



# WHAT WE KNOW ABOUT...

## BIODIESEL

The implications of using biodiesel on your boat—please note a full report on alternative fuels is available from The Green Blue.

### BACKGROUND

Biodiesel is a renewable energy source increasingly being used for powering boats. It is a clean-burning renewable source of energy from vegetable oils. It can be produced using either chemical or physical production routes using either waste or virgin oil.

Burning biodiesel made from recycled vegetable oil is considered to be near carbon neutral. This is because though burning biodiesel releases CO<sub>2</sub> into the atmosphere, the vegetables from which the oil is extracted remove CO<sub>2</sub> from the atmosphere to grow.



### BIODIESEL AND THE ENVIRONMENT

Less soot and smoke is emitted from engines as there is much more efficient burning of the fuel mixture. Users can expect:

- A near 100% reduction in sulphur dioxide
- A 40 - 60% reduction in soot & particles
- A 10 - 15% reduction in carbon monoxide
- A reduction in polyaromatic hydrocarbons (PAHs)
- Faster starting and smoother operation should reduce the amount of unburned fuel.

If biodiesel enters the watercourse it will still harm aquatic and marine life – birds, mammals and fish coated in vegetable oil are more vulnerable to predators and could die from hypothermia or illness. It can however be less damaging than petrodiesel, as for example, biodiesel concentration levels need to be 20 times those of petrodiesel to have the same impact on fish larvae mortality.

Biodiesel will degrade within 28 days and a study conducted at the University of Idaho 1995 determined that rapeseed biodiesel would degrade about twice as fast as petroleum diesel (also known as petrodiesel).

### BIODIESEL AND BOATS

100% biodiesel can be used, but it is more often blended with petrodiesel.

Using biodiesel in a conventional engine may



jeopardise the manufacturers' warranty so check with manufacturers for exact details. Warranties will often be valid for particular blends of biodiesel.

Long-term engine wear studies in Europe and the U.S. show that 100% biodiesel reduced long term engine wear to less than half of those engines running on diesel fuel but poorly made biodiesel of low quality can cause engine problems.

Biodiesel has no noxious odours, is non-toxic and contains no hazardous materials. It smells and feels like cooking oil, making it pleasant and virtually harmless to handle. European and U.S. studies indicate that blends of biodiesel and petrodiesel result in small decreases in overall power output of engines. However, at or near maximum throttle, the two engines performed the same.

Biodiesel can work less well in cold weather; therefore it is recommended that 100% biodiesel is used in the summer, with 50:50 blends of biodiesel and petrodiesel in the colder winters.

Currently biodiesel is taxed less than red diesel but the production costs of biodiesel make it more expensive to purchase than red diesel. Visit HM Revenue and Customs web pages for more information about biodiesels and tax ([www.customs.hmrc.gov.uk](http://www.customs.hmrc.gov.uk) and search for 'biodiesel').

Low Impact Living Initiative has produced a general biodiesel information sheet giving an introduction to biodiesel and its pros and cons. This information sheet also provides details of how to make biodiesel from waste cooking oil ([www.lowimpact.org/factsheetbiodiesel.pdf](http://www.lowimpact.org/factsheetbiodiesel.pdf)).

## WHERE TO BUY BIODIESEL AND GET MORE INFORMATION

Producing biodiesel without proper equipment and safety precautions can be dangerous. The **Environment Agency** provides details about the regulations surrounding biodiesel production. [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

The biodiesel being trialled on the Broads has been developed by Norfolk based **Global Commodities UK**. Details can be found at [www.globeco.co.uk](http://www.globeco.co.uk).

A list of outlets in the UK selling biodiesel can be found at [www.biodieselfillingstations.co.uk](http://www.biodieselfillingstations.co.uk)

**Blooming Futures** specialise in LPG and compressed natural gas conversions and can also help to switch to 100% renewable energy, [www.bloomingfutures.com](http://www.bloomingfutures.com)

**Bio-power** is a North Wales initiative for transport fuels - [www.northwales.org/bio-power](http://www.northwales.org/bio-power)

**Green Fuels** provides a list of fuelling outlets - [www.greenfuels.co.uk](http://www.greenfuels.co.uk)

**Renewable Energy Association** represent renewable energy producers - [www.r-e-a.net](http://www.r-e-a.net)

For more information about **The Green Blue** please call 02380 604 100, email [info@thegreenblue.org.uk](mailto:info@thegreenblue.org.uk) or visit [www.thegreenblue.org.uk](http://www.thegreenblue.org.uk).

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