REPORT ON MEASURES ENCOURAGING THE USE OF BIOFUELS AND OTHER RENEWABLE RESOURCES

(Implementation of the provisions 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)

Country - LITHUANIA
2005

Introduction

This report provides information about the implementation of the provisions 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 (hereinafter referred to as "Directive 2003/30/EC") in Lithuania in 2005.

National legal framework

The provisions of Directive 2003/30/EC have been transposed into the Republic of Lithuania Law on Biofuel, Biofuels for Transport and Bio-Oils (adopted by the Seimas of the Republic of Lithuania on 5 February 2004, *Official Gazette*, 2004, No 28-870), Article 8(3) of which required measures to be introduced to ensure that by 31 December 2005 the proportion of biofuels for transport amounted to at least 2%, calculated on the basis of energy content, of all petrol and diesel for transport purposes placed on the national market, and – by 31 December 2010 – at least 5.75%. The market in biofuels for transport failed to develop over the period between the adoption of the law and the end of 2005 as a result of higher prices of mineral fuels for transport in relation to biofuels (even after excise tax reduction) and the unwillingness of producers and marketers of mineral fuels for transport to invest in production and fuel-mixing technologies.

To implement the objectives of Directive 2003/30/EC the following national legal acts governing the mandatory use of biofuels for transport in Lithuania have been adopted:

- The amendment of the 'Rules for trade in petroleum products, biofuel, bio-oil and other flammable liquid products in the Republic of Lithuania', as approved by Order No 4-106 of the Minister of Economy of the Republic of Lithuania of 14 March 2005;
- Order No 4-96/D1-139/3-77 of the Minister of Economy, the Minister of Environment and the Minister of Transport and Communications of the Republic of Lithuania of 9 March 2005 'On the amendment of Order No 4-105/131/3-172 of the Minister of Economy, the Minister of Environment and the Minister of Transport and Communications of the Republic of Lithuania 'On the approval of mandatory quality indicators of petroleum products and liquid fuel used in Lithuania.''

The legal acts stipulate that, as of 31 December 2005, new requirements will be applicable to the fuels sold and consumed in Lithuania: 95 RON motor petrol must be produced using the additive bio-ethyltertiarybutylether (hereinafter referred to as "bio-ETBE"), while 95 RON motor oil, imported or brought in and sold or consumed in the country but produced without using ETBE, must contain 3% or 5% of bioethanol. Diesel fuel must contain 3% or 5% of fatty acid methyl ester (FAME) produced from vegetable oils or fats of animal origin.

Mandatory mixing was introduced with the general consensus of all the interested parties in the market in fuels for transport. At the time of writing, the Ministry of Economy of the Republic of Lithuania has not yet received a single complaint concerning the management of this arrangement.

Financial instruments

The following financial instruments are used to encourage the production and use of biofuels for transport in Lithuania:

1. Article 38(4) of the Republic of Lithuania Law on Excise Duty (*Official Gazette*, 2001, No 98-3482; 2004, No 226-802) provides for excise relief on energy products produced from materials of biological origin, i.e. the excise tax set for the said products has been reduced at a rate proportionate to the amount of biological additives (in percentage points) per tonne of a product (currently, a zero excise is levied on biological fuels for transport.)

2. On 15 December 2005, the Seimas of the Republic of Lithuania adopted the Law Supplementing and Amending the Law on Excise Duty (*Official Gazette*, 2005, No 153-5633), providing for excise relief (zero excise rate) on dehydrated ethyl alcohol. The adoption of this law resulted in better economic terms for the production of biofuels for transport, yet it was impossible to take advantage of the relief without the adoption of relevant secondary legislation (adopted in the first quarter of 2006):

2.1. The 'Procedure for the application of the excise relief on dehydrated ethyl alcohol used in the production of bio-ethyltertiarybutylether in line with the procedure set forth by the Republic of Lithuania Law on Biofuel, Biofuels for Transport and Bio-Oils', as approved by Order No 1K-046 of the Minister of Finance of 6 February 2006 (*Official Gazette*, 2006, No 16-569);

