

Bio-fuels

1. What are bio-fuels

“Bio-fuels” is the term we give to liquid or gas fuels that are not derived from petroleum based fossil fuels or which contain a proportion of non fossil fuels.

2. Use in vehicles

Bio-fuels can be used as road fuels in two ways:

- a) as a blend, up to specified limits, with conventional motor fuels (petrol or diesel) in engines which need no modification
- b) on their own but a conventional engine must first be modified – this use is confined to ‘captive’ fleets of vehicles, such as might be used by utilities.

For the most part, road users want to use fuels which are readily available and which allow them to switch back to fuels without a bio component without having to modify the engine.

The Bio-fuels Directive states that *“New types of fuel should conform to recognised technical standards if they are to be accepted to a greater extent by customers and vehicle manufacturers and hence penetrate the market. Technical standards also form the basis for requirements concerning emissions and the monitoring of emissions”*.

The European Union has therefore set limits to how much bio-fuel may be added to conventional fuel and these are reflected in Irish law

- Automotive diesel and marked gas oil. The allowable bio component is to a maximum of 5% by volume, I.S EN590. Oil companies, vehicle manufacturers and the bio-fuel producers have agreed a standard for the vegetable oils that may be blended with conventional diesel so that the combined fuel meets the technical needs of modern diesel engines. I.S EN 14214
- Unleaded petrol. The allowable amount of ethanol is up to 5% by volume and up to 15% by volume of the ethanol derivative Ethyl Tertiary Butyl Ether. I.S EN 228

Car manufacturers have agreed that warranty is not affected by the use of fuels in conventional engines if they meet these standards.

Over time, after more exhaustive laboratory tests, assessments on the environment and with input from the car manufacturers, these limits are likely to move upwards. This would allow a greater use of bio-fuels in ways that allow consumers to interchange fuels without engine modification.

There are particular difficulties with the transportation and storage of bio-ethanol as it absorbs water.

3. The environment

There are clear attractions in promoting bio-fuels but the environmental arguments in their favour are not entirely straightforward.

On the positive side the fuel is renewable and would lead to a reduction in greenhouse gas emissions as the carbon dioxide emitted on combustion is taken up by new plant growth. There is a debate as to whether the current process for producing bio-fuels actually produces more carbon dioxide than the resultant bio-fuels saved.

Further, were we to plant the levels of crop necessary to generate these fuels in much greater abundance, there would be problems of biodiversity and the appearance of the countryside.

Finally, there is a significant economic cost of producing bio-fuels by way of the subsidy which will be necessary from the tax-payer to allow the marketing of bio-fuels at prices which can compete with conventional motor fuels.

4. Public policy

In its resolution of 18 June 1998, the European Parliament called for an increase in the market share of bio-fuels to 2% over a five year period through a package of measures.

In May 2003, the European Parliament and Council adopted Directive 2003/30EC for the promotion and use of bio-fuels or other renewable fuels for transport. The bio-fuels directive specifies a replacement of 5.75% of all petrol and diesel on an energy basis. In terms of volume this is closer to 6.5%. Currently this has not been mandated.

Member states have taken different initiatives to encourage the introduction of bio-fuels. The rate of market penetration differs across the EU.

On 3 August 2005, the Irish Government announced details of a two year programme of excise relief, worth €3m per annum to support the use of bio-fuels (the exemption would cover 12 million litres of vegetable oil, two million litres of bio-diesel and two million litres of bio-ethanol).

In July 2006, the Irish government launched a five year incentive scheme with the target of achieving 2.2% bio fuels penetration across the entire fuel market. The scheme applies to four categories

- bio-fuels blended with diesel meeting EN590 specification for sale through regular and existing supply channels.
- bio-ethanol components blended with gasoline meeting EN228 specification for sale through regular and existing supply channels and bio-ethanol blends up to 85 % (E85) for separate sale in flexible fuel vehicles.
- pure plant oil, made from crops and used in modified diesel engines as a 100% bio-fuel
- bio-fuels for use in captive fleets.

5. Government approved projects

The Department of Communications, Marine and Natural Resources received 102 applications in the bio-fuels MOT Relief Scheme II. There were 11 applications received in the Bioethanol category, 36 in the EN590 category, 18 in the Pure Plant Oil category and 37 in the Captive Fleets Category. A panel comprising officials from DCMNR, Sustainable Energy Ireland and Enterprise Ireland assessed the applications and made recommendations to the Minister for Communications, Marine and Natural Resources. On 23rd November 2006 Minister Dempsey announced that sixteen bio-fuels projects were to be granted excise relief under the Scheme. The successful projects are as follows:-

Category	Company	Volume awarded for 2006 - 2010
Bioethanol	Cooley-Clearpower,	54.38m litres
Bioethanol	Maxol Ltd,	42.15m litres
Bioethanol	One Fifty One Ltd	176.07m litres
Bioethanol	Topaz Energy Ltd	33.4m litres
EN590	Conoco Phillips Whitegate Refinery Ltd	93m litres
EN590	Biodiesel Production Ireland/Topaz Energy Limited	68m litres
EN590	Green Biofuels Ireland Ltd	32m litres
EN590	Irish Food Processors Ltd	97m litres
Pure Plant Oil	Biogreen Energy Products Ltd	7m litres
Pure Plant Oil	Eilish Oils Ltd,	7m litres
Pure Plant Oil	Goldstar Oils Ltd	7m litres
Captive Fleets	Greyhound Recycling and Recovery Ltd	21.68m litres
Captive Fleets	Emo Oil Ltd	9.65m litres
Captive Fleets	EcoOla	9.3m litres
Captive Fleets	Eco Fuels Ltd	6.4m litres
Captive Fleets	Bord na Mona plc	0.58m litre

When at full capacity in 2008, the scheme will result in 2% market penetration of bio-fuels in the transport fuel market. It will result in savings of over 1.2m tonnes of polluting CO₂ over the five years of the programme. In terms of eliminating pollution this is the equivalent of taking around 70,000 cars per year off the road over the lifetime of the scheme, and is one of the more significant measures being taken by Government to reduce CO₂ emissions as part of its Kyoto commitments.

6. IPIA Position

The IPIA acknowledges the introduction of bio-fuels but stresses the importance of ensuring that they are produced in conformity to the appropriate specification.

The IPIA cautions against overstating the economic and environmental benefit from the current generation of bio-fuels and would encourage further research into the development of more effective and efficient bio-fuels.