

Racing green

Skills learned in motorsport are driving the development of low-carbon cars.



Space for Murray and two more

WHEN, late last year, Lord Mandelson proclaimed that he wanted Britain to become “a world leader in low-carbon transport”, most dismissed it as a typical example of New Labour hyperbole.

But the former business secretary was right in a way that even he may not have realised. The rarefied technological skills and talent for fleet-footed innovation that have made Britain home to much of the international motorsport industry are now being applied to develop some of the most interesting, possibly revolutionary, ultra-low-carbon vehicles envisaged anywhere.

The charge is being led by race-bred engineers, such as Gordon Murray, the designer of four Formula One world-championship-winning cars for McLaren and of the firm’s legendary 230mph F1 road car. Mr Murray left McLaren because he was determined to invent a car—and a manufacturing process to go with it—that had the lowest possible environmental footprint while still being safe, fun to drive and cheap to buy. He saw the project as creating a “new British Mini for the 21st century”—much more faithful to the original’s legacy than BMW’s bloated successor. To that end, three years ago he established a design firm near Guildford with backing from MDV, a Silicon Valley venture-capital outfit specialising in green technology.

Some of the principles behind Mr Murray’s car come straight from motorsport: very light weight, great strength, efficient packaging and compact dimensions. The difference is that, in Formula One, performance is pursued without heed to cost, whereas Mr Murray wanted a car that could be built and sold profitably at a price similar to today’s most basic city cars.

The result is a radically new way of making cars and the T.25, a vehicle every bit as impressive in its way as the 100 times more pricey McLaren F1. It is smaller than Daimler’s two-seater Smart, but can carry three in comfort, with the driver sitting in the middle, and has enough space in the boot for the weekly shop. Three T.25s can park abreast in one standard parking place. It meets the highest safety standards. Accident-repair costs are low, thanks to easily replaceable carbon body panels. With a 660cc engine, the car will accelerate at the pace of a 2-litre saloon and return 80mpg.

Mr Murray is also developing a battery-powered version—the T.27—with the help of ZyteK, a British firm that pioneered engine-control systems for racing cars and is now a world leader in electric drivetrains (it is responsible for the electric version of the Smart). Because the car is so light a relatively small (and thus inexpensive) battery will give it a range of 100 miles.

Equally important is the “iStream” process used to make the T.25. “We’re selling a manufacturing system as much as a car,” says Mr Murray. By doing away with metal presses, and with assembly simplified by a tubular-frame chassis, Mr Murray reckons the capital cost of a factory making 100,000 T.25s a year would be about a fifth of the cost of a conventional plant. Nine carmakers, he says, are considering licensing the system, but interest extends beyond the automotive industry.

The approach taken to sustainable personal mobility by Riversimple, a company founded by another ex-racer, Hugo Spowers, is equally unorthodox. Its car, if anything, takes the gospel of lightness even further—Mr Spowers calls it “mass decomposing”—allowing it to use a tiny 6kW hydrogen fuel cell to power electric motors in each wheel. Fuel cells have long promised pollution-free driving, but have been held back by their enormous cost when applied to a normal car.

Riversimple, which is raising £20m in second-round financing and is backed by members of the Piëch family who founded Porsche, believes its “whole system design” philosophy and business model overcomes that obstacle. Mr Spowers intends to lease rather than sell the car, which has a range of 240 miles and will accelerate briskly to its top speed of 50mph. That way he can spread the cost of the critical weight-saving but expensive carbon composite structure over a vehicle’s lifespan of 15-20 years. Drivers will pay £200 a month and 15p a mile to cover all their costs, including fuel. In contrast to a conventional carmaker, says Mr Spowers, Riversimple will have an economic interest in lowering running costs and increasing longevity. Government-backed trials involving up to 30 cars will begin in Leicester and, probably, Oxford in 2012.

Mr Murray and Mr Spowers both believe that if cars (and indeed the planet) are to survive they must be designed, manufactured and used in ways very different to the century-old model that still holds the automotive industry in thrall. Their companies are small and specialised, but may hold the key to something much bigger.

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