2.2. The 'Rules on issuing permits to acquire (use) dehydrated ethyl alcohol exempt from excise and used in the production of bio-ethyltertiarybutylether', as approved by Order No VA-18 of the Head of the State Tax Inspectorate under the Ministry of Finance of the Republic of Lithuania of 21 February 2006 (*Official Gazette*, 2006, No 25-862);

3. Republic of Lithuania Law on Environment Pollution Tax (*Official Gazette*, 2002, No 13-474; 2005, No 47-1560) (in force since 1 January 2006) provides for an exemption from the environment pollution tax for:

- natural and legal entities polluting through vehicles using biofuels that come up to the established standards and having submitted the documents confirming that such fuels were indeed used;
- natural and legal entities that have produced the documents confirming that biofuel was indeed used, for the emissions building up when using biofuel.

4. The 'Rules for financing the development of the production of biofuels for transport', as approved by Order of the Minister of Agriculture providing for promotion of the development of biofuel production by making agricultural produce available for non-nutritional applications.

Under these Rules, the producers of biofuels may claim in 2005 payments for cereals that are used for production of biofuel: refunds of LTL 160 per tonne of rape grain and LTL 60 per tonne of cereal grain. The 'Rules for financing the development of the production of biofuels for transport in 2005' stipulate that the maximum refundable amount of rape grain in 2005 is 33 000 tonnes, and 22 084 tonnes in the case of cereal grain. There are plans to increase the cereal grain refunds to LTL 114 as of 2006, following a favourable decision by the European Commission regarding state aid for cereal grain used in the production of bioethanol (*Official Gazette*, 2005, No 130-4695.)

5. The 'Procedure to encourage the production and purchase of electric power produced using renewable and waste energy resources' encourages the production of electric power in wind, biomass and solar-powered plants and in hydro-power plants of less than 10 MW

capacity. The said power plants are connected to the existing networks of power companies in line with the procedure laid down by the legal acts, and by allowing the producers of such energy a 40% connection fee discount.

Local renewable and waste resources used in the production of biofuel (to generate energy)

The purpose of the 'Programme to encourage the production and use of biofuel in 2004-2010' (approved by Resolution of the Government of the Republic of Lithuania, *Official Gazette*, 2004, No 133-4786) is to ensure the development of biofuel production from raw materials originating in the Republic of Lithuania, as well as the use of biofuel. The main objectives include increasing the production of electric power generated using biogas, wood and straw to 0.204 TWh per annum, and the total electric power to 10.31 TWh per annum, by the year 2010; encouraging the cultivation and preparation of raw materials for biofuel; promoting the use of biofuel; promoting research into biofuel production and use; and introducing measures for training, information and consulting on biofuel issues.

The potential for national energy production using biofuel is quite large, as around 1 million tonnes of municipal waste builds up in Lithuania every year. Biodegradable waste amounts to around 0.3-0.5 million tonnes per year in the total flow of municipal waste. The biodegradable materials may be diverted into energy production once they have been separated from other types of municipal waste and following processing in biogas reactors. About 300 000 - 500 000 ha of arable land remains unused in the country every year, and there is also low-yielding land where energy crops could be grown – 10-15% of agricultural land of the country may be used to cultivate such crops. Early data suggest that around 0.72 TWh of power per year could be produced from energy crops. The straw potentially usable in energy production totals around 870 000 tonnes per year (3.59 TWh.)

There are six biogas plants in Lithuania, namely 2 plants processing municipal sludge, 2 plants processing food industry waste and 2 plants processing animal manure along with the waste of food industry companies.

The total capacity of the biogas plants is around 17.7 MW (thermal power about 15.6 MW, electric power around 2.1 MW).

