



The Hard Sell for Fuel Cell Technology

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In our world today there is a very important number — the cost of a gallon of gas — and, like the sun, it seems to be rising every day. In light of this trend, many are hoping for a more economical — and environmentally friendly — fuel alternative.

In recent years, we have seen the introduction of vehicles powered by vegetable-based biodiesel, batteries and solar power, but the majority of people still drive gasoline-powered vehicles. In addition to being increasingly costly, these vehicles are creating greenhouse gases, which are polluting the air and contributing to the warming of our planet.

Imagine, though, a fuel both immune to rising gas prices and less harmful to the environment. This fuel is hydrogen, and it's on the way. According to Jon Slangerup, a fuel-cell-technology executive, it may arrive on the market as early as 2010, and when it does, California will be ready for it.

Slangerup is the CEO of Stuart Energy, a company that is building the economy for fuel-cell technology. This summer he stopped in at the Marin County Fair as part of a campaign to increase awareness.

"We had hundreds of people come through," Slangerup said, "and I would say that the vast majority of people cannot wait for this to happen."

If people are truly this receptive to fuel cells, then the days of cleaner air may be coming. By the time the fuel-cell vehicles become available, the economy will be ready to support refueling, and there seem to be very few, if any, disadvantages to driving them.

But what, you may be wondering, is a fuel cell? The process is, in fact, fairly simple. First, water is separated into its basic components of hydrogen and oxygen. This is done by inserting an electrolyte into water, stimulating a steady electric current. The hydrogen is collected and stored and the oxygen is released into the atmosphere. The hydrogen is then put into the fuel cell, where the process is effectively reversed in powering the car. The hydrogen is forced through a membrane, which strips the electrons away. The electrons then travel through an external circuit — where their energy is harnessed — and rejoin the atom. This hydrogen then bonds with oxygen in the atmosphere to form water, which is released as vapor.

This system is not only completely clean and effective, but when compared with gasoline power, is more efficient. The implications for air quality are promising.

"It's a completely emission-free alternative to using fossil fuels for the future of energy," said Slangerup.

Unfortunately, the technology has yet to be perfected.

One concern currently being addressed by fuel-cell researchers is the risk associated with storing hydrogen for refueling purposes. Still, storage of hydrogen will probably be safer than storing gasoline, which is quite hazardous.

Another issue delaying the adoption of fuel-cell technology is that some states may not have a hydrogen infrastructure yet. This issue will hopefully be resolved within a decade. It will, however, take some time to fully establish the infrastructure nationwide.

Even with these drawbacks, though, fuel cells promise to change the way we power our cars. By 2010, we may be getting ourselves off gasoline, driving vehicles that are no longer subject to its rising costs.