

Biofuels in a small EU member country

MALTA

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Current Legislation in force in Malta:

L.N. 528 of 2004 – Transposes *'Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport'*

The Directive does not include mandatory parameters as to the quality of biofuels

Specific labeling requirements indicating biofuel content for retail points of sale (applicable only for blends above 5% by volume).

Annual reporting requirement, including estimate of biofuel consumed by the transport sector during the preceding year.



Proposed Legislative Measures

In order to amplify the scope of the existing legislation so as to cover activities other than transport, and to create a legislative framework within which all operators of biofuels must operate, draft subsidiary legislation was published for consultation.

Together with this draft subsidiary legislation, a draft licence has also been prepared. The aim of this licence, which covers all activities related to biofuels, that is production, importation, storage, wholesaling and retailing is primarily intended to ensure quality standards, good operational practices, safeguard health and safety and lay the basis for environmentally sound operations. It is believed that once this legislation comes into force, the biofuels market may increase its share of the fuel market through increased consumer confidence and accountability from the part of the operators involved.



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Proposed Amendments to Fuel Quality Directive 1998/70

Reduction of lifecycle greenhouse gas emissions per unit energy of fuel 5% by 2015 and 10% by 2020. → Probably this would have to be reached by introduction of biofuel with transport fuel hence the introduction also of :

Sustainability criteria;

Verification methods for compliance of sustainability;

Harmonised Calculation methods for Greenhouse gas impact.

.....for biofuels.

Proposed Directive on the promotion of the use of Energy from Renewables

Article 3(3) - Share of energy from renewable sources in transport in 2020 is at least 10% of the final consumption of energy in transport



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Targets

- Targets calculated on the basis of energy content of all petrol and diesel placed on the national market
- Target 2010 (Non-Binding) - 5.75% indicative target arising from Directive 2003/30/EC; Each country has to set its own indicative target
- Target 2020 (Binding) - 10% for the share of biofuels in overall petrol and diesel consumption by 2020 arising by the new energy package approved at the Spring Council 2007 requires member states



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National Targets for 2010

After taking into consideration the amount of biodiesel produced during the last three years and after noting the annual increase in consumption; the national indicative target for Malta for 2010 is set to 1.25%.



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This target is based on the following considerations:

- - land and water resources scarcity for the production of energy crops used in biofuel production. It is envisaged that local biofuel production will still rely on such locally available raw material as waste cooking oil or imported vegetable oil;
- - bio-Ethanol production is not seen as a viable option, at least at the current conditions and the share of biofuel is, therefore, to be reached by the consumption of biodiesel alone;
- - fossil fuel consumption is assumed to remain steady and the 1.25% target is calculated against the total fuel sales (energy content) of 2006;
- - discussions with producers in Malta to see their views on what outputs are expected to be produced in 2010; and
- - current petroleum storage and retailing infrastructure remaining unchanged.



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Current Situation

Currently Malta's consumption of biofuel consists exclusively of biodiesel

In 2007 there was a consumption of approximately **2,317,000 litres of biodiesel**, of this amount **2,059,000 were consumed in the transport sector**

Biodiesel accounted for *1.08% of total Petrol and Diesel used for road transport in 2007; Figure based on energy content*



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Current Situation

Currently biodiesel is retailed either as pure biodiesel (B100) at about 50% of Malta's petrol stations, or to industry

Member State can opt for different ways on how to promote Biofuels:

**Fiscal Incentive;
National Grants;
Substitution Obligation.**

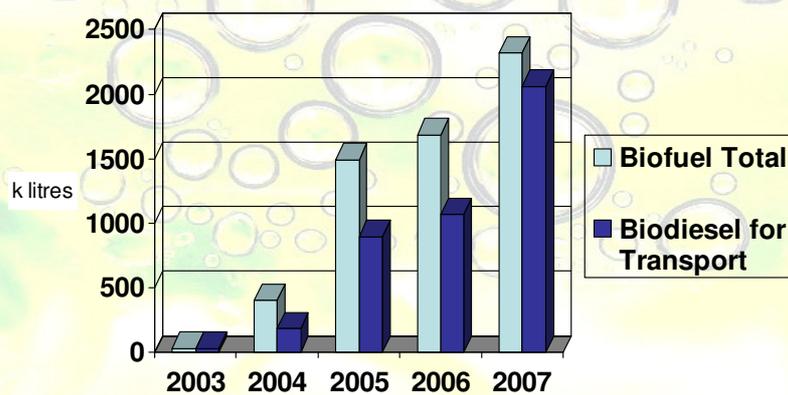
Malta's Case - Currently the biomass content (i.e. the percentage element) in biodiesel is exempted from the payment of excise duty