Around 6.3 million m³ of forest is felled annually in Lithuania and around 3.5 million m³ of firewood and timber waste is used for fuel. It is mostly firewood (parts of trunks, waste not suitable for processing, sawmill waste). First steps have been made to start using forest felling waste for boiler-house fuel, and the potentially available resources of such waste are around 1 million m³. The reserve for the increase of forest biofuel resources lies in: forest felling waste and the development of young stands, energy forest planting, felling of low-value woods, cutting of trees and shrubs on roadsides, tracks, etc., and better use of natural wood mortality. The exploitation of the above-mentioned wood resources (transportation and use of wood waste) needs to be encouraged through economic measures.

Currently, the installed power of wood fuelled boilers of more than 0.3 MW capacity (there are about 170 such boilers) is about 385 MW, while that of straw fuelled boilers stands at around 7 MW, including 11 boilers of over 0.3 MW and around 30 boilers of about 0.05 MW. One CHP plant using wood fuel is active with an installed electric power of 1.5 MW and thermal power of 28 MW.

Table 1 provides preliminary data on Lithuania's domestic biomass resources (for energy production purposes) in 2005 (Source: Department of Statistics under the Government of the Republic of Lithuania, hereinafter referred to as "Statistics Lithuania").

Domestic biomass resources (for energy production purposes), 2005

Table 1

Biomass	Measurement	Domestic resources
Fuel peat	Thousand tonnes	50.2
Peat blocks	Thousand tonnes	20.2
Firewood and timber waste	Thousand m^3	3 615.7
Biogas	Thousand m^3	3.9

Domestic resources for biofuel production (for transport purposes)

The cereal grain grown in Lithuania is enough to develop bioethanol production until 2010, while rape grain used in biodiesel production is sufficient only for the first stage; consequently, cultivation of rape would have to be increased nearly threefold before 2010 (to around 160 000 tonnes, area of 66 700 ha.)

Production of biofuels for transport was launched in Lithuania only in recent years. In 2004-2005 there were two producers of biofuels *AB Stumbras* using cereal grain to produce bioethanol for production of bio-ETBE and *UAB Rapsoila* producing biodiesel (FAME) from rape grain.

Table 2 provides information on the production, export and domestic sales of biofuels for transport by national undertakings (Source: Statistics Lithuania.)

Production, sale and export of biofuels for transport (thousand tonnes), 2005

Table 2

Type of product	Produced	Sales on domestic market	Exports
Bioethanol for production of motor fuels	7.2	0.9	6.0
Biodiesel (FAME)	7.0	3.2	4.4

According to the data of Statistics Lithuania, a total of 1 448 thousand tonnes of fuels for transport were consumed in Lithuania in 2005, of which 1 233 thousand tonnes, including LPG (206.5 thousand tonnes), were used for motor vehicles.

Table 3 provides data on consumption of fuels for transport purposes (by thousand tonnes) and their ratios (in percentage points) by fuel types and their energy value.

Consumption of fuels for transport purposes, 2005

Table 3

Type of fuel	Thousand tonnes		Energy value of fuels	
		Petroleum equivalent	Terajoules	Ratio, Per cent
Bioethanol (used in production of mixtures with motor petrol)	0.9	0.8	33.4	0.075
Biodiesel (used in production of mixtures with diesel)	7.5*	6.8	284.6	0.64
Total pure biofuels used in mixtures	**8.4**	**7.6**	318	**0.72**
Motor petrol	334.2	351	14 693	33.18
Diesel	684	699	29 261	66.10
Total mineral fuel	**1018.2**	**1050**	**43 954**	**99.28**
Total fuel consumption for transport purposes	**1026.6**	**1057.6**	**44 272**	**100.0**

* Source: State Tax Inspectorate under the Ministry of Finance of the Republic of Lithuania.

It should be noted that the energy value of pure biofuels for transport in 2004 in the total amount of fuels for transport consumed amounted only to some 0.022% and rose to 0.72% in 2005.

