



## **PRESS RELEASE**

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### **Hydrogen breakthrough offers new hope in fuel crisis**

A British company has unveiled a hydrogen refuelling station and a hydrogen-powered car which could revolutionise commuting while cutting fuel costs and CO<sub>2</sub> emissions.

The conventional petrol-engined Ford Focus, which has completed successful urban commuting trials, has been converted to run on hydrogen, which burns without emitting CO<sub>2</sub>, and could ultimately reduce drivers' dependence on fossil fuels.

The company involved, ITM Power Plc, has also revealed a hydrogen home refuelling station, capable of producing the gas from water and electricity, which it says could ultimately offer drivers an alternative to conventional fuels and provide a new power source for homes and businesses. The station overcomes one of the fundamental stumbling blocks to a hydrogen economy – the lack of hydrogen refuelling infrastructure and utility supply network.

It has taken scientists and chemists at the company's Sheffield research base, currently Europe's largest electrolyser and fuel cell development centre, eight years to create a low-cost means of manufacturing hydrogen. Its patented electrolyser-based refuelling station uses a unique low-cost polymer which dispenses with the need for expensive platinum and can be manufactured at 1 per cent of the cost of traditional membrane materials.

The result is a hydrogen production system, small enough to be used in a home or business, which can generate the gas from a supply of water and off-peak or renewable electricity – power created by wind, wave, solar or nuclear energy. The stored hydrogen could then be used to fuel converted cars or provide power for domestic or commercial purposes.

The Ford Focus was chosen by ITM Power because it is one of Europe's top-selling models. In its converted form, it is effectively a bi-fuel vehicle, capable of being switched back to petrol if the hydrogen supply is exhausted. The demonstration vehicle can travel 25 miles on a single recharge of hydrogen from the refuelling station, allowing it to complete most average commuter journeys without the need for the back-up petrol supply. If the hydrogen is compressed the range can be extended to 100 miles.

Although the initial demonstration vehicle is a car, vans and trucks will also be able to be to use the new fuel system to give commercial vehicle operators huge potential cost savings on delivery journeys, as well as further reducing CO<sub>2</sub> emissions.

ITM Power says further research and current engine and fuel-saving developments could well double the car's range and the shape of the standard pressurised

hydrogen tank fitted to the demonstration vehicle could be engineered to maximise space.

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The home refuelling station, test production of which is already underway at ITM Power's Sheffield Factory, underlines the potential for the generation of hydrogen both at home and in the workplace. The company has already established a showcase 'hydrogen apartment' at its Sheffield facility where hydrogen gas is used for heating, cooking and to operate a fridge, while a hydrogen internal combustion generator converts the gas back into electricity to provide power for general lighting and to operate a television, computer and DVD player.

Jim Heathcote, CEO of ITM Power, said: "This double announcement marks the end of a demanding research and feasibility programme and the beginning of an exciting new collaboration phase with manufacturers and developers to bring the potential of hydrogen to commercial reality. Given the pressing need to reduce our dependence on fossil fuels, especially oil, and to cut CO<sub>2</sub> emissions, the future for hydrogen as an alternative means of storing and utilising energy cost-effectively has never been brighter."

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**Notes to Editors:** High-resolution JPEG images of ITM Power's Home refuelling Station and the hydrogen-powered Ford Focus are available on request. Images of Jim Heathcote and an illustration of a 'hydrogen home' are also available.

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