

Hydrogen is regaining its status as an alternative fuel

Robert S. Walker: I am a public-policy guy, a former member of the United States Congress who specialized in science and technology policy while I served, from 1977 to 1997. Some of my research-and-development agenda involved automotive programs, most particularly the Partnership for a New-Generation Vehicle.

As a senior member of the Science Committee in Congress and someone the industry knew was interested in cars, I was invited to Detroit in 1993 to review the early concepts for designing a new vehicle. The briefing centered largely on plans for significant weight reduction and the switch to hybrid or, optimally, fully electric cars. But I saw no proposals for hydrogen-fueled vehicles _ either internal-combustion or fuel-cell. Hydrogen was just not viable for a car that could be built within the next decade, I was told.

I was not the most receptive audience for that message, for several reasons:

First, a hydrogen-based energy economy seemed logical to me in a public-policy sense. The finite supply of petroleum would ultimately sort out economically in a way that made other alternative fuels, such as hydrogen, quite attractive.

Second, it was clear that hydrogen's status as a fuel resource of infinite supply _ it is the most common element in the universe _ made economic sense.

Third, I was very familiar with the use of hydrogen in America's space program. From rockets to fuel cells, hydrogen had been used extensively as an energy source in space exploration. Therefore, while the expense of those applications was significant, the reality of power from hydrogen was on display for the world to see.

Fourth, the environmental advantages of hydrogen use could not be easily disputed. Whether it was burned or used in fuel-cell applications, the by-product was water.

The hydrogen economy that I envisioned went far beyond transportation options. The potential to switch residences and businesses from their ties to centrally based power through utilities to diversified power through ownership of individual energy sources was an exciting prospect. With hydrogen, all of the options that people have found so attractive in the information arena - access through individual PCs, for example - would become relevant in the energy arena too.

At the time, the political reality was that the case for hydrogen had yet to be made. The public associated hydrogen with the Hindenburg disaster and considered the option too dangerous to discuss. And government programs on hydrogen, particularly in the United States, were small and ineffective, while other alternative-fuel concepts, such as solar, had done a much better job of building funding streams for their work.

Hydrogen had little backing and little credibility within government circles, and therefore it would have been risky for a government-sponsored program such as the New-Generation Vehicle program to move aggressively toward that solution.

Times have changed. At present, there is a growing enthusiasm about the potential for overcoming those problems. But there are also significant hurdles to be overcome before consumer-ready cars that run on hydrogen can be produced and sold:

- Expense. The costs of producing hydrogen vehicles must come down significantly.
- Safety. There is a lingering concern that hydrogen is inherently dangerous. Those perceptions must be countered with safety systems and sensor technologies that assure the consumer.
- Storage. Ways to store hydrogen on-board vehicles must be developed.
- Infrastructure. The biggest problem is to overcome any local resistance and create a system that serves a wide-spread fleet of hydrogen vehicles.

But the problems I have outlined are typical of those that face any new technology. None of them seems to be a show-stopper. And the upside for the automotive industry is so enormous; one has to believe that the drive to solve the problems will be intense.

I see hydrogen cars as an answer to many of the cultural and societal pressures now facing the automotive industry. Hydrogen solves most of the serious environmental concerns surrounding the use of automobiles. With environmental problems relieved, the political efforts to move people out of individual cars into mass transit will be lessened. The vehicles produced can be more adaptable to urban concerns. In other words, by adapting to the hydrogen economy, the automotive industry can put its most virulent critics on the defensive and assure the viability of the industry for decades to come.

Adapted by the Minneapolis Star-Tribune (10/4/2000) from Robert S. Walker's speech, delivered recently in Dublin, Ireland, at the International Symposium on Automotive Technology and Automation. Former Rep. Walker (R-Pa.) is chairman and CEO of the Wexler Group, a government affairs firm in Washington, D.C., and technology adviser to GOP presidential candidate George W. Bush.