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## TOYOTA MOVES A STEP CLOSER TO MASS PRODUCED FUEL CELL CARS



Toyota FCHV  
Issued 06/2005



FINE-N - A Possible Future Toyota Fuel Cell Vehicle  
Issued 06/2005

The dawn of a new age in motoring clicked a few minutes closer this week as Toyota announced its hydrogen fuel cell powered SUV has become the first such vehicle in Japan to acquire vehicle type certification under the Road Vehicles Act by Japan's Ministry of Land, Infrastructure and Transport (MLIT). Leases for the vehicle are to begin on 1 July.

The announcement comes within a week of Toyota revealing its intention to commercially market hydrogen vehicles by 2015. Toyota became the world's first car maker to market fuel cell vehicles in December 2002 with 11 cars leased in Japan and five in the U.S.

Fuel cell powered cars will replace the petrol or diesel engine with a hydrogen fuel cell - a method of making electricity from hydrogen gas with only water as the 'exhaust' product.

Throughout the development of fuel cell vehicles Toyota has been independently developing all major fuel cell system components, including

the all-important, electricity-producing fuel cell stack.

The type approval relates to a new and improved version of Toyota's Fuel Cell Hybrid Vehicle, the Kluger V. Data gathered during the use of the previous models was fed back into development, resulting in the new model, which features a fuel cell system with enhanced levels of reliability and durability.

The vehicle will be offered to such customers as national and local governments, and companies in energy-related fields.



## Main Features of the New Toyota FCHV

- The high-pressure hydrogen storage tank also features a high-pressure valve developed within the Toyota Group. This valve follows a new design that positions a solenoid shut-off valve inside the tank.

- The new tank meets the technical standard for compressed hydrogen automobile fuel tanks, established in March this year as a safety standard for high-pressure hydrogen, allowing the tank to be used for 15 years, compared to a previous three years.

Toyota is also active in applying its fuel cell technology to buses having conducted real-world verification tests with a fuel cell bus prototype operating within Tokyo's metropolitan public bus system (from August 2003 to December 2004). Toyota now has eight units of its FCHV-BUS transporting visitors between the Nagakute and Seto areas of the 2005 World Exposition in Aichi, Japan.

At the 2003 Tokyo Motor Show, Toyota displayed an example of what future fuel cell vehicles may look like with the FINE-N (Fuel cell INnovative Emotion - Next generation) concept vehicle. The Corolla sized FINE-N featured a maximised long wheelbase/short overhang design, ultra slim fuel cell stack and a powerful 25kW electric motor fitted to each wheel.

## New TOYOTA FCHV: Vehicle Specifications

### New TOYOTA FCHV

<b>Vehicle</b>	Overall length/width/height (mm)	4,735/1,815/1,685
	Weight (kg)	1,880
	Seating capacity (persons)	5
<b>Performance</b>	Maximum cruising range (km)*	330 (up from 300)
	Maximum speed (km/h)	155
<b>Fuel cell</b>	Name	Toyota FC Stack
	Type	Polymer electrolyte
	Output (kW)	90
<b>Motor Type</b>	Permanent magnet	
	Maximum output in kW (ps)	90 (up from 80)
	Maximum torque in Nm (kgm)	260 (26.5)
<b>Fuel Type</b>	Hydrogen	
<b>Storage system</b>	High-pressure hydrogen storage tanks	
<b>Maximum storage</b>	pressure (MPa)	35
<b>Battery Type</b>	Nickel-metal hydride	
<b>Lease price</b>	30-month lease (yen/month)	1,050,000

\* In the 10-15 Japanese test cycle; as based on TMC calculations