

Advocate: Hydrogen is the future of energy



Bob Brown, shown in a Hampton Roads Hydrogen van in Hampton on Thursday, Nov. 15, heads up Hampton Roads Hydrogen, a group that's pushing for development of a "hydrogen economy" -- greater use of hydrogen as a fuel source. (Sangjib Min, Daily Press / November 15, 2007)

By **PATRICK LYNCH** | 247-4534

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With oil at \$90 a barrel and concerns mounting about greenhouse gases and climate change, the prospect of hydrogen serving as the energy source of the future is on the minds of engineers, environmentalists and the president alike.

Will Hampton Roads be there when a hydrogen economy develops? Bob Brown is the chief spokesman for hydrogen in Hampton Roads. He also is selling hydrogen generators that run in tandem with a gasoline engine. The generators boost efficiency and cut down on harmful emissions. You might see his Hampton Roads Hydrogen van around the area.

A former contractor, Brown decided about five years ago that the country needed a change in its energy economy. Since then, he's lobbied the General Assembly for more education about hydrogen in Virginia schools and worked to create more support for a "hydrogen economy."

Right now, hydrogen fuel cell vehicles and hydrogen fueling stations are a rarity, held back by expensive (but declining) production costs. People like Bob Brown hope to see that change.

Q: What is hydrogen?

A: Hydrogen is the most abundant element in the universe. It makes up 75 percent of all matter. That's one of the reasons I like hydrogen, there's enough for everybody.

You can make it out of anything. You can reform it out of natural gas, you can use coal gasification, nuclear, wind, biomass — there's numerous ways to make it (into a usable energy source).

Q: Why push it here in Hampton Roads?

A: We've got to start somewhere. A fuel cell vehicle is 2.2 times more efficient than an internal combustion engine. They're out there, but we don't have the infrastructure. The nearest station to Virginia is up in Anacostia.

On the "hydrogen highway" in California, they have seven fuel stations. There are plans for the I-95 corridor, with fueling stations from Florida to Maine. Because the hydrogen economy is coming. It's a matter of political will as much as the economy.

Q: Is it dangerous at all?

A: Actually it's safer. People always say: What about the Hindenburg? That's the No. 1 question I get. Hydrogen, when it burns, you can barely see it. The Hindenburg was such a voracious fire, it had to do with the membrane it was made out of and the doping, the glue. The glue had the same consistency as modern rocket fuel.

Q: It's been four years since President Bush surprised people and talked about hydrogen in his State of the Union speech. Do you think that made an impression on people?

A: We were cheering. We thought it was the right way to go. Look at what oil's done in four years. It's gone from \$25 a barrel to almost a \$100. And I don't see it getting any better.

We're in huge competition with China's economy, India's economy, Indonesia's economy. They are growing by 15 percent a year. And we're all in competition for that same barrel of oil.

Competition is good. That's one of the reasons I support hydrogen. I think it will help keep the cost of oil down.

Q: Are the obstacles to a hydrogen economy right now research and development-related or market-related?

A: I'd say market and education. We've been pushing education because people don't know.

If you look at Department of Energy goals, by 2007 they had a long-range goal that general assemblies across the country would have a beginning understanding, and by 2009 educators, and by 2011 the general public.

Q: How did you decide this was going to become your issue?

A: About five years ago I did some soul searching and really thought we needed to do something.

It seemed to me hydrogen was the next big thing on the horizon. With hydrogen being 75 percent of all matter, there's plenty for everybody. We're not going to be sending our troops over to defend energy lines. If we get full immersion in a hydrogen economy, I don't see those issues.

Q: Do you see it as a transitional energy source, or a few decades from now, will this be a primary energy source?

A: If you look at long-range predictions, 2050 is the magic year. When I first became involved I was told in 2015 hydrogen would be comparable to gasoline in cost. Really, it's almost now.

Next year, the cost of producing hydrogen will be comparable to gasoline. So really the numbers I'm hearing now are becoming 2035 and 2050. Hydrogen will become the predominant energy carrier in the world.

Biodiesel, ethanol. These are our transitional fuels. Hydrogen is our long-range goal. That's what we're moving toward.

Q: If hydrogen is getting close to the same production costs as gasoline, what's keeping it from being a primary fuel source now?

A: Infrastructure. We do not have that many fueling stations.

Q: Do you ever run into people who think you're trying to sell them science fiction?

A: Early on, when I first got involved, I was told there was no interest for hydrogen in Virginia. This was four years ago.

People that wouldn't even talk to me three years ago, now I get questions from them: "What's going on today, Bob?"

It's been amazing, the change. A lot of it is the direct result of the high cost of energy these days.

Q: True or false: Thirty years from now, most cars on the road will run on hydrogen?

A: True.

Bob Brown

Age: 52

Family: wife, Pamela

Occupation: CEO, Hampton Roads Hydrogen, <http://hamptonroadshydrogen.com/>

Biggest influence: Paul Williamson, of the University of Montana, who wrote that state's original hydrogen legislation.

Factoid: Before Brown began campaigning for a hydrogen economy in Hampton Roads, he worked as a general contractor.

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