategy is to address the demand-side of the equation by educating and incentivizing early adopters through outreach activities.

PHEV Outreach Plan

Staff proposes that Public Affairs and the Technology Advancement Office establish a PHEV Outreach Plan which identifies key stakeholders to educate regarding PHEV technologies. These stakeholders should include, but are not limited to, local city governments, public and private fleets, environmental groups, community groups, and municipal utilities. The Outreach Plan will educate these entities on the benefits of PHEVs and suggest strategies to incorporate vehicles into their fleets. As part of the Outreach Plan, these stakeholder groups will have the opportunity to test-drive the early, pre-commercial demonstration vehicles being sponsored by the AQMD. These ride-and-drive visits will also provide the opportunity for AQMD to discuss other issues of importance; for example, staff can discuss the Clean Air Choices list, which identifies the cleanest vehicles available today for commercial purchase.

The Outreach Plan will also work with the stakeholders to identify funding mechanisms to assist in incentivizing early adopters to purchase PHEVs. Utilities will be encouraged to adopt lower rates or rebates for customers purchasing PHEVs. Discussions will be initiated to identify state and local incentive funding sources to help buydown the incremental cost of the new technology.

Finally, staff proposes that the AQMD Outreach Plan collaborate with the Austin Energy "Plug-in Partners National Campaign," initiated by the electric utility in Austin, Texas. This is a national effort to secure "soft-orders" for PHEVs and targets the 50 largest cities (by population) and their utilities. There are educational and outreach components being developed by Austin Energy that would leverage the AQMD PHEV Outreach Plan, and the AQMD Program could assist the Plug-in Partners Campaign by showcasing the early demonstration PHEVs. Fleets within the AQMD could also be encouraged to participate in the "soft-orders" to leverage with other fleets nationwide and signal the automobile manufacturers that a market does indeed exist.

A diagram of the proposed components of the expanded PHEV program is provided in Figure 1.

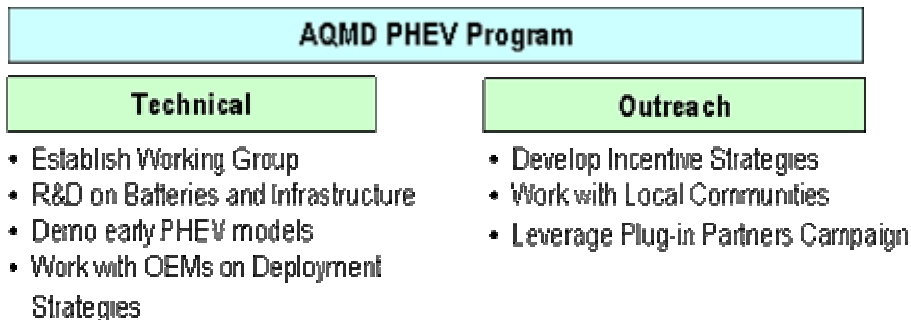


Figure 1: Expanded AQMD PHEV Program

Benefits to the AQMD

The expansion of the PHEV program is included in the *Technology Advancement Office Clean Fuels Program 2006 Plan Update* under items “Demonstrate Light Duty Plug-in Hybrid Electric Vehicles” and “Develop and Demonstrate Medium- and Heavy-Duty Hybrid Vehicles and Systems.” Plug-in hybrid technologies overall have lower criteria pollutant emissions and have zero local emissions during the portion of the commute when the vehicles are operating on battery only. This can provide substantial benefits to communities, neighborhoods, and schools where these vehicles operate.

The AQMD has been a leader in developing and demonstrating plug-in hybrid technologies. Expansion of the AQMD PHEV Program will accelerate the determination of commercial viability for this technology and its associated air quality benefits. Joining with other programs such as the Austin Energy Plug-in Partners National Campaign also helps to leverage the AQMD efforts on a national scale to exert more pressure on the OEMs for the deployment of cleaner technologies.

Resource Impacts

There is no current funding request. Any future projects developed as a result of the AQMD PHEV Program, however, will be vetted through the normal committee process and presented to the Governing Board for consideration.

Staff resources are requested to execute the PHEV Technical and Outreach Plans.

Attachments Resolution

ATTACHMENT

RESOLUTION NO. 06-

A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) regarding Plug-in Hybrid Electric Vehicles (PHEVs).

WHEREAS, the AQMD has long demonstrated leadership in supporting the expedited

demonstration and commercialization of advanced low-emission and zero-emission technologies and clean fuels; and

WHEREAS, the AQMD recognizes Plug-in Hybrid technology as a leading candidate to assist in achieving cleaner air in the South Coast Basin; and

WHEREAS, the interest in PHEVs has increased nationally due to the potential for reduced criteria pollutant emissions, reduced greenhouse gas emissions, and reduced petroleum dependence; and

WHEREAS, this increased attention signals an opportune time to marshal additional resources to leverage opinion, resources, and activities to accelerate commercialization of PHEVs.

NOW, THEREFORE, BE IT RESOLVED, that the Board directs staff to establish a working group of partners, experts, and manufacturers to develop a PHEV Technical Plan to address the technical challenges limiting PHEV commercialization.

BE IT FURTHER RESOLVED, that the Board directs staff to establish a PHEV Outreach Plan to educate key stakeholders and promote PHEVs, including local community outreach, investigating incentive mechanisms, and leveraging with other groups with similar interests.

BE IT FURTHER RESOLVED, that the AQMD collaborate with Austin Energy on their Plug-in Partners National Campaign and leverage resources, content, and activities to promote PHEVs.

Dated:

Sandra McDaniel, Clerk of the Board

This page updated:

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