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Japanese hybrids battle European diesels

By Neil Winton

LONDON, December 9, Graphic News: The world's car manufacturers are racing to produce cars which are environmentally friendly and more efficient, and the Japanese believe the answer is "hybrid".

European manufacturers believe that diesel power will win and are sinking huge resources into modernising these so called "oil burners".

The Japanese, led by the giant Toyota Motor Corporation with its latest Prius incarnation, and Honda's Civic IMA, believe hybrids will win out over diesels in the long run. Both Japanese companies have reluctantly and belatedly introduced oil burners for diesel-hungry Europeans, where almost every other new car is now a diesel.

But the entire industry realises that both these technologies are mere interim solutions before fuel cell power takes over, probably by around 2020.

Hybrid engines use two motors -- a traditional internal combustion power plant combined with an electric motor. The combination of the two allows smaller engines to provide power comparable to a larger one. This cuts fuel use and therefore CO2, and avoids diesel's noxious emissions. Under brisk acceleration the electric motor will provide a boost to the petrol engine. Some systems allow just the electric motor to power the vehicle for short distances in town centres to eliminate pollution. An added bonus is power provided by capturing energy used under braking -- known as regenerative braking -- and channelling this to the battery.

Honda recently launched its new Civic IMA -- Integrated Motor Assist -- as a saloon version of the standard petrol-engined Civic. Fitted with all the usual refinements, its real innovation lies under the bonnet. While the last generation of hybrids relied on the petrol engine to produce peak performance, using the electric motor as an ancillary, the new IMA system gives the electric motor a more significant role and allows for a stronger performance from the 1.3 litre VTEC engine when accelerating.

Fuel consumption is claimed to be 57.6 miles per gallon (4.9 litres per 100kms), while CO2 emissions are a mere 116g per km, meaning the 5-seater Civic saloon emits less C02 than a Peugeot 206 hatchback.

Toyota is the only other producer of hybrid cars, with its sleek new Prius (it means "ahead of its time" in Latin). The Prius uses its Hybrid Synergy Drive to assist its 1.5 litre engine.

In 2004, America's General Motors and DaimlerChrysler will also introduce hybrid power plants in their Chevrolet and Dodge pickup trucks. Ford will offer the Escape, a Sport Utility Vehicle (SUV) with a hybrid. Toyota, which has licensed its hybrid system to Ford and Nissan, will also sell its RX300 SUV with a hybrid in 2004.

Meanwhile the arguments about diesel versus hybrid will continue. The Japanese favour hybrids because although diesels can lower CO2 levels and offer excellent performance, they will be unable to meet future government regulations on nitrogen oxide (NOX) emission rules. Diesels also produce soot, but this can now be eliminated by particulate filters.

European companies like Volkswagen and Peugeot have declared the hybrid route a blind alley and are banking on diesels.

But the crucial battle ground will be in the United States, the world's biggest market, where diesel powered cars are almost non-existent, and where tough emission regulations make it unlikely that oil-burning cars will be accepted.
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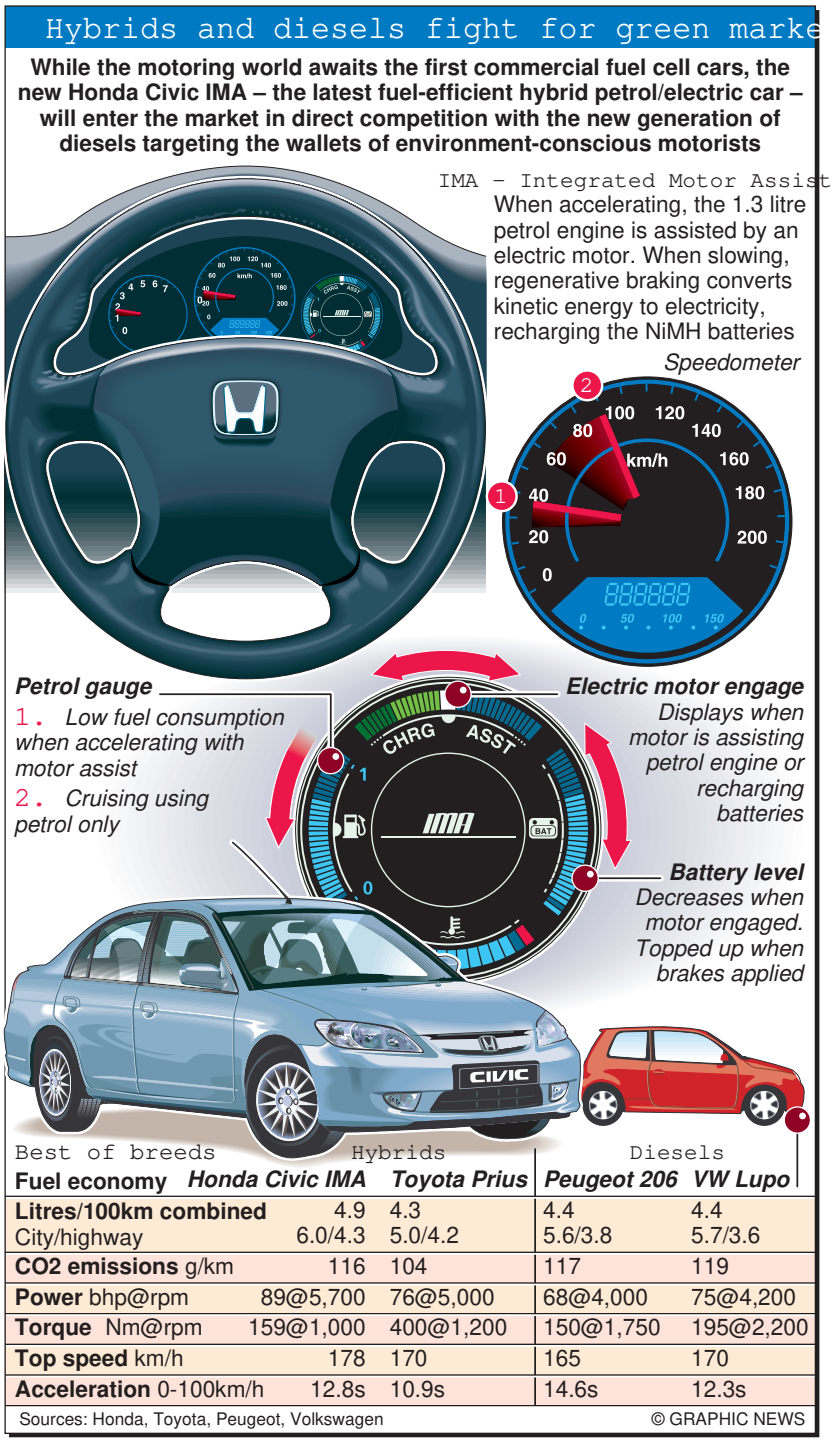

Conversions
Litres/100km = mpg
4.9 = 57.6
6.0/4.3 = 47.1/65.7
4.3 = 65.7
5.0/4.2 = 56.5/67.3
4.4 = 64.2
5.6/3.8 = 49.6/78.5
4.4 = 64.2
5.7/3.6 = 50.4/74.3
km/h = mph
178 = 110
170 = 106
165 = 103
0-100km/h = 0-62mph

EDS -- DATA CORRECT AS AT DECEMBER 9, 2003

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