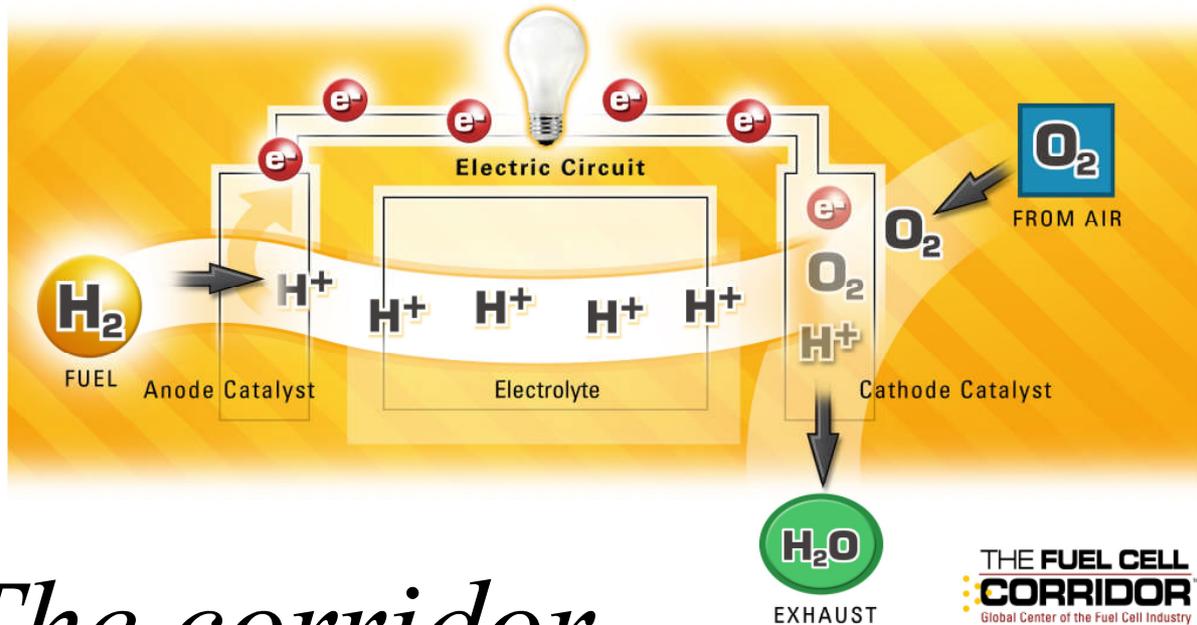


How a Fuel Cell Works



The corridor

Fuel cells drive business in Ohio

By Larry Ringler
Tribune Chronicle

HOWLAND - Long known for its "old-tech" automotive industry, Ohio entrepreneurs - including Bruce Bille (pronounced Bill) in Howland - are helping to write the map to guide the state down the long and winding road to the fuel cell economy.

"People in the industry are well aware of Ohio's presence in fuel cells. California and other states are envious of Ohio," said Bille, president of [Technical Staffing Professionals](#), a Howland-based firm that finds workers with technical skills for fuel cell companies.

Proof of Ohio's influence in the fledgling industry could be found in late October, when the state had what Bille called "definitely the most presence of any state" at the industry's major event, the Fuel Cell Seminar & Exposition in Phoenix. Of 175 exhibitions, Ohio had 12, he said.

Fueled by money supplied by former Gov. Bob Taft's Third Frontier economic development plan, along with the state's formidable manufacturing reputation, Ohio attracted four fuel companies in 2007, including two from California, Bille said.

"Fuel cells require a lot of machining, molding, ceramics and polymers," he said, adding that programs at Ohio State University, University of Toledo and other major universities also are drawing cards.

The result is the Ohio's "Fuel Cell Corridor," clusters of about 100 businesses ranging from startups to famed British automotive company Rolls Royce concentrated in northeast Ohio but also running through Columbus to Dayton and Cincinnati.

Another company devoted to fuel cell technology is [Catacel Corp.](#) in Garrettsville, which is developing components for the fuel cell industry, along with reactors for commercial hydrogen production.

THE FUEL CELL
CORRIDOR
Global Center of the Fuel Cell Industry

Fuel cells have grown in importance as a clean energy source for the future. The cells create electricity through an electrochemical reaction of the hydrogen fuel, producing only water as a byproduct.

Bille said he started his headhunter company in 2001 after he became interested in fuel cells. At the time, he was finding electrical engineers who were skilled in such fields as industrial controls and robotics. He was living in Howland but working in Hudson.

Warned about the difficulty of making a living off fuel cells, Bille believed he was in on the ground floor of a major new industry. He said he learned the key companies and people, and "now it's going great guns."

Companies tell Bille the kind of worker they need, such as an electrochemical engineer who knows how to build an electrode membrane. Working with his five account executives from Cleveland to Pittsburgh, he then runs the criteria through his database that covers seven years.

Bille said it helps that Trumbull County has a ready supply of engineers, especially with downsizing at the Warren area's Delphi Packard Electric, one of the world's leading makers of electrical wiring harnesses for vehicles.

The area also has a strong manufacturing base and low cost of living, as well as a desirable location between active fuel cell operations in Cleveland and Pittsburgh, he added.

Bille acknowledges that the fuel cell industry must overcome obstacles before becoming a mainstream energy source. A cost-effective way to make hydrogen has yet to be found because natural gas or other fossil fuels often are used in the process.

Another problem, he said, is fuel cells for vehicles require a network of refueling stations that doesn't exist and will require massive spending to build.

But Bille noted fuel cells have other uses besides transportation. Stationary cells can provide power for houses, buildings and stores, he pointed out.

Recent gasoline prices, plunging from their summer peak of \$4 to \$5 a gallon, make getting a return on investment more iffy, although Bille confidently said, "Gas will go back up."

The weakening economy is generating headwinds to the young industry. Bille said investors and funding for development companies aren't available. Two fuel cell companies in other states have announced layoffs, but he said the need to develop fuel cells isn't going away.



On-board fuel cell monitoring system of Chevrolet Equinox Fuel Cell Vehicle.



"I hope the government will continue to support the industry because we have to do it now," he said.

Profile: Bruce Bille

- A native of Ashland, Bruce Bille graduated from the U.S. Naval Academy in 1982 with an engineering degree, then spent 6 1/2 years on sea duty as an engineer and weapons officer.
- After the service, he spent two years with defense contractor General Dynamics in California. Then he took over an 11-state sales area running west from Indiana for TRA Coatings, a Cortland company that sells an anti-stick rubber mold release substance.
- He moved to Howland in 1992 when he became sales manager for TRA and founded his Technical Staffing Professionals recruiting firm in 2001.