

Biofuels and road vehicles



What are transport biofuels?

Can they help reduce climate change?



Wheat is used as a feedstock for bioethanol

What are transport biofuels?

Transport biofuels are liquid or gas fuels made from plant material, recycled elements of the food chain or waste material, for use in combustion engines.



What types of biofuel are there?

- **Biodiesel** – a fuel normally derived from plant oils for diesel engines, usually sold blended with traditional diesel
- **Bioethanol** – a fuel normally derived from starch or sugars for petrol (gasoline) engines, usually sold blended with traditional petrol
- **Biogas** – a gas fuel derived from the digestion of organic material, for natural gas engines (limited sale in the UK)





Sustainable forests provide feedstocks for biofuels

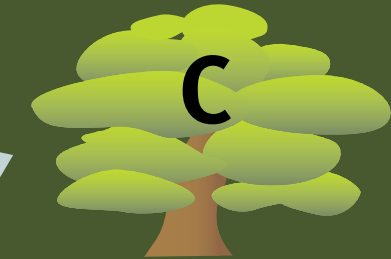
Why use biofuels?

Biofuels are renewable fuels, which are normally produced from grown organic material (eg: plants).

Powering our vehicles with biofuels will help stabilise climate change.

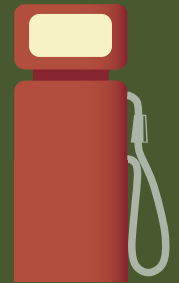
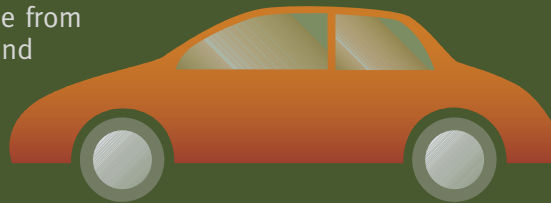
3 When biofuels are burnt, the only carbon released is the carbon previously absorbed by the plant. In fact, the only net carbon dioxide emissions from biofuels come from shipping, farming methods and manufacturing processes.

1 Plants absorb carbon dioxide (a greenhouse gas) and give out oxygen.



O₂

2 The carbon absorbed from the atmosphere is trapped inside the plant, which can then be turned into biofuel.





Can I use biofuels?

Increasing quantities of biofuels are already sold in the UK, and the UK government is promoting their use. But you must use the right fuel for your vehicle – road fuels are covered by international quality standards that ensure safe operation.

- **Diesel vehicles** are warranted to use BS:EN590 fuel. This can contain up to 5% biodiesel by volume, (where the biodiesel meets BS:EN14214 specification).
- **Petrol vehicles** are warranted to use BS:EN228 or BS:7800 fuel. This can contain up to 5% bioethanol by volume.

Using a 5% biofuel blend can help reduce your personal contribution to climate change.

Traditional fuel: 95%
Biofuel: 5%

Whatever your vehicle, you can use a 5% biofuel blend that meets the appropriate quality standards

How do I check if the fuel I want to buy conforms to the quality standards?

Unleaded petrol : BS EN 228: 2004
High octane (super)
Unleaded petrol : BS 7800: 2000
Diesel : BS EN 590: 2004

All pumps in the UK selling diesel to BS:EN590 and petrol

to BS:EN228 or BS:7800 will be labelled.

Diesel BS:EN590

Petrol BS:EN228
BS:7800

Remember: fuel quality standards are important in keeping your vehicle running properly. If you use fuel not conforming to the standards your vehicle could be damaged, and your warranty will be invalid.

Some vehicle manufacturers allow higher concentrations of biofuel for specific vehicles and high blend fuels are also available.





Bioethanol plant in South Dakota, USA

What about high concentration blends of biofuel?

Today some standard vehicles and other specially modified vehicles are able to run on higher than a 5% concentration of biofuel.

Generally, vehicles suitable for high biofuel concentrations are suitable for regular fuel too. Always check with your vehicle manufacturer to ensure you are using the correct fuel and blend concentration.

Vehicles that can use conventional petrol, high concentration of bioethanol, and any blend in between are known as 'flex fuel' vehicles.

A small network of high concentration biofuel pumps is available in the UK – look out for E85 (85% concentration bioethanol). For depot-based fleets, biodiesel blends like B30 (30% concentration biodiesel) may be available.

See www.transportenergy.org.uk for locations of biofuel retail sites.





Harvesting oilseed for biodiesel production

What is the future for transport biofuels?

Road transport is a contributor to man-made carbon dioxide emissions. Biofuels can help to address this, but a carefully managed phase-in is required and quality standards must evolve to ensure trouble-free motoring.

The recent renewable transport fuels obligation will mean most road fuel sold in the UK will contain 5% biofuel by 2010.

Beyond 2010, the motor industry is working in partnership with the fuel industry to develop vehicles and fuel quality standards for 10% biofuel blends.

Looking forward, the next generation of biofuels is currently in development. These fuels use a wider variety of feedstocks, including waste biomass, and have even greater potential for greenhouse gas savings.





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