



## Biofuel statements

<p>Biofuels are in theory <b>carbon neutral</b> because when burnt as fuel, the carbon they release has been <b>offset</b> by the amount of carbon dioxide they absorbed whilst growing in the fields.</p>
<p>As demand for biofuels increases, many developing countries are <b>clearing forests</b> and <b>draining marshes</b> to make more space to grow these biofuel crops. Vast amounts of <b>greenhouse gases</b> are released by clearing the land. This clearing also has a major impact on the <b>conservation of plants and animals living</b> in these areas – wildlife lose their <b>habitat</b>.</p>
<p><b>Food shortages</b> are on the <b>increase</b> in poorer countries, as farmland traditionally used for food and animal feed has been <b>changed over</b> to grow industrial crops suitable for biofuels.</p>
<p>The increase in demand for crops such as rice, corn or soya beans, which can be used as <u>both</u> food and biofuels, has <b>forced the price up</b> so many poor people cannot afford the higher prices of these foods. In Mexico last year there were <b>riots</b> after the price of <b>maize</b> (their main food) <b>quadrupled</b>, pushed up by the demand for biofuels.</p>
<p>The best biofuels, such as ethanol produced from <b>sugar cane</b> in Brazil, can deliver <b>10 times more energy</b> than that required to produce them, and release <b>a quarter</b> of the greenhouse gases compared to oil.</p>
<p>During the last 15 years, annual global production of palm oil has <b>trebled</b>. Palm oil production is predicted to <b>increase</b> by another 30% by 2010.</p>
<p>Indonesia plans <b>20 million hectares new oil palm plantations</b> to meet world biodiesel demand.</p>
<p>After planting, it takes 3-4 years for the oil palms to become productive, and they have a <b>life expectancy</b> of around 25 years.</p>



Oil palms produce a greater **yield** per hectare than any other edible oil - up to **ten times** that of soybean oil.

Some biofuels such as those produced from **palm oil** in Indonesia, are often given as an example of 'bad' biofuel since they don't give as much **energy** and when land is cleared they cause much **destruction** of the environment.

Most current biofuels come from agricultural crops. Different countries specialise in different types of biofuel, according to their climate. In Europe it's **rapeseed oil** and **sugar beet**, in the USA it's **sweetcorn** and **soybeans**. **Sugar cane** tends to be grown in Brazil and a huge amount of **palm oil** comes from south-east Asia.

Scientists are now investigating second generation biofuels - where a much wider range of substances, including **manure**, **food waste**, **wood**, **straw** and **sewage**, are broken down to create biofuels but experts say it will be 5-10 years before they will be commercially available. Scientists are also having some success with using **algae**, **seaweed** and **jatropha** (a bush found in dry areas of the Americas, Africa and Asia).

**European countries** are the world's largest **importers** of palm oil, making up 17% of the market.

Governments and the fuel companies have been looking for alternatives to oil because:

- Burning fossil fuels is causing **climate change**
- The **price of oil** has been rising steeply (although it has recently fallen again)
- Some parts of the world that supply oil are **dangerous** (wars, natural disasters)
- There is a **finite** supply of **fossil fuels** in the world and we know that they are running out!

In America the president has said that they should use less imported oil and so by 2025, the USA should **replace 75% of imported oil with biofuel**.



In the UK, **palm oil** is present in 10% of supermarket products – from lipstick to margarine, cereals to soap. It is almost always labelled generically as a “vegetable oil”.

When cars were first invented, cheap **crude oil** from underground diverted interest and research away from using biofuels. The low price of oil gave it dominance in the market and we have used it ever since to make petrol and diesel.

The diesel engine, invented by German engineer **Rudolf Diesel** in 1892, was first made to run on **peanut oil**.

At the moment, small amounts of biofuels can be easily used within **existing** car and lorry engines by mixing them with normal petrol and diesel (about 10-15% biofuel).

Only a **small number** of countries produce fossil fuels (crude oil, natural gas) but biofuels can be grown **in any country** so no-one can control the supply.

The plants used to make biofuels are **renewable** (as fresh supplies can be grown as needed) so in theory there is an unlimited amount and a secure supply.

A litre of **biodiesel** costs around **90p** (compared to about **£1.10** for **ordinary diesel**).

Only a limited number of **garages** stock biofuels so it is not yet widely available in many countries.

The countries in the **European Union (EU)** believe that biofuels are less damaging to the environment and have set a target that **10% of transport fuel** will be **biofuel** by **2020**.

*“Hundreds of Borneo tribesmen armed with blowpipes are blockading roads in protest against companies they accuse of destroying their rainforests to grow oil palms for ‘green’ biofuel.” (Times Newspaper August 2009)*



When **forests are cleared** to make way for growing biofuels, much vegetation is **burnt** and the gases from the smoke add to the problem of **global warming**.