

## **Ford Focus Fuel Cell Vehicle with Ford Automotive Replacement Parts at Parts Train**

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([PRWEB](#)) June 10, 2005 -- The Focus FCV is one of the industry's first hybridized fuel cell vehicles combining the improved range and performance of hybrid technology with the overall benefits of a fuel cell.

Using a fuel cell powertrain supplied by Ballard Power Systems, the world leader in proton exchange membrane (PEM) fuel cell technology, the FCV is hybridized with the addition of a nickel metal-hydride battery pack and a brake-by-wire electro-hydraulic series regenerative braking system. The fuel cell engine converts chemical energy into electric energy using hydrogen fuel and oxygen from air. The electric energy then powers the vehicle's electric drive motor, producing only water vapor and heat as by-products.

Just like Honda's Insight and Civic hybrids, the new battery 'assists' the main powerplant by adding extra power when accelerating or climbing hills, and is charged by regenerative braking system when braking or decelerating. Of course, the Civic and Insight use a small gasoline internal combustion engine instead of a fuel cell, but the principle is the same.

"This Focus FCV is the most sophisticated environmental vehicle Ford has developed," said Dr. Gerhard Schmidt, Ford Motor Company vice president, Research and Advanced Engineering. "As such, is a critical success in our long-term strategy to move toward high volume production of hydrogen powered cars and trucks."

The Focus FCV has onboard sensors, which constantly monitor the fuel cell stack, trunk and the passenger compartment. If trace amounts of hydrogen are detected, the system will warn the driver. If a slightly higher level is detected, the system will transition to a limited operating strategy and then begin shutting down vehicle operations.

Its new battery pack, regenerative braking system and improved hydrogen gas storage tank help increase the driving range of the four-passenger Focus FCV to between 250 km (160 miles) and 320 km (200 miles) - about 30% better than the previous version,

The new Hydrogen Storage Tank Technology in the Focus FCV stores four kilograms of hydrogen, which is equivalent to four gallons of gasoline. It also features an in-tank pressure regulator, which lowers the pressure so the gas leaves the tank at approximately 150 psi to work its way through the fuel cell.

Ford is working closely within the industry and with fuel providers to help develop government codes and standards for a hydrogen-fuelling infrastructure and to help improve the commercial viability of fuel cell technology by bringing all stakeholders together in an effort to eliminate barriers to mass production and implementation.

"The launch of this Ford fuel cell demonstration fleet, together with the previously announced DaimlerChrysler



deployments of cars, vans, and buses powered with Ballard's® fuel cells clearly demonstrates the strength and leadership of our fuel cell alliance," said Dennis Campbell, president and Chief Executive Officer, Ballard. "This unique collaboration between Ford, DaimlerChrysler and Ballard Power Systems is fielding the most extensive fuel cell vehicle demonstration ever undertaken.

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