Concerning State Aid No: 44/2005 Lithuania (Excise tax reduction on biofuels)

With regard to Council Directive 2003/96/EC of 27 October 2003 (restructuring the Community framework for the taxation of energy products and electricity) and without prejudice to Article 16 of this Directive allowing Member States to apply a reduced rate of excise tax on the products produced from biomass or products containing biomass and to exempt from the excise tax on certain terms, Lithuania began applying a reduced rate of excise tax on biofuels for transport.

The measure applied is state aid as defined in Article 87(1) of the EC Treaty. The aid is provided by the State of Lithuania and financed from its own public resources because the tax exemption results in reduced revenues that would otherwise be received by the state budget. As the excise rate reduction on biofuels for transport is treated as state aid, Lithuania notified the European Commission, in line with the set procedure, of its intentions to reduce the excise tax on biofuels.

On 25 July 2005, the European Commission informed Lithuania (letter No 204085) that it had no objections against the aid scheme for application of a reduced excise rate on biofuel mixtures with other fuel types (State Aid No: N44/2005 - Lithuania. Excise tax reduction on biofuels.)

The relief is applicable to bioethanol, biodiesel, bio-ETBE and pure vegetable oil.

Lithuania has committed to report to the European Commission on the annual monitoring of the production costs of mineral fuels (diesel and petrol) and biofuels (biodiesel and bioethanol) for transport and the sale prices of fuel mixtures to prove that no overcompensation exists. The information must be provided to the Commission in annual reports.

To meet this commitment we are providing a comparison of the production costs and sale prices of mineral fuels (petrol, diesel), biofuels (biodiesel and bioethanol) for transport and fuel mixtures in 2005 (Tables 4, 4a, 4b, 5, 5a and 5b.)

The data in Tables 4 and 5 were provided by the undertakings producing biofuels for transport and mineral fuel. The information is confidential, and at the request of the undertakings only the data in row 8 ‘Sale price set by producer (before taxes)’ of Tables 4 and 5 may be disclosed to third parties, while the data in rows 1-7 should not be made public.

The data in Tables 4a, 4b, 5a and 5b suggest that the sale price of fuel mixtures, taking into account the energy value of different fuels, is either equal to or higher than the sale price of mineral fuel (diesel and/or petrol.)

Production costs and sale price (before tax) of fuels (biodiesel and diesel) for transport

Table 4

Price of fuel, LTL[1] per litre	**Biodiesel (FAME)**	**Diesel**
1. Raw material (+)	1.71	0.926
2. Processing (+)	0.82	0.038
3. Other costs (research, production reorganisation) (+)	0.05	-
4. Production costs	**2.58**	**0.963**
5. Logistics (+)	0.06	0.093
6. Price of by-product sale (-)	0.67	-
7. Profit	0.04	0.232
8. Sale price set by producer (before tax)	**2.01**	**1.288**

Sale price of fuel mixture (diesel and biodiesel)

Table 4a

Price of fuel mixture, LTL per litre	**3% FAME**	**5% FAME**
Biodiesel (FAME) costs in mixture *(3% x LTL 2.01 per litre); (5% x LTL 2.01 per litre);*	0.06	0.10
Diesel costs in mixture *(97% x LTL 1.288 per litre); (95% x LTL 1.288 per litre)*	1.25	1.22
Excise *(97% x LTL 0.85 per litre); (95% x LTL 0.85 per litre)*	0.82	0.81
Total of the sale price of fuel mixture	**2.13**	**2.13**
Adjustment due to lower mixture energy (13%)[2a]	0.01	0.01
Sale price of fuel mixture (relative)	**2.14**	**2.14**

Diesel sale price

Table 4b

Diesel sale price (before tax) (100% x LTL 1.288 per litre)	**1.29**
Diesel excise	0.85
Diesel sale price[3]	**2.14**

[1] - Exchange rate used – LTL 3.4528 LTL = EUR 1.

[2a] – The energy value of biodiesel as compared to mineral fuel (diesel) is lower: it has been calculated that the amount of biodