

Easy access to 'Hydrogen Highway'
City opens cleaner-fuel pump
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BURBANK - At first glance, the fuel of the future doesn't look so different from gas of the present: There's a pump, a hose, a nozzle.

But at this corner of the city of Burbank maintenance yard is the San Fernando Valley's first hydrogen fueling station and another link in Gov. Arnold Schwarzenegger's "hydrogen highway," a network of stations slated to serve thousands of high-tech vehicles by 2010.

Air-quality agencies and automakers have embraced hydrogen as the next big thing in fuel, capable of powering zero-emission cars and reducing the nation's dependence on foreign oil.

While mass-marketed hydrogen fuel cell cars are perhaps a decade away, local governments are already investing in hydrogen infrastructure.

"I don't want to be a laggard, I want to be a leader," Burbank City Councilman Todd Campbell said. "If this is where we're going to go, let's do it."

A longtime clean-air advocate, Campbell pushed Burbank to take advantage of grants and become one of the first cities to install a hydrogen fueling station for city vehicles - one that eventually will be open to the public.

Burbank teamed with the South Coast Air Quality Management District, which has spent \$7 million to develop five hydrogen stations and convert 30 hybrid vehicles to use hydrogen instead of gasoline. The hope is that someday soon Southern Californians can pump their cars full of hydrogen and drive away with virtually no tailpipe emissions.

"We're proving the technology can be applied in a large fleet situation and proving to drivers that this fuel is not some far-off, space-age fuel. It's something they can use today," said Matt Miyasto, the AQMD's technology demonstrations manager.

So far, roughly 60 hydrogen cars are based in Southern California.

About half are hydrogen hybrids and the others are demonstration vehicles leased to government agencies.

However, hydrogen still presents big challenges.

Fueling stations can make hydrogen from water, breaking down the components of H₂O. But some energy-industry experts warn that hydrogen costs about \$10 a gallon to produce, primarily because it takes a lot of electricity to separate hydrogen from oxygen in water molecules.

Also, automakers have struggled to develop a hydrogen car that can get mileage comparable to a gas-fueled vehicle.

Some environmental groups also accuse government agencies of investing too much money in technology that consumers won't be able to use for a decade, rather than funding zero-pollution, electric cars that could be cruising L.A.'s freeways today.

"With the amount of money the government is putting into hydrogen, if we put that into photovoltaic electric (electric-car drivers can plug into chargers powered by solar panels) and plug-in hybrids, we could end our dependence on foreign oil today," said Stephanie Barger, executive director with Earth Resource Foundation in Costa Mesa.

Just a few years ago, electric vehicles were seen as the wave of the future.

The Los Angeles Department of Water and Power developed the nation's most aggressive electric vehicle infrastructure program in the late 1990s and installed more than 500 charging stations before California air regulators and automakers pulled the plug on electric-vehicle requirements.

Now the DWP has a small hydrogen station for the city's five hydrogen cars. But the utility is also making a push for the plug-in hybrid, which has a larger battery that can be charged overnight and doesn't have to rely on the gas engine.

"You can basically use all electric and none of the gasoline engine, but you can still use the gasoline engine if, on the weekend, you go up to the mountains," said Bill Glauz, DWP manager of renewable and emerging technology.

AQMD and state officials said they are also funding demonstration vehicles using natural gas, biodiesel and hybrid engines.

However, they said, hydrogen appears to be the eventual replacement of petroleum. And, perhaps more important, automakers are putting their research dollars into hydrogen fuel cells.

"Carmakers are very optimistic about fuel cells, which is important because they were pessimistic about batteries. They're willing to spend the money (on research)," said California Air Resources Board spokesman Jerry Martin.

With hydrogen on the horizon, the AQMD is testing hybrids converted to hydrogen that can hit the road immediately.

Irvine-based Quantum Fuel Systems Technologies WorldWide Inc. converted Toyota Priuses that run on gasoline and electric batteries to use hydrogen instead of gas. The cars can travel 80 miles per fill. They emit low levels of smog-forming pollutants but no carbon monoxide, carbon dioxide or hydrocarbons.

Burbank paid \$350,000 to buy five hybrids and to cover operation costs of the station. The AQMD paid \$1.4 million to convert the Priuses to hydrogen and pay for the fueling station, which converts water to hydrogen on site.

Burbank Assistant Public Works Director Bob Van Hazelen occasionally drives one of the hydrogen hybrids and, so far, he said, the car is smooth and quiet and fueling is fast and easy.

"Everyone has accepted them quite well," he said. "I can see this being mainstreamed very easily."

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