



**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

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## **FOR IMMEDIATE RELEASE**

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# **POLLUTION-FREE FUEL CELL VEHICLES TO BE TESTED IN PALM DESERT**

Taking the next step toward development of totally pollution-free automobiles, air quality officials have funded a project to build vehicles that run on hydrogen produced by sunlight and wind.

The South Coast Air Quality Management District's Governing Board agreed to contribute \$550,000 this month toward a \$4.23 million, multi-organization project to build and test eight fuel cell-powered electric vehicles during the next three years.

Five utility carts and three "neighborhood vehicles" -- narrow, two-seater cars -- will run on hydrogen produced by a solar photovoltaic array near Palm Desert's City Hall and a wind turbine north of the city. The City of Palm Desert will use the vehicles on city streets for utility and demonstration purposes.

"Unlike battery-powered electric vehicles, which may be associated with a small amount of air pollution from the power plants that charge them, these vehicles will truly have zero emissions from cradle to grave," said James M. Lents, AQMD's executive officer.

"Even the fuel production will not result in any pollution," he said.

The utility carts -- actually golf carts converted from batteries to fuel cell power -- will be used on city streets, displacing polluting gasoline-powered vehicles.

City of Palm Desert officials pioneered the on-road use of golf carts in recent years for local transportation. State legislation allows the city to license electric golf carts for driving on city streets.

Fuel cell-powered golf carts will be capable of much more than their battery-powered cousins. They are expected to have a range of up to 100 miles -- more than 10 times that of battery-powered golf carts. Refueling fuel cell carts takes just minutes as opposed to several hours needed to recharge battery electric vehicles.

Some of the fuel cell-powered electric golf carts will be fitted with small pickup beds and used for city park patrols, maintenance and a variety of utility functions. Neighborhood vehicles are suitable for all but freeway driving.

City of Palm Desert officials hope the project will attract fuel cell manufacturers to the area.

"We want Palm Desert to become the Silicon Valley of fuel cells," said Paul Shillcock, director of economic development for the City of Palm Desert.

Researchers at the Schatz Energy Research Center at Humboldt State University in Arcata will design and build the vehicles. Under the direction of engineering professor Peter Lehman, they will retrofit existing battery-powered golf carts and neighborhood electric vehicles to run on proton exchange membrane fuel cells.

"The lessons learned from building these small prototype vehicles will provide valuable information toward the development of full-sized automobiles powered by emission-free fuel cells," said Roy Wilson, an AQMD board member and Riverside County supervisor.

Fuel cells, first invented more than a century ago, chemically convert hydrogen and oxygen into electricity. The only byproducts

are pure water and heat.

Fuel cells have been used extensively in spacecraft and are now being demonstrated in buildings and urban transit buses.

Hydrogen for the Palm Desert vehicles will be produced from electricity generated by a 4,000-square-foot, 50-kilowatt solar array, and a 65-kilowatt wind turbine. The electricity will be used to extract hydrogen from water through a process known as electrolysis. Fuel cells will get oxygen from outdoor air.

Hydrogen gas will be compressed and transported to a site where the vehicles will can be refueled. The solar panels and wind turbine are expected to produce enough hydrogen each day to equal the energy content of eight to 16 gallons of gasoline -- enough fuel to drive each of the eight vehicles 50 to 100 miles a day.

Project leaders will also build a diagnostic and service center in Palm Desert for the fuel cell vehicles.

"Petroleum products such as gasoline pollute our atmosphere, and once they are taken from the Earth they cannot be replenished," Lents said.

"This project will create a model for a pollution-free community transportation system that uses an unlimited energy source -- the wind and the sun."

Organizations contributing to the project, and the expected amount of their contributions include:

\_ U.S. Department of Energy: \$1,859,300;

\_ AQMD: \$550,000 during fiscal year 95-96 and \$275,000 during fiscal year 96-97 for a total of \$825,000;

\_ City of Palm Desert: \$300,000;

\_ DuPont Fluoroproducts of Wilmington, Del.: \$42,500; and

\_ Teledyne Brown Engineering of Hunt Valley, Md.: \$40,000.

In addition, the following dollar amounts of services will be contributed by:

\_ City of Palm Desert: \$434,000;

\_ Schatz Energy Research Center: \$521,640;

\_ Wintec of Palm Springs: \$145,000; and

\_ ASE Americas, Inc. of Billerica, Mass: \$61,000.

Finally, Lawrence Livermore National Laboratory and Sandia National Laboratory, both in Livermore, will contribute technical expertise on hydrogen and fuel cells.

AQMD is the air pollution control agency for Los Angeles, Orange and portions of San Bernardino and Riverside counties.

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