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**Direcção Geral  
de Geologia e Energia**

**(Directorate-General**

**for Geology and Energy)**

**First national report on the promotion of the use of biofuels or other  
renewable fuels for transport in Portugal - Directive 2003/30/EC**

**(2004)**

**September 2004**

## **1. INTRODUCTION**

This report describes the current situation regarding the promotion of the use of biofuels or other renewable fuels for transport in Portugal. It has been drawn up in accordance with Article 4(1) of Directive 2003/30/EC, which requires Member States to forward each year to the Commission information which will enable it to monitor the implementation of the Directive and Member States' efforts to achieve this.

The Member States are required to report to the Commission on:

- measures taken to promote the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes,
- national resources allocated to the production of biomass for energy uses other than transport, and
- total sales of transport fuel and the share of biofuels, pure or blended, and other renewable fuels placed on the market for 2003.

In their first report, the Member States must also give their national indicative targets for the first phase, i.e. the quantity of biofuels and other renewable fuels as a percentage of all the petrol and diesel used for transport placed on the market by 31 December 2005.

## **2. BACKGROUND**

The promotion of the use of biofuels and other renewable fuels forms part of a wider EU strategy aiming to replace 20% of mineral oil derivatives used in the road transport sector with alternative fuels by the year 2020. This objective was set out in

the Commission Green Paper “Towards a European strategy for the security of energy supply” and the aim is twofold: to improve security of supply and reduce exhaust gas emissions.

From amongst the many alternative fuels and technologies available, the Commission presents three options to be introduced by 2020: biofuels, natural gas and hydrogen/fuel cells.

The following figures are proposed:

<b>Year</b>	<b>Biofuel (%)</b>	<b>Natural Gas (%)</b>	<b>Hydrogen (%)</b>	<b>Total (%)</b>
2005	2	-	-	2
2010	6	2	-	8
2015	(7)	5	2	(14)
2020	(8)	10	5	(23)

The figure of 2% proposed for biofuels by 2005 presupposes the possibility that the situation in Member States which are more advanced in this field may be extrapolated to the others. The figure of 6% proposed for 2010 presupposes an active biofuel promotion policy and is based on the existing potential in the agriculture and waste processing sectors.

As regards natural gas, the Commission stresses that the need to set up a new distribution infrastructure and the modification of vehicles are short/medium-term

obstacles, since it believes large-scale modification of existing vehicles is unlikely to occur. The penetration of this fuel will depend on the marketing of new modified vehicles. The proposed scenario of 2% in 2010 and 5% in 2015 is therefore optimistic and presupposes an active policy in this area.

For hydrogen, progress still needs to be made in storage and fuel cell technology and heavy investment is required in manufacturing and distribution equipment. It is therefore unrealistic to expect this technology to be introduced before 2015.

The introduction of biofuels is therefore the most likely scenario in the short and medium term, given that when blended with conventional fuels (diesel and petrol) within certain limits they can be used in vehicles which are currently on the market, and blending does not involve any modification of the fuel storage and distribution systems. These advantages are compatible with the objectives of reducing dependence on oil, ensuring security of supply and reducing CO<sub>2</sub> emissions.

At the outset biofuels would not be Portugal's main choice as an alternative to conventional fuels. Natural gas, recently introduced in Portugal, would or perhaps will be the most logical choice. This is also one of the options presented by the Commission in its Communication COM(2001)547 final of 7 November 2001. The promotion of natural gas also serves national energy policy objectives such as reducing dependence on oil, diversifying energy production and sources of supply, and reducing CO<sub>2</sub> emissions.

Where agriculture is concerned, Portugal has limited capacity for encouraging the development of a biofuel sector, so it will probably have to import nearly all the raw material or processed products. There could be no benefits at all in respect of reducing imports or ensuring security of energy supply. Given that Portugal clearly

has limited potential for producing the raw material for biofuels, it would be more realistic to set a less ambitious target, at least for the first phase (December 2005).

