



Toyota Launches Its Sixth Hybrid Power Vehicle

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Alphard MPV debuts in Japanese market

Toyota's continued development of clean and fuel-efficient power systems has yielded the market launch of its sixth hybrid-powered vehicle, the Alphard Hybrid. A full-size MPV for the Japanese market, the Alphard uses the Toyota Hybrid System-CVT (THS-C). This comprises a 2.4-litre petrol engine and front and rear electric motors with a Super CVT continuously variable transmission and E-Four electric four-wheel drive system.

The E-Four system controls a rear-mounted electric motor that drives the rear wheels and controls the distribution of electric power to all four wheels. An electrically-controlled brake system (ECB) delivers efficient braking to each wheel individually for superior handling and safety. Using "by-wire" technology, it monitors brake pedal pressure and vehicle speed to calculate the optimum hydraulic pressure and works with the E-Four to maximise the collection of kinetic energy from braking for conversion into electric power.

The E-Four system is also supremely fuel-efficient: its ability to recover energy from each wheel helps the Alphard Hybrid to achieve around twice the fuel economy level demanded by the Japanese 2010 standards. Consumption is further aided by the car's aerodynamic design, reduced operating resistance in each element of the powertrain and a new air conditioning system that uses a two-way compressor with its own built-in motor.

The Alphard Hybrid qualifies as an Ultra-Low Emissions Vehicle (ULEV), achieving levels 75 per cent below the Japanese government's 2000 benchmark. The 2.4-litre petrol engine has been developed specifically for use in hybrid systems and features a high-expansion ratio cycle that raises efficiency and reduces friction.

Smooth performance is aided by power from the rear wheel motor being used when accelerating away from start-up or in slippery conditions. The rear motor and differential form a single unit, so there is no need for a central propeller shaft. This reduces the vehicle's weight and so contributes to the Alphard Hybrid's fuel economy.

The system uses a hybrid battery with an output greater than any other yet produced and offers excellent energy management. The Alphard Hybrid can generate up to 1,500 watts and is equipped with standard 100-volt AC power outlets, allowing a wide range of household or business appliances to be used, such as hairdryers and microwave ovens. The battery is located beneath the front seats, so does not compromise the vehicle's luggage capacity at the rear.

The Alphard Hybrid also offers a package of advanced safety systems, including a Blind Corner Monitor, which detects vehicles or pedestrians approaching from left or right, a Back Guide Monitor with a rear-facing camera to aid reversing manoeuvres, radar-based intelligent cruise control and a lane monitoring system which measures the lateral distance between the vehicle and the margins of motorway lanes and sounds a warning if the car's course begins to drift.

ENDS

Note to editors: the Alphard Hybrid is Toyota's sixth hybrid-powered vehicle to be announced, following the original Prius, Crown Mild Hybrid, Estima Hybrid, new generation Prius and Lexus RX300 Hybrid Synergy Drive. There are no plans to sell the Alphard Hybrid outside Japan. The new Prius will reach the UK in early 2004, followed by the Lexus RX300 HSD later in the year.