In 2006, the equivalent amount of foregone excise duty was of € 523,303



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Biofuel Sales 2003 to 2007



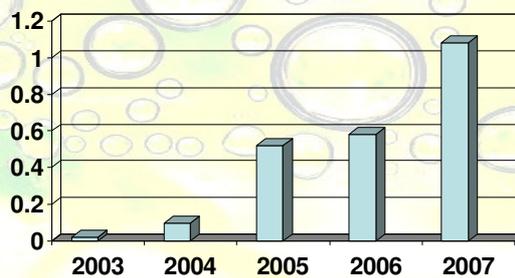
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Biofuel Consumption for Transport Sector

| | 2003 | 2004 | 2005 | 2006 | 2007* |
|--|-------|------|--------|--------|-------|
| Petrol Consumption (Million Liters) | 90.00 | 88.9 | 82.9 | 85.3 | 87.3 |
| Diesel Consumption (Million Liters) | 90.40 | 90.6 | 86.5 | 93.8 | 98.5 |
| Total Energy Content Petrol and Diesel (TJ) | 6035 | 6000 | 5676.1 | 6008.9 | 6242 |
| Biodiesel Consumption (Million Liters) | 0.03 | 0.18 | 0.895 | 1.006 | 2.059 |
| Biodiesel Energy Content (TJ) | 1 | 6.0 | 29.4 | 34.96 | 67.61 |
| % Biodiesel in Petrol and Diesel sales (% Energy Content) | 0.02 | 0.1 | 0.52 | 0.58 | 1.08 |

* - Not official data

% Biofuel in Transport Petrol and Diesel by Energy Content



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Way Forward (1)

Reach the 2010 target with a:

Holding a second national seminar on biofuel where during the days of the seminar distribution of leaflet and brochure.



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- Biofuels are a type of liquid or gaseous fuels produced from biomass
- One type of biofuel is Biodiesel
- Biodiesel is a diesel-equivalent processed fuel made from vegetable oils or animal fats
- Biodiesel can be blended with petroleum diesel at different concentrations in most modern diesel engines. All diesel engines can operate with mixtures of up to 20% biodiesel (B2), however certain engine manufacturers do not discourage and actually suggest higher blends of biodiesel, even up to pure biodiesel (B100)
- Biodiesel can be produced from different raw materials including rape, soy, palm oil, sunflower and waste cooking oil

Benefits of Biodiesel

- Biodiesel is made from raw materials which are renewable
- Biodegradable and non-toxic
- Produces less Particulate Matter (PM10), Carbon Monoxide and Hydrocarbons than petroleum diesel
- Produces about 25-40% less net-lifecycle carbon dioxide emissions than the petroleum diesel it replaces

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This Project is supported by:
Intelligent Energy **Europe**
(Contract No. EIE/06/013/312.442654)

Carbon/Efficiency Labeling
&
Bio-Blending for Optimising
Benefits
of Biodiesel & Additive Use



BIODIESEL

"The use of vegetable oils for engine fuels may seem insignificant today but such oils may become, in the course of time, as important as petroleum and the coal-tar products of the present time"

- Rudolph Diesel, inventor of the Diesel engine (1912)



Informative
Leaflet

Definition

Biodiesel is a renewable fuel for use in diesel engines as a substitute/additive for petroleum derived diesel. It can be produced from both animal and vegetable fat. It is produced by reacting fats and/or oils with sodium hydroxide in the presence of an alcohol catalyst, typically methanol to produce glycerin and a methyl ester. This methyl ester is then water or dry washed to produce biodiesel conforming to the European Norm EN 14214.