### **3. MEASURES TAKEN TO PROMOTE THE USE OF BIOFUELS OR OTHER RENEWABLE FUELS TO REPLACE DIESEL OR PETROL FOR TRANSPORT PURPOSES**

#### **a. Transposition of the Directive**

The transposition of Directive 2003/30/EC was the responsibility of the Direcção Geral de Geologia e Energia [Directorate-General for Geology and Energy] in the Ministry of Economic Activities and Labour (formerly the Ministry of the Economic Affairs) as it concerned matters which fell within its remit. A study was carried out, leading to a report on the national strategy to be adopted in pursuit of the objectives laid down in the Directive. The report, entitled “Biofuels: Which strategy for Portugal?” set out three options for attainment of the targets:

- Reducing the tax burden on biofuels compared to the tax on the fuels they replace, notably the ISP (tax on fuel products). In order to avoid loss of tax revenue, this reduction could be offset by increasing tax revenue from other sources, in particular the ISP on mineral oil derivatives.
- Fixing compulsory percentage for biofuel content in transport fuels. Since there would be no tax discrimination, this would result in a slight increase in the final price of fuel, given the higher cost of biofuels.
- Establishing voluntary agreements with fuel producers and distributors, and taking measures to inform consumers or raise institutional awareness of the use of biofuels in general. Possibility of other compensatory measures, such as reducing other taxes.

The report analysed fuel consumption trends in Portugal up to 2010, giving average rates of increase in demand ranging from 2.8% to 3.5% for petrol and from 2.9% to 3.9% for diesel. It also considered the contribution required from agriculture to support national biofuel production, both for alcohol and biodiesel, in order to meet the 2005 targets. The report estimated that 95 000 to 100 000 hectares of farmland would be needed in the case of high productivity and 275 000 to 290 000 hectares in the case of low productivity.

Given the interdisciplinary nature of the subject matter, involving several departments and Directorates-General of State, hence several Ministries, and also many economic operators, a number of consultations were carried out during the first half of 2004 to exchange impressions and contributions and to assess national interest from a market and institutional standpoint, with a view to outlining a strategy for biofuel promotion and the transposition of Directive 2003/30/EC.

Following the consultation exercise a basic text was drafted to transpose the Directive. This sought to take account of the concerns of economic operators in the sector and the interests of the Portuguese State regarding taxation and national energy policy priorities. The preliminary draft Decree-Law already submitted to the Government and undergoing final revision prior to publication sets out the following incentives for biofuel use:

- exemption from excise duties (in particular from the ISP – tax on fuel products) up to a quota set every year, which in 2005 should correspond to 1% of the market in fuels for road transport purposes;
- the biofuel produced in pilot projects may be covered by the ISP exemption beyond the quota fixed for that year, subject to conditions to be laid down by the

Direcção Geral de Alfândegas e Impostos Especiais de Consumo [Directorate-General for Customs and Excise];

- it provides for the possibility of imposing a quota for biofuels in transport fuels, in cases where their incorporation in the preceding year was less than the figure laid down;
- the text also provides for the possibility of establishing voluntary agreements on the use of biofuels in blends higher than 15% with public or private undertakings operating public passenger transport fleets.

**b. Other measures**

At the same time there have been a number of events to publicise biofuels, including debates on their introduction in Portugal and demonstrations of the production of biofuels from waste cooking oil and their use.

As part of a public awareness-raising campaign, 18 Carris buses fuelled by a 10% blend of biodiesel are being used in Lisbon.

**4. NATIONAL RESOURCES ALLOCATED TO THE PRODUCTION OF BIOMASS FOR ENERGY USES OTHER THAN TRANSPORT**

Since Community Support Framework III began in 2000, the Portuguese State has provided incentives for installing plants generating energy from renewable resources and for projects using renewable energy sources for heating and refrigeration. Some of these projects concern biomass and to date EUR 2 475 000 have been allocated, divided among 21 projects (75% ERDF funds, 25% Portuguese State budget).

Secondly, Portuguese legislation guarantees an outlet for electricity produced from renewable sources into the SEP – public service electricity grid – at a favourable rate which, for biomass, is approximately EUR 0.07/kWh.

