

Renewable biofuels for transport

# The facts on biodiesel and bioethanol



**BABFO**

BRITISH ASSOCIATION FOR BIO FUELS AND OILS  
RECYCLING CARBON



**defra**  
Department for Environment  
Food and Rural Affairs



“Sustainable development is a key priority for Defra, by which we mean securing a better quality of life for everyone, now and for generations to come. Although in their infancy in the UK, renewable transport biofuels can play a useful part in achieving this aim through reducing greenhouse gas emissions and providing new market opportunities for farmers. I hope that this fact sheet, produced jointly by Defra and the British Association for Biofuels and Oils (BABFO), will promote the production and use of transport biofuels”.

*Lord Whitty, Parliamentary Under-Secretary (Lords), Minister for Food, Farming and Sustainable Energy, Department for Environment, Food and Rural Affairs.*

“One hundred years ago, British agriculture was a major producer of road transport ‘fuels’ – oats and hay for horses. Now, with enough human food available, (for which we should be thankful), there is again the opportunity for British farmers to become useful suppliers of transport fuels – biodiesel and bioethanol. We invite your support for this development”.

*Peter Clery, Chairman, British Association for Biofuels and Oils, BABFO Office, Curlew Court, Sutton Bridge, Lincs, PE12 9QQ. Website: [www.biodiesel.co.uk](http://www.biodiesel.co.uk).*

## What are transport biofuels?

They are biodiesel and bioethanol, liquid fuels made from plant material and recycled elements of the food chain. To a large extent, they are renewable and sustainable. By contrast, petrol, diesel and the road fuel gases liquefied petroleum gas (LPG) and compressed natural gas (CNG), are fossil fuels in finite supply. Biodiesel is a diesel alternative. Bioethanol is a petrol additive/ substitute. Biofuels can be used in cars, vans, buses, lorries, agricultural vehicles, boats etc. They are produced from crops such as cereals, oilseeds, sugar beet and fodder beet. Recycled vegetable oils and fats from the food chain can also be used to produce biodiesel but amounts are limited. Looking ahead, it is possible that wood, straw and even household wastes may be economically converted to bioethanol.

# What are the advantages of biofuels?

They can cut emissions of carbon dioxide, a greenhouse gas, by 50% – 60% compared to fossil fuels and so can contribute to meeting UK targets for alleviating climate change. They can also reduce emissions of some tailpipe pollutants and provide a domestic source of supply, making us less dependent on foreign imports. Biofuels also add to global fuel supplies as their energy comes directly from the sun every year. Biofuels are safely and easily biodegradable and so are particularly well suited to environmentally sensitive areas like waterways.

The crops used for biofuels are normal farm crops which can be grown using conventional farming techniques in many parts of the UK. They can be managed to enhance farmland biodiversity. Sound farming practice for such crops includes conservation headlands, hedges and spinneys for enhancement of wildlife. The production of biofuels from arable crops would provide a useful new market for rural Britain.



Biofuels can help to reduce pollution from road transport (Photo courtesy of the Highways Agency)

## How can they be used?

Biodiesel can be used either as a blend with mineral diesel (5% biodiesel is common in France and has been introduced in the UK) or as a straight fuel. Vehicle manufacturers' warranties cover use with 5% biodiesel blends. 100% biodiesel must meet the EU quality standard EN 14214. No engine modifications are required and biodiesel can improve engine lubricity when blended with ultra low sulphur diesel (ULSD).

Bioethanol can be used as a 5% blend with petrol under the EU quality standard EN 228. This blend requires no engine modification and is covered by vehicle warranties. With engine modification, bioethanol can be used at higher levels, for example, E85 (85% bioethanol) is common in the USA. Bioethanol can also be converted to ETBE (etherised bioethanol) as a petrol extender, which is common practice in France and Spain.



Oilseed rape can be used to produce biodiesel

## Are they available?

About 700,000 litres (around 600 tonnes) of biodiesel are currently sold each month, produced mainly from recycled cooking oils and available as a 5% blend from around 100 filling stations. No bioethanol is yet available commercially.

Ample crop supplies and land are available in the UK to produce biofuels. Crops which are currently exported could be used instead to produce biofuels. At present, about 10% of UK arable farmland is unproductive of food under set-aside. Crops for the production of biofuels can be grown on set-aside land and this land could be used to produce significant quantities of biodiesel and bioethanol, without cutting food supplies.



Sugar beet can be used to produce bioethanol (Photo courtesy of British Sugar plc)

## If biofuels make such sense, why are they not more widely available?

Producing biofuels costs (pre tax) about twice as much as fossil fuels, depending on the cost of feedstock and crude oil. With full fuel duty they are therefore too expensive to buy and a reduction in the duty rate is needed to make them competitive at the pumps. Such duty reductions are common in the EU and elsewhere in the world. In July 2002, the UK Government cut the duty rate for biodiesel by 20p/litre compared to ultra-low sulphur diesel. A cut in the duty rate for bioethanol of 20p/litre compared to ultra-low sulphur petrol has been announced for introduction from 1 January 2005. In the wider context, the EU has adopted legislation which will require the UK and other European countries to set indicative targets for the use of biofuels. The EU's reference targets are 2% by 2005 and 5.75% by 2010.



(Photo courtesy of Rix BioDiesel Ltd)

# Where can I find out more about biofuels and other alternative fuels?

The Government has published a “Drive cheaper, drive cleaner” leaflet that gives information on cleaner cars and fuels and how this can save money through reductions in car tax etc. The leaflet is available by calling 0870 1226 236 or on the Department for Transport website at [www.roads.dft.gov.uk/vehicle/environment/drivecleaner/index.htm](http://www.roads.dft.gov.uk/vehicle/environment/drivecleaner/index.htm)

Details of filling stations selling biodiesel are listed at [www.biodieselfillingstations.co.uk](http://www.biodieselfillingstations.co.uk). For further advice on using biofuels in your vehicle, contact your vehicle manufacturer. Information on biofuels is available on Defra’s website at [www.defra.gov.uk/farm/acu/energy/energy.htm](http://www.defra.gov.uk/farm/acu/energy/energy.htm) and the BABFO website at [www.biodiesel.co.uk](http://www.biodiesel.co.uk)



A Rover 75 tourer running on a 5% biodiesel blend

PB8477

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