

After failing to reach goals, California attempts to jump-start its 'Hydrogen Highway'

Paul Rogers, Bay Area News Group, 3-25-12

Eight years ago, former Gov. Arnold Schwarzenegger drove a hydrogen-powered Toyota Highlander to UC Davis and, with TV cameras running, promised to build a "hydrogen highway" to help usher in a green revolution in California.

Schwarzenegger signed a plan to build 50 to 100 hydrogen fueling stations by 2010 with state funds and money from oil companies. The plan was mostly hype: Schwarzenegger had announced it without having any binding agreements from oil companies -- and they backed out. Today, only six hydrogen fueling stations statewide are open to the public.

But now, with less fanfare, Gov. Jerry Brown's administration is trying to jump-start the whole effort with a new strategy: forcing oil companies to build the hydrogen stations.

The new approach has environmentalists cheering and Big Oil threatening to sue. And the fate of hydrogen-powered vehicles in California, and likely the entire United States, hangs in the balance.

"The original partnership was a one-sided partnership," said Mary Nichols, chairwoman of the California Air Resources Board. "The oil companies refused to put up their share. You can't have a partnership with only one side."

In January, the powerful air resources board passed a sweeping set of new "advanced clean car rules" that drew international attention. The rules require automakers to reduce smog-forming emissions 75 percent by 2025 for new cars sold in California. They also require automakers to sell 1.4 million electric, plug-in hybrid and hydrogen vehicles by 2025 -- 15 percent of all new cars sold in California that year -- or face steep penalties.

'Meat on the bones'

The auto industry endorsed the rules, ending years of legal battles. But buried in the fine print was another plan, one that mandates the state's biggest oil companies to build hydrogen fueling stations once the car companies sign binding commitments to build 10,000 hydrogen-powered vehicles for sale in California.

"We tried to put some meat on the bones," Nichols said. "We told the people who have a monopoly on our transportation fuels that they have to provide some of the fuels we need for this new generation of cars."

The automakers are now saying they can hit the 10,000 target by 2015. They have until August to commit to that goal -- and will face fines if they don't meet it.

The oil companies, meanwhile, are in open revolt.

"Our members support diversifying our energy portfolio, but doing so in ways that are consistent with consumer expectations, sound science and market demand -- not government mandates," said Tupper Hull, a spokesman for the Western States Petroleum Association, an industry trade group.

Large oil companies would be required to build roughly 20 hydrogen fueling stations, at a cost of about \$2 million each, every time the auto companies commit to putting 10,000 hydrogen vehicles for sale in any one region.

The first region is expected to be the Los Angeles area, where all six existing hydrogen stations are operating. Although a handful of stations are expected to open in the Bay Area -- one at AC Transit in Emeryville this year and one at San Francisco International Airport in 2013 -- the Bay Area probably won't have a significant number for five years or more. Eventually, hundreds of stations could be required statewide.

The petroleum association claims the state is overstepping its authority and illegally taking private property. Oil companies also insist that they simply don't want to be in the hydrogen business.

In a recent letter to the air board, John Braeutigam, vice president for strategic development of Valero, said the rule would force refiners to "directly compete with their own core business." He added: "As the nation's largest independent refiner, and second-largest producer of corn ethanol, Valero objects to being forced to fund its own demise."

Nichols and environmental groups say California needs to continue to lead the U.S. in reducing smog, greenhouse gases and reliance on foreign oil. They note that although electric car sales are finally taking off with the Nissan Leaf and other models, hydrogen vehicles have more range. The Honda Clarity, for example, which 25 people in Southern California are leasing for \$600 a month in a trial program, goes 240 miles on a full tank of hydrogen, at a cost per mile roughly the same as gasoline.

"This is about providing California a future beyond gasoline," said Simon Mui, a scientist with the Natural Resources Defense Council.

Although Shell and Chevron did some limited hydrogen work, Schwarzenegger's original plan failed to meet its goals because oil companies decided they didn't want to partner with the state to build stations. In addition, Democrats in the Legislature approved only half the \$50 million in planned funding to help build them, then put strict new standards on the stations, raising costs by requiring that one-third of their electricity come from renewable sources. Then, President Obama slashed federal spending on hydrogen programs, cutting it in half from the levels under the Bush administration.

Lack of demand

Air board officials now predict 50 stations will be open statewide by 2016. The one that will be run by AC Transit in Emeryville is a \$10 million project funded by state and federal grants and maintained by Linde, a German gas company. It already powers 12 hydrogen buses and will soon be open to the public.

As recently as 2008, there were 24 hydrogen stations in California. But many closed because of the lack of demand and changing technology.

And the UC Davis station where Schwarzenegger launched the whole "hydrogen highway" idea?

It's also shuttered.

Despite the stumbles, supporters of hydrogen vehicles note that all the major auto companies have now committed to building them in the next five years. And once the stations are there, the supporters say, cars

powered by hydrogen will finally take off.

"It's never been done before," said Steve Ellis, a spokesman for Honda. "You learn as you go. It's a slow collaborative process that takes time. But with each success, you build on it -- and it gets better."