The available data on energy production from biomass since 2000 are set out below.

Table 1 – Production of energy from biomass.

<b>Year</b>	<b>Electrical energy</b>		<b>Thermal energy</b>	<b>Total</b>
	<b>GWh</b>	<b>t.o.e.</b>	<b>t.o.e.</b>	<b>t.o.e</b>
2000	1 551	449 790	1 185 000	1 634 790
2001	1 600	464 000	1 204 000	1 668 000
2002	1 732	502 280	1 529 800	2 032 080
2003	1 777	515 330	1 515 600	2 030 930

These figures do not take account is taken of the consumption of biomass for central heating.

Regarding energy crop cultivation, unfortunately there is almost no irrigated land available in Portugal (particularly compulsory set-aside areas). In the 2000-2001 marketing year, the irrigated area declared fallow was nil, and in 1999-2000 it was just over 14 000 hectares.

Irrigated areas used for growing food crops are not switching to energy crops, at least not to any significant extent. In recent marketing years, irrigated areas used for

potential energy crops, such as sunflower or rape, totalled less than 17 000 hectares for sunflower, while for rape they seldom exceed 1 000 hectares. Furthermore, given that for some food crops, such as maize, wheat, sunflower or beet, the success rate never reaches 50% and that for wheat and sunflower it is around 10%, one cannot have too many illusions about the development of energy crop farming.

Following the reform of the CAP in 2003, farmers began to receive production subsidies based on the amounts received from 2000 to 2002, provided they maintained the land in production, irrespective of the crops grown on it. In addition, they received a new subsidy of €45/ha as an incentive to grow energy crops. In return, they were required to sign a contract with processing companies to which they would deliver their produce.

It is true that Portuguese farming may have something to contribute to the development of this new sector where maize (for bioethanol production) is concerned, as there is a shortage of that crop in the EU. However, it will be negligible where oleaginous crop production is concerned, because of low productivity.

**5. TOTAL SALES OF TRANSPORT FUEL AND THE SHARE OF BIOFUELS, PURE OR BLENDED, AND OTHER RENEWABLE FUELS PLACED ON THE MARKET IN 2003**

The figures for total sales of fuel for transport purposes in 2003 are set out below.

Table 2 – Total sales of fuels for road transport purposes in 2003.

<b>Fuel</b>		<b>Tonnes</b>	<b>t.o.e.</b>
<b>Petrol</b>	Super plus additives	183 320	

	Unleaded 98	485 487	
	Unleaded 95	1 335 689	
	<b>Total</b>	<b>2 004 096</b>	<b>2 150 395</b>
<b>Diesel</b>	Road transport	4 800 265	
	Agricultural use	329 093	
	<b>Total</b>	<b>5 129 358</b>	<b>5 360 179</b>
<b>LPG – Motor vehicle gas</b>		19 702	22 460
<b>Natural gas</b>		9 600 (m <sup>3</sup> )	8
		<b>Total</b>	<b>7 533 042</b>

No sales of biofuels or other renewable fuel were recorded.

#### 6. INDICATIVE TARGETS FOR THE FIRST PHASE (31 DECEMBER 2005)

The targets laid down in the preliminary draft bill transposing Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 for the incorporation of biofuel in conventional fuel by 31 December 2005 are:

- **50 000 tonnes of biodiesel**
- **15 000 tonnes of bioethanol**

These figures represent approximately 1% of the fuel sold to the road transport sector, to which must be added **18 000 tonnes of biodiesel** covered by voluntary

agreements with public or private undertakings operating public passenger transport fleets. This raises the figure for biofuel incorporation to approximately 1.15% of fuel sales in 2003.

The target set for 2005 is below the indicative target laid down in Directive 2004/30/EC. This is due to:

- Portugal's low level of agricultural biomass production for energy purposes, which conditions the procurement of raw material by the Portuguese biofuel industries;
- the delay in starting up potential biofuel production units, essentially because they are awaiting a decision on how biofuels are to be promoted, *inter alia*.

Lisbon, 29 September 2004