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It was called the Electrovan, the automotive industry's first attempt at making an automobile powered by a hydrogen fuel cell — a technology now embraced as the power train of the future.</p> <p>The prototype resembled the mostly forgettable 1966 GMC Handivan, which it was, on the outside. Inside, there was hardly room for the front seats. Five hundred fifty feet of piping were jammed alongside two tanks, one for oxygen and one for hydrogen. Both were chilled to hundreds of degrees below zero, and highly flammable.</p> <p>When journalists got a glimpse on a sunny October day in 1966, they weren't allowed behind the wheel. The Electrovan was "a nightmare of complexity," Dr. Marks said then. It contained enough platinum to buy a fleet of regular vans.</p> <p>G.M. executives decided the technology was not feasible. They also decided G.M. didn't have enough room to preserve this prototype.</p> <p>"I had tried to get it into the Smithsonian, because I said, 'You know, this is an incredible vehicle,'" recalled Dr. Marks, who at age 72 is now retired and lives in the Detroit suburb of Bloomfield Hills. "They had never heard of a fuel cell."</p> <p>Nobody revisited the technology until the industry returned to it, en masse, in the 1990's. The Electrovan had been long forgotten; DaimlerChrysler even claimed for a time to have built the first fuel-cell car. Today every major automaker is developing fuel-cell cars. Just last week, Spencer Abraham, the Secretary of Energy, laid out a lengthy report on what is needed to get fuel cells on the road. And G.M. is predicting it will mass produce fuel-cell cars by 2010.</p> <p>Skeptics abound, including Dr. Marks. Some doubt the industry's scientific prognostications; some see the fuel cell as Detroit's excuse to defer any short-term gas mileage improvements. Others worry about the enormous complexity of retrofitting the nation's 176,000 filling stations</p>	<p>GO TO MEMBER CENTER LOG OUT</p> <p>Welcome, hydroquy</p> <p><input type="checkbox"/> E-Mail This Article</p> <p><input type="checkbox"/> Printer-Friendly Format</p> <p><input type="checkbox"/> Most E-Mailed Articles</p> <p><input type="checkbox"/> Reprints</p> <p><input type="checkbox"/> Single-Page Format</p> <p>TIMES NEWS TRACKER</p> <table border="1"> <thead> <tr> <th>Topics</th> <th>Alerts</th> </tr> </thead> <tbody> <tr> <td>Automobiles</td> <td><input type="button" value="Create"/></td> </tr> <tr> <td>Fuel</td> <td><input type="button" value="Create"/></td> </tr> <tr> <td>Environment</td> <td><input type="button" value="Create"/></td> </tr> <tr> <td>General Motors Corporation</td> <td><input type="button" value="Create"/></td> </tr> </tbody> </table> <p>Create Your Own Manage Alerts</p> <p>Take a Tour</p> <p>Sign Up for Newsletters</p>  <p>Snowy Owl, Plate 121</p> <p>Buy Now</p>	Topics	Alerts	Automobiles	<input type="button" value="Create"/>	Fuel	<input type="button" value="Create"/>	Environment	<input type="button" value="Create"/>	General Motors Corporation	<input type="button" value="Create"/>
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with hydrogen, not to mention tearing up the car industry's manufacturing infrastructure.

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"Power plants get developed over decades, not a few years," said Dr. Marks, who still follows fuel-cell developments and is chairman of the board of trustees of Altarum, a consulting and research firm based in Ann [Arbor](#), Mich.

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He said such a complex technology must first be tried in simpler applications, like powering commercial or government vehicle fleets. Carmakers have just begun such ventures.

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"Anything 10 years out in this industry is a hope," Dr. Marks said. "All the time I was in the auto industry, gas turbines were going to be in automobiles in 10 years, and that went over a period of 30 years. When auto people say 10 years, they mean they hope 10 years. We don't know."

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From its infancy, the auto industry has explored alternatives to the internal combustion engine. Sometimes the hurdles came down to the simplest problems. In the 1960's, Dr. Marks searched out Abner Doble, founder of the long defunct Doble Steam Car Company, then in his 90's. Dr. Marks believed Mr. Doble had built the most sophisticated steam car and wanted to know why steam had lost the battle to gas and electricity. "Craig," Mr. Doble told him, "water freezes."

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Battery-powered cars date from Thomas Edison's day. But the same old problems hinder them now as a mass market product — batteries take too long to recharge and require recharging too often.

Dr. Marks saw a solution in the space race. NASA was using fuel cells to power the inside of Gemini spacecraft. Essentially, the cells strip electrons from hydrogen atoms and use them as an electrical current, then reassemble the hydrogen and combine it with oxygen to form water. The cells provided electricity and water astronauts could drink.

Would the prospects for electric cars be different if they could produce their own electricity?

The Electrovan project became a mini-moonshot, but G.M. then was corporate America's 900-pound gorilla, a [Microsoft](#) of manufacturing in an era when starched white men in lab coats could solve anything.

The project started with a new battery-powered car in the body of a Corvair, dubbed Electrovaair. Then Dr. Marks' people built a fuel cell system far too big to fit into the car. His team scaled it down enough to put into a van.

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