



## ***What automakers are saying about fuel cell vehicles...***

### ***Aston Martin***

**Dr. Ulrich Bez, Aston Martin CEO:** "The technology for [electric cars] will not become truly usable until at least 2020. Real-world driving will highlight their weaknesses... It is not something Aston Martin is working on, and it will not represent a true alternative to the combustion engine for a long time"....Dr. Bez reportedly called for the automotive industry to focus its efforts on the fuel cell and suggests that governments should invest resources for their development. <http://green.autoblog.com/2009/09/23/aston-martin-dismisses-fully-electric-cars-calls-for-fuel-cells/> (9/23/2009)

### ***Daimler***

**Dieter Zetsche, Daimler CEO:** "The chances further down the road seem to me better on the fuel-cell side than on the battery-electric side."....Hydrogen, he said, beats electric batteries at moving cars long distances without refueling. Hydrogen can also power big, roomy sedans much more readily than batteries. [http://www.businessweek.com/magazine/content/09\\_40/b4149000135061.htm?chan=globalbiz\\_europe+index+page\\_top+stories](http://www.businessweek.com/magazine/content/09_40/b4149000135061.htm?chan=globalbiz_europe+index+page_top+stories) (9/22/2009)

### ***Ford***

**Gerhard Schmidt, chief technology officer for Ford's research and advanced engineering:** "I'm still convinced that there's a place for fuel cell technology when you look to the future where fossil fuels are not available in the quantity that is needed and battery technology only has limited mileage." [http://news.cnet.com/8301-11128\\_3-10432371-54.html](http://news.cnet.com/8301-11128_3-10432371-54.html) (1/11/2010)

### ***GM***

**Alan Taub, Vice President of Research and Development:** "With battery technology as it currently stands, extended-range vehicles that are larger than the Volt - luxury saloons, trucks and SUVs - aren't really possible; they would simply be too heavy to be efficient. For those types of cars, fuel cells and biofuels are the future. " <http://green.autoblog.com/2010/04/22/gms-randd-head-says-voltec-powertrain-not-suitable-for-vehicles-b>

**Britta Gross, Hydrogen and Electrical Infrastructure Commercialization manager:** "...hydrogen gets you certain performance benefits that you don't get from other alternative fuels. The advantages are too big to discard. We can't just assume batteries are going to solve all our problems." <http://green.autoblog.com/2009/08/31/gms-britta-gross-promotes-both-sides-of-the-hydrogen-ev-fence/> (8/31/2009)

**Charles Freese, Executive Director of Fuel Cell Activities:** "...fuel cell vehicles could be "commercialized" by 2015, and cost "competitive" by 2022. "It hits this tipping point in a roughly 2022 timetable," he said. <http://www.detnews.com/article/20090925/AUTO01/909250352/1148/AUTO01/Hydrogen+s+prospects+for+autos+refreshed> (9/25/2009)

### ***Honda***

**Robert Bienenfeld Senior Manager, Environment and Energy Strategy American Honda Motor Co., Inc.:** "Fuel-cell electric vehicles are very promising because their well-to-wheel CO<sub>2</sub> profile is very good, and compare very favorably against battery electric vehicles and plug-in hybrid electric vehicles, since the US energy grid is so dirty. Even when the US grid is cleaned up, fuel-cell electric vehicles look quite good. Fuel-cell electric vehicles have ranges similar to gasoline vehicles—the [Honda] Clarity has a range of roughly 240 miles." [http://businesscenter.jpdc.com/JDPACContent/CorpComm/pdfs/DriveGreen2020\\_102710.pdf](http://businesscenter.jpdc.com/JDPACContent/CorpComm/pdfs/DriveGreen2020_102710.pdf) (10/27/2010)

### **Takanobu Ito, Honda CEO:**

"I think the ultimate eco car is a fuel cell car." <http://www.detnews.com/article/20100121/AUTO01/1210362/1148/auto01/2-jobs-work-for-Honda-president> (1/21/2010)

"We continue to believe that a fuel cell electric vehicle is the ultimate solution to reduce CO2 emissions. A fuel cell car IS a full electric vehicle. But rather than use electricity from the grid, a fuel cell vehicle generates electricity on board and refills more quickly. The development cost must come down and there must be a major expansion of the hydrogen fueling infrastructure. But make no mistake. As a vehicle, the Honda FCX Clarity is ready now. Further, Honda is unique in making long-term investments to develop the refueling infrastructure for alternative fuel vehicles.

