

LLOYD'S

## Speeding towards a low-carbon future?

4 September 2008



Mass produced low-carbon cars are still a way off

Last month, the world's first hydrogen-powered motorsport race was held in Rotterdam. This event, or the Formula Zero Championship, has drawn attention to the global low-carbon car industry. Greg Offer, who headed Imperial College London's team in the event, says that it is imperative that the motorsport industry embraces hydrogen-powered technologies, as other automobile manufacturers would follow their lead. He explains: "In ten years, if the motorsport industry as a whole hasn't engaged in zero or low-emission principles, it probably won't be around."

Editor of Practical Performance Car magazine, Will Holman, agrees. He explains: "Motor racing will help technology advance - stuff that is on Formula One cars appears on domestic vehicles 20 years later." Motor racing, he says, is the driving force of technological change. However, the car expert is sceptical of the low-carbon options currently available to consumers, discounting both hydrogen-powered and electric cars as 20 years away from replacing the internal combustion engine.

Described as the white knight of the car industry by some experts, hydrogen fuel cells power vehicles by combining gaseous hydrogen with oxygen. As the two elements react they generate electricity, which then moves the vehicle. However, this technology is still in its relative infancy. Although hydrogen is the universe's most common occurring element, it is notoriously hard to trap and store. The Daily Telegraph reported in 2006 that 90% of the 50 million tonnes of commercially available hydrogen produced each year is created by steaming natural gas. Unfortunately, the burning process involved releases carbon emissions – the very thing scientists are aiming to avoid – and reduces the net energy potential of this resource.

Vanessa Guyll, a technical specialist at the AA, an organisation which provides motoring support in the UK, says that although hydrogen is a good fuel source there are some fundamental problems with its capabilities. She explains: "It has many associated logistical problems, such as production from carbon-free sources, storage and distribution. Furthermore, the gas itself is very light and very explosive." Guyll adds that the AA doesn't expect hydrogen or fuel cell cars to be widely available before 2030 or 2035.

Instead, the AA expert backs electric cars as the frontrunner of low-carbon vehicle solutions. Electric cars are powered by battery packs loaded into the vehicle, which are rechargeable. She notes that although there are still problems with the usability of electric cars in comparison with diesel and petrol vehicles, developments in lithium-ion battery technology will help to improve their range.

However, Holman asserts that solely electric cars currently are fairly useless. His comments echo that of a report published by the Institute for Public Policy Research in 2003 entitled *Tomorrow's Low-Carbon Cars*, which claimed that the limited range and long recharging times of electric cars mean they are 'unlikely to be a commercial success'.

The widespread introduction of a new motor technology would result in an overhaul of other car-related industries, such as the insurance market. Guyll explains that when insuring hydrogen-powered or solely electric cars, insurance providers will need to conduct a comprehensive assessment of the reparability of these technologies, in comparison with internal combustion engine-based vehicles. She adds: "Repair costs will relate to body structure, which shouldn't be very different from petrol or diesel-powered cars. However, if the fuel itself is considered too dangerous then the car won't pass the Type Approval tests."

Supplier of insurance industry parts Thatcham, which produces data on the efficiency and safety of vehicles, supports this view. It says that the new car valuation, vehicle performance, parts pricing and a car's security level are the four main considerations for an insurance provider.

Currently, consumers hoping to cash in on lower insurance rates by going green will be disappointed, Guyll continues. "Insurance companies are generally concerned about processes and costs association with vehicle repair." With mass production of low-carbon cars still an issue, the popular use of these vehicles is still a long way off.

For Holman, in the meantime, there is a very simple step consumers can take to lower their carbon footprint. He advises: "The best solution is to stop buying new cars because in most cases the majority of a car's carbon footprint is created through its manufacturing rather than during its use."

This article is provided for general information purposes only and is subject to the full [terms and conditions](#) on our website. Any policies referred to in this article will be subject to separate terms and conditions and this article should not be regarded as a substitute for referring to those terms and conditions.

Last updated on 03 Sep 2008