Properties

Biodiesel is a liquid which can vary in color between golden and dark brown depending on the raw material used as its feedstock. It is practically immiscible with water, has a high boiling point, low vapor pressure and has a density of about 0.88 g/cm³, which is less than that of water. Typical methyl ester biodiesel has a flash point of approximately 150°C. Compared to petroleum diesel which has a calorific value of 35.7 MJ/litre, biodiesel has a lower calorific value of 32.8 MJ/litre, however in practice at low concentrations engine performance is not affected.

Labelling of Biodiesel

Much of the world uses a system known as the "B" factor to state the amount of biodiesel in any fuel mix. Biodiesel can be mixed with petroleum diesel in different percentages, from 1 to 99, which is represented by a number following the letter B. For example, B20 is 20 percent bio-



diesel with 80 percent petroleum diesel and B100 is 100 percent biodiesel, with no petroleum diesel added.

Technological Requirements

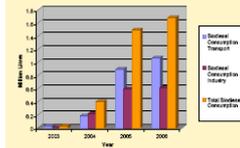
Biodiesel is basically comparable to petroleum diesel, thanks to its chemical similarity to the petroleum fuel. Despite this, biodiesel possesses certain features which may necessitate specific requirements when used in a diesel engine. The following are the main and most common requirements:

- Biodiesel poses different material-related requirements compared with petroleum diesel. All parts coming into contact with biodiesel, for example hoses and seals must be resistant to biodiesel. In particular biodiesel will degrade natural rubber gaskets and hoses in vehicles (mostly found in vehicles manufactured before 1992), although these tend to wear out naturally and most likely will have already been replaced with fluorinated elastomers, which is non-reactive to biodiesel.
- Biodiesel is very hard to evaporate, therefore, it can accumulate in engine oil especially during idling operation by commercial vehicles. Consequently, all manufacturers of commercial vehicles prescribe shorter oil-change intervals in order to avoid damage by diluted engine oil.
- After extended periods of running on pure petroleum diesel, vehicles converted to biodiesel should undergo a one-time fuel filter replacement after 2-3 tankfuls of biodiesel outside the regular service intervals. This prevents old depositions of petroleum diesel removed

by the flow of biodiesel through the fuel system from blocking the new fuel filter.

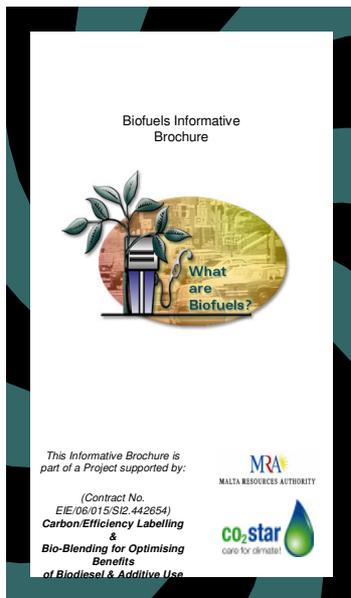
Availability in Malta

The use of biodiesel in Malta has been on the increase during the past years, with annual production and consumption continuously surpassing those of previous years.



Currently, biodiesel produced from either locally sourced recycled waste cooking oil or imported vegetable oil, is the only type of biofuel available on the Maltese market, and in this regard local privately owned companies have been very active in producing and promoting biodiesel for local consumption.

Only one of these companies supplies biodiesel for the transportation sector and a number of petroleum filling stations retail biodiesel from their pumps. Around 30 petroleum filling stations, equivalent to about 40% of the total number of stations, are in fact now retailing biodiesel. Presently petroleum filling stations are permitted to store and dispense 100% biodiesel only.



Biofuels Informative Brochure

Development

Benefits – Environmental & Security of Supply

Types of Biofuel

Production Methods of Biodiesel

Applications and uses of Biodiesel:

Diesel Engines

Aviation

Heating Oil

Precautions when using Biodiesel

Regulation and National Targets

Availability of Biodiesel in Malta



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Way Forward (2)

Post 2010:

To meet larger targets, Malta has to import biofuels in a significant amount.

Government is considering what best legislative model to adopt to reach this target. However National Legislation 278 of 2007 established in October 2007 indicated in Regulation 33 that:

“The Authority may require any authorised provider to include, in any petroleum product which is wholesaled in the inland fuel market, an amount of biofuel content:

Provided that such an amount shall not exceed that specified in any applicable standard or Directive”

This would mean the substitution obligation for biofuel upon any importer or wholesaler of petroleum products.



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