This month, we will begin operation of a next-generation solar hydrogen station at our Los Angeles R&D center. This compact system was designed for daily home refueling of a fuel cell electric vehicle. Honda engineers were able to eliminate the compressor entirely to greatly reduce the size of the system to fit in the user's garage. The potential of a solar hydrogen station is one reason a fuel cell electric vehicle is the ultimate eco-car – the best path to reduce CO2." <http://green.autoblog.com/2010/01/12/honda-ceo-takanobu-ito-announces-that-acura-will-add-a-hybrid/> (1/12/2010)

- "The performance of batteries is evolving and there are possibilities. But the energy that can be stored is less than an internal combustion engine can produce, and with current battery technology electric vehicles are city commuters."
- "Honda has, from an early stage, worked on fuel cell vehicles. Battery EVs are heavy, not fun to drive and aren't reliable, and when it comes to cars lighter is better. FCVs are going in that direction."
- "We can do cost reduction and mass production of the technology. It's simple to produce fuel cells; it's the chemicals they use that cost money, along with the precious metals. But we can cut the cost of those, too." <http://www.dailytech.com/Honda+CEO+Says+Clean+Diesel+Too+Tough+Salespeople+to+Blame+for+Image+Problems/article17101.htm> (12/11/2009)

He went on to say that while batteries are evolving, he didn't believe they would ever get to a stage where their performance would be acceptable as the primary energy carrier. Instead he said that "people would become more aware of the limits of BEVs" and come back to hydrogen fuel cells. <http://green.autoblog.com/2009/10/22/honda-ceo-people-will-embrace-fuel-cells-when-they-realize-batt/> (10/22/2009)

"Over the long term, the advancement of electromotive technologies is an important factor for the reduction of CO2 emissions. Among potential solutions, we believe that the fuel cell electric vehicle will be the ultimate form for automobiles in the future as it has advantages such as zero CO2 emissions in use, can travel considerable distances without refueling and can be quickly refueled." <http://www.theautochannel.com/news/2009/10/21/482084.html> (10/21/2009)

"Although batteries are evolving, I don't think they can catch up with fuel cells."

[http://www.businessweek.com/magazine/content/09\\_40/b4149000135061.htm?chan=globalbiz\\_europe+index+page\\_top+stories](http://www.businessweek.com/magazine/content/09_40/b4149000135061.htm?chan=globalbiz_europe+index+page_top+stories) (9/22/2009)

**Takashi Moriya, General Manager for Technology Research:** "Fuel-cell cars will become necessary...We're positioning it as the ultimate zero-emission car."

<http://www.bloomberg.com/apps/news?pid=20601087&sid=afMZ1CSLb2EQ#> (8/12/2009)

### **Hyundai**

**Steve S. Yang, Hyundai President and Chief Executive:** "Our ultimate goal is to build fuel-cell vehicles - and make them available from 2015. Of course, we need EVs and we need hybrids but these are an intermediate step for FC vehicles. The point of [Hyundai] building the EVs is to get proven technology for fuel cell [vehicles].... By 2020, we think we can reduce the price gap between fuel-cell cars and gasoline cars." <http://www.news-mail.com.au/story/2010/11/09/green-cars-divide-industry/> (11/9/2010)

### **Nissan**

**Carlos Ghosn, head of Renault-Nissan:** For him, the only real alternative is fuel cell cars running on hydrogen.

