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**Sixth Report for the European Commission**

pursuant to **Article 4(1)** of Directive **2003/30/EC** of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport

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## **Introduction**

This report is submitted pursuant to Article 4(1) of Directive 2003/30/EC of the European Parliament and of the Council on the promotion of the use of biofuels or other renewable fuels for transport the wording of which is as follows:

"...Member States shall report to the Commission, before 1 July each year, on:

- the measures taken to promote the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes,
- the national resources allocated to the production of biomass for energy uses other than transport, and
- the total sales of transport fuel and the share of biofuels, pure or blended, and other renewable fuels placed on the market for the preceding year. Where appropriate, Member States shall report on any exceptional conditions in the supply of crude oil or oil products that have affected the marketing of biofuels and other renewable fuels..."

In these reports, explanations will be provided for the differences between the national targets and the reference values referred to in Article 3(1)(b), which may be based on the following factors:

- a) objective factors such as the limited national potential for production of biofuels from biomass;
- b) the volume of resources allocated to the production of biomass for energy uses other than transport and the specific technical or climatic characteristics of the national market for transport fuels;
- c) national policies allocating comparable resources to the production of other transport fuels based on renewable energy sources and consistent with the objectives of this Directive.

## 1. Measures taken to promote the use of biofuels or other renewable fuels to replace diesel or petrol for transport purposes

### Legislative framework of the internal market - for the promotion of biofuel use in 2008

In 2008 the introduction of biofuels to the motor fuels market was enacted by:

- Ø Act No. 98/2004 Coll. on excise duty on mineral oil , as amended by subsequent regulations (with effect from 01.05.2004). From the current version of this law it follows that
  - under Paragraph 19(6) the keeper of a tax warehouse, which is an enterprise for the production of mineral oil as stated in Paragraph 6(1)(a) and (d) , is entitled, on the basis of a license to produce such a mixture in the presence of a person assigned by the customs office, to produce the following mixtures of mineral oil:
    - a) mineral oil of the CN codes 2710 11 41, 2710 11 45 or 2710 11 49 in which the content of biogenic material (ETBE) as stated in Paragraph 4(7)(c) is up to 15%, if the biogenic material was produced by this licensed warehouse keeper,
    - b) mineral oil of the CN code 2710 19 41, 2710 19 45 or 2710 19 49 and a biogenic material stated in Paragraph 4(7)(a) (FAME)
  - under Paragraph 6(5), for the mineral oil mentioned
    - a) in Paragraph 19(6)(a) a tax rate shall be applied in accordance with Paragraph 1(a), reduced by 47 percent of the share of the biogenic material (ETBE) stated in Paragraph 4(7)(c) in the mixture, up to a maximum of 7.05 %,
    - b) in Paragraph 19(6)(b) a tax rate shall be applied in accordance with Subsection 1(d), reduced by the percentage share in the mixture of the biogenic material stated in Paragraph 4(7)(a) , up to a maximum of 5 % (FAME).
  - under Paragraph 6(1), the tax rate is established as follows:
    - a) petrol falling within the CN codes 2710 11 41, 2710 11 45 or 2710 11 49, SKK 15 500 /1 000 litres,
    - b) gas oil falling within the CN codes 2710 19 41, 2710 19 45 and 2710 19 49, with the exception under Paragraph 7(1),SKK 14 500/1 000 litres
  - under Paragraph 4(7), biogenic material consists of
    - a) the vegetable oils mentioned in chapter 15 of the customs rate tariff, including those that are chemically modified, as well as esters made from these, if the content of hydrocarbons therein does not exceed 5 % of the total volume,
    - b) ETBE produced from ethanol falling within the CN code 2207 20 00, which is not of synthetic origin.
- Ø Slovak Government Regulation No 246/2006 Coll. on the minimum quantity of fuel materials produced from renewable sources in petrol and diesel fuels on the Slovak market (with effect from 1 May 2006). Producers and vendors are obliged to offer the minimum quantities of biofuels (or other renewable fuels) in petrol and diesel fuels for transportation purposes, expressed
  - up to 31 December 2006 as a reference value of 2%, calculated on the basis of the energy content of the total quantity of petrol and diesel fuels placed on the market,

- from 1 January 2007 to 31 December 2008 as a reference value of 2%, calculated on the basis of the energy content of the total quantity of petrol and diesel fuels placed on the market,
- from 1 January 2009 to 31 January 2009 as a reference value of 3.4%, calculated on the basis of the energy content of the total quantity of petrol and diesel fuels placed on the market.
- from 1 January 2010 to 31 December 2010 as a reference value of 5.75%, calculated on the basis of the energy content of the total quantity of petrol and diesel fuels placed on the market.

