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## FORD FIESTA ST GROUP N GOES GREEN



DOVENBY, june 2007 – Ford and M-Sport, the company behind the BP-Ford World Rally Team, have developed a Bio-Ethanol E85 powered version of the Ford Fiesta ST Group N rally car. It aims to take the environmentally positive, high-performance fuel onto the FIA World Rally Championship (WRC) when the cars compete in the Fiesta SportingTrophy International series in 2008.

The environment is in everyone's thoughts and to contribute towards reducing motorsport's environmental impact, the development of Bio-Ethanol E85 fuel is seen as an ideal platform from which to raise public awareness of the benefits of bio-fuels. Environmental pressures are reshaping the automotive industry and Ford is a market pioneer in this shift. Together we have developed a 'green' strategy to lead the way to a more sustainable future by showcasing  $CO_2$ - efficient rallying on the world stage.

The GpN Fiesta ST is converted from the standard 2-litre ST road car. With the close relationship between the rally and road-going versions, M-Sport has taken the opportunity to develop real solutions to improve the environmental efficiency of motorsport and help promote sustainable alternatives to pure fossil fuel.

## What is E85?

Bio-Ethanol is a mix of ethanol, a highly flammable liquid which can be manufactured by fermenting a wide variety of agricultural produce, including forest residue, sugar cane, sugar beet or grain, and then mixed with normal petrol. The mix is defined by the codename - E85 - being 85% ethanol and 15% petrol.

## What are the benefits of E85?

Using such a high blended bio-ethanol fuel in specifically designed engine technology means that the crucial "well to wheel" CO<sub>2</sub> emissions can be reduced significantly. As the plant crops grow, they absorb  $CO_2$  from the atmosphere, which partly offsets the  $CO^2$  emissions produced during the burning of the Bio-Ethanol fuel in the car's engine.



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In addition, ethanol has a higher octane rating than normal petrol (typically 104-106 octane compared to the traditional petrol 95-97). This allows an optimum timing for engine ignition and has a fast flame speed in the cylinder, so the fuel burns faster, increasing the efficiency of the engine. The result is an increase in both engine power and the torque produced.

## A global perspective

Since 2006, the concept of the Fiesta SportingTrophy (FST) has been developed around the world and there are currently eleven countries operating national FST championships. There are now over 225 Ford Fiesta STs competing in 25 countries around the world.

It is in the Swedish FST (known as the Ford FlexiFuel Cup) that Andreas Eriksson, a former Swedish National Rally Champion, has proven the use of the Fiesta ST with E85 in one-make competition. Since 2006, the FlexiFuel Cup has competed with E85 as the mandatory fuel. Ford calibration engineers from the European powertrain development centre at Dunton have developed the concept further and adapted it to work with the standard ECU configuration on the Fiesta ST so that potentially all the existing Fiesta SportingTrophy cars around the world can be adapted to use this fuel with limited modifications.

Malcolm Wilson, Managing Director of M-Sport said about the move to go green: "The long-term environmental message is clear - reducing our reliance on fossil fuels and the overall reduction of  $CO_2$  emissions is a priority. The jury is out on the exact direction that the future will take with regard to the use of renewable fuel technology in road cars, but for the motorsport environment, E85 offers a solution that can demonstrate to the wider audience that 'going green' doesn't necessarily mean any reduction in the driving experience. With our experience of engineering WRC cars behind us, our company wants to use our capabilities to produce rally cars that are both fun to drive and environmentally friendly. The Fiesta SportingTrophy will provide a great showcase to demonstrate this technology in action."

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