

# Toyota keen to avoid the mistakes of EV makers

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Toyota formally agrees to jointly develop fuel cell vehicles with BMW, essentially giving away its pre-production technologies to draw a potential rival into its fold. Will this technology sacrifice lead to market dominance in the future?

"This agreement squarely addresses the issues being faced today by the auto industry, and promises great things for the future of automobiles." These are the words of Toyota vice chairman Takeshi Uchiyamada, spoken with a sense of satisfaction at the January 24 signing of Toyota's joint development agreement with Germany's BMW.

BMW and Toyota executives celebrate agreement (Toyota vice chairman Uchiyamada second from left)

The joint research agreement covers four areas: (1) a fuel cell system that will be the key technology for a fuel cell vehicle; (2) a sports vehicle; (3) technologies to reduce vehicle weight; and (4) batteries with performance far superior to current lithium-ion batteries. Toyota sees the fuel cell system in particular as a vital basic technology for a new generation of vehicles to replace gasoline-powered cars, a developmental field in which there is fierce competition. "Moving forward, we will mutually disclose our technologies over the long term as we proceed with the collaboration," says Uchiyamada.

The European luxury carmaker BMW is partnering with Toyota, the Asian powerhouse with a full range of popular vehicles. From the standpoint of sales, the two hardly compete head to head. The hands they are playing are easy to read, but the implied "give and take" could be much more one-sided than planned. One Toyota insider sees the fuel cell system as Toyota's loss leader in the deal, and says, "It will likely be a case of Toyota giving away its technology."

In fuel cell vehicles (FCVs), a chemical reaction between hydrogen and oxygen produces the electric power that rotates the motor. The emissions are harmless water. Toyota started working on this technology in earnest in 1992 and succeeded in manufacturing in-house the fuel cell that serves as the power generator, along with the high-pressure hydrogen tank and other parts. Progress has been made on lowering costs and reducing both the size and weight of components. Toyota is preparing to bring the first mass-produced FCV to market in 2015; it will sell for around 5 million yen.

US automotive giant General Motors, along with Honda and other automakers, have been working on a fuel cell vehicle, but Toyota is thought to have a significant technological advantage over them in FCVs because it has focused exclusively on this technology, without getting sidetracked by electric vehicles. EVs, which are powered by lithium-ion batteries, have a range of about 200 km at present. Toyota's development team has set the bar at over 500 km, rivaling the gasoline engine, for new technology to power the next generation of vehicles. The FCV's range of 800 km easily quells the market anxiety that has kept EVs from building greater share.

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