### **Notification of state aid for the implementation of the biofuel programme in 2008**

Within the framework of the notification procedure, the European Commission issued a decision (the written notice of 19 July 2007) approving the "State aid N 360/2006 – Slovakia. Advantageous tax treatment for the utilisation of fuels from renewables, pursuant to Directive 2003/96/EC (Biofuels)".

Of the key measures from the approved scheme it follows that:

- exemption from excise duty applies to petrol blends with ETBE and diesel blends with esters and the reduction in excise tax for these fuel blends is set at a level of 7.05% or 5% by volume;
- the excise duty reduction for biofuels is granted only to companies that operate as tax warehouses;
- the measure is due to apply for six years (from the date on which the Act on excise duty from mineral oil comes into effect) under the conditions established thereby and the excise duty reduction shall be provided from state funds; this measure is intended to promote companies that produce and supply biofuels on the Slovak market.

### **Practical implementation of the biofuel programme in 2008**

The implementation of the biofuel programme commenced in 2008 and was achieved by means of the following chain of economic operators: grower/cultivator - processor - producer of bio-ingredients and motor fuels - distributor - consumer/customer. The implementation involved:

- the blending of esters in some of the diesel fuels of quality standard STN EN 590, and/or diesel fuel with added esters of quality standard EN 590 that were imported onto the domestic market;
- the blending of ETBE (ethyl-tert-butyl-ether) with petrol of quality standard STN EN 228 and the subsequent introduction of this product onto the domestic market.

The implementation of the biofuel programme is quantified as the achievement of the reference value for biofuels, which is set at 2%. The reference value actually achieved for 2008 is expressed as 2.65% of the energy content of the total quantity of petrol and diesel.

The achievement of the reference value for 2008 is based on the practical implementation of the so-called "obligatory supply" for establishing biofuels on this market, in accordance with Directive 98/70/EC relating to the quality of petrol and diesel fuels, as amended by Directive 2003/17/EC. When compiling its report for 2008 the Ministry of the Economy of the Slovak Republic used information from suppliers and producers of motor fuels that was provided under Government Regulation No Government Regulation No 246/2006 Coll.

## **2. National resources allocated to the production of biomass for energy uses other than transport**

In the Slovak Republic biomass with a value of 147 PJ has the greatest technically usable potential. It is expected that the greatest growth in the use of this fuel from the current 17 PJ to 66 PJ by 2020 will be in areas such as:

- heat production - replacement of natural gas;
- combined heat and power - especially as biogas and/or wood-gas;
- co-combustion of biomass and coal;
- production of biofuel for transport.

### Support programmes

In the Slovak Republic the following forms of support exist for the use of biomass:

- a) Programme for the greater use of biomass and solar energy for domestic use
  - b) Operational Programme Competitiveness and Economic Growth
1. Aid is provided in the form of a non-returnable financial contribution for households. Aid will be provided for installed equipment listed in the programme - biomass boilers and solar collectors - on the basis of an application, to which should be attached an authentic copy or an officially certified copy of an invoice or other relevant document on the purchase of the equipment. Expenditure from the state budget amounts to EUR 8 million.
  2. The Operational Programme Competitiveness and Economic Growth for the 2007-2013 programming period was drawn up by the Ministry of the Economy of the Slovak Republic and is the basic document for drawing down structural funds and supporting the development of innovation, industry, tourism and supporting progressive technology in the energy sector. Projects aimed at the utilisation of biomass are supported within the framework of measure 2.1 - *Increasing the energy effectiveness in terms of production and consumption and the introduction of advanced technology in the energy sector.*

### **3. Total sales of transport fuel and the share of biofuels, pure or blended, and other renewable fuels placed on the market for the preceding year**

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#### **1. The Slovak internal market for motor fuels from the date on which the government regulation on biofuels came into effect**

Slovak Government Regulation No 246/2006 Coll. on the minimum quantity of fuel materials produced from renewable sources in petrol and diesel fuels on the Slovak market (hereinafter " the government regulation on biofuels"), which took effect from 1 May 2006, transposed Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport into the law of the Slovak Republic.

In 2008 the Slovak internal market for motor fuels had a total energy value (including alternative motor fuels) expressed as 94.215 PJ and was clearly dominated by traditional fossil fuels (petrol and diesel), which accounted for almost 91% of the market. (In 2006 the internal market for motor fuels had a total energy value, including alternative motor fuels, expressed as 80.669 PJ and in 2007 88.559 PJ. Fossil fuels, i.e. petrol and diesel, were dominant).

The biofuel programme was implemented in 2006, 2007 and 2008 as:

- the blending of esters with some of the diesel fuels produced to quality standard STN EN 590 (in the 2004 version) and/or diesel fuels with added esters of quality standard EN 590 (in the 2004 version) that were imported onto the domestic market;
- the blending of ETBE (ethyl-tert-butyl-ether) with some of the petrol of quality standard STN EN 228 (in the 2004 version) and the subsequent introduction of this product onto the domestic market.

The interim Slovak Technical Standard STN P 65 6535, which was issued by the Slovak Technical Standards Office with effect from 1 January 2009, was approved in November 2008. Blended fuels for diesel engines with a 30% content by volume of fatty acid methyl ester (FAME). The aforementioned fuel, designated as fuel B30, is intended for adapted diesel motors, for example those in enclosed lorry parks, stationary machinery or non-road vehicles. This interim Slovak Technical Norm is intended for the practical verification of the requirements for fuel with such a high biofuel content up to July 2011. It is expected that the aforementioned fuel will contribute to the greater utilisation of biofuels in transport in the Slovak Republic.

First generation biofuels have become established on the Slovak motor fuel market as a low percentage blend of biomaterials with hydrocarbon fuels, distributed via the existing infrastructure (distribution system and sales points). Replacing some of the fossil motor fuel with biofuel is the simplest method, mainly because it may be used in all types of motor vehicle (the customer need not be informed about the presence of the biofuel in the resulting motor fuel).

The obligation to introduce biofuels onto the domestic market (as "obligatory placing") was set for 2008 in the form of a reference value of 2%. As a result, each economic operator is obliged to introduce biofuels to the market in an amount that corresponds to this reference value, calculated from the energy content of the total quantity of motor fuels related to the business activities of the economic operator in question for 2008.

The fulfilment of the biofuel programme is shown in the following table:

Fuel commodity	2006		2007		2008	
	petrol, (t; m3)	<b>642 000</b>	<b>856 000</b>	<b>637 000</b>	<b>849 333</b>	<b>737 517</b>
petrol, (toe)	686 940	-	681 590	-	789 143	
ETBE, (t; m3)	1 190	1608	37 000	50 000	23 232	31 241
ETBE, (toe)	336	-	10 434	-	6551	-
ETBE content in blend, (% volume)	-	*)	-	<b>5.89</b>	-	<b>3.16</b>
reference values (% ETBE in energy content of petrol)	*)	-	1.53	-	0.83	-
diesel, (t; m3)	<b>1 168 000</b>	<b>1 390 476</b>	<b>1 303 000</b>	<b>1 551190</b>	<b>1 411 751</b>	<b>1 687 576.603</b>
diesel, (toe)	1 208 880		1 348 605		1 461 162	
esters. (t; m3)	15 790	17 943	52 000	59 091	65 357	74 199
esters, (toe)	12 821	-	42 224	-	53 070	-
ester content in blend, (% volume)		*)	-	<b>3.81</b>	-	<b>4.396</b>
reference values (% of esters in energy content of diesel)	*)	-	3.13	-	3.63	-
petrol + diesel aggregated, (toe)	<b>1 895 820</b>		<b>2 030 195</b>		<b>2 250 305</b>	
total reference values (% of bio-ingredients in energy content of motor fuels)	<b>1.041</b> *)		<b>2.59</b>		<b>2.65</b>	

*Source of statistical data:*

*Slovak Association of Petroleum Industry and Trade (SAPPO) - data for ETBE and ester commodities (for 2006),*

*Administration of State Material Reserves of the Slovak Republic (SŠHR SR) - data for petrol and diesel commodities (for 2006 and 2007), data for ester and ETBE commodities (for 2007).*

*Information from suppliers and suppliers provided to the Ministry of the Economy of the Slovak Republic under Government Regulation No 246/2006 Coll. - data for petrol and diesel commodities, data for ester commodities and ETBE data for 2008*

Calculation co-efficient used for energy content of fuels:

1 tonne of petrol = 1.070 toe; 1 tonne of diesel = 1.035 toe; 1 tonne of ester = 0,812 toe;  
1 tonne of bioethanol = 0.600 toe; 1 tonne of ETBE = 0.282 toe (as a product of 0.47 x 0.600).

Average density data used when converting mass data to volume data:

density of petrol is	750 kg/m <sup>3</sup>	(0.75 t/m <sup>3</sup> )
density of diesel is	840 kg/m <sup>3</sup>	(0.84 t/m <sup>3</sup> )
density of ETBE is	740 kg/m <sup>3</sup>	(0.74 t/m <sup>3</sup> )
density of esters is	880 kg/m <sup>3</sup>	(0.88 t/m <sup>3</sup> )

Annotation (\*);

The implementation of the biofuel programme for 2006 is quantifiable as the achievement of the relative reference value of 1.333%, which is calculated from the date on which the government regulation on biofuels came into effect (as eight twelfths of 2%):

- The reference value actually achieved for the eight months is expressed as c. 1.041% of the energy content of the total amount of petrol and diesel introduced onto the domestic market over this period

(the fulfilment of the reference value for 2006 is based on the practical implementation of "obligatory supply" for establishing biofuels on this market, in accordance with Directive 98/70/EC relating to the quality of petrol and diesel fuels, as amended by Directive 2003/17/EC);

- the quantity of bio-ingredients (esters, ETBE) introduced to the market over a period of 8 calendar months, i.e. from the date on which the government regulation on biofuels came into effect. (the practical implementation of the biofuels programme did not commence until the second half of 2006;

The blending of esters with diesel, or the importation of such blended fuels, commenced in August 2006, whilst on the other hand the production of ETBE from bioethanol began at the Slovnaft Bratislava company at the end of 2006 and the blending of ETBE with petrol officially commenced in 12/2006).

## **Conclusion**

The practical implementation of the biofuels programme in Slovakia commenced in the second half of 2006 and under EC regulations may last up to three years (in practical terms, up to the end of the first half of 2009), leading to the creation of an important domestic biofuel market, along with a simultaneous corresponding expansion in manufacturing capacity for biofuels (bio-ingredients).

Scientific studies have shown recently that with the greater use of biofuels (especially of the MERO type) a higher volume of nitrogen oxides are emitted than when fossil fuels are combusted. As greenhouse gases (emissions), nitrogen oxides are 269 times more efficient than carbon dioxide, which is emitted only in the same quantities that are consumed during the growth of green matter for the relevant biofuel.

All other aspects relating to subsequent fulfilment of the biofuel programme are elaborated further in a document entitled "Draft plan for greater use of biofuels in transport in the Slovak Republic ", which was debated by the Slovak Parliament in 2008 and which was passed in Decree No 220/2008.

On 23 April 2009, the European Parliament passed the Directive on the promotion of the use of energy from renewable energy sources and on amendments and subsequent repeal of Directives 2001/77/EC and 2003/30/EC. The newly-passed directive establishes a joint framework for the introduction of energy from renewable sources. Binding national targets are thereby set for the total share of energy from renewable sources in gross final energy use and targets for the proportion of energy from renewable sources in transport (10%). The criteria for the long-term sustainability of biofuels and bioliquids are determined in this directive. With regard to the aforementioned Directive, the Slovak Republic shall pass an action plan for energy from renewable energy sources in the first half of 2010, in which national targets for the proportion of energy from renewable energy sources to be used in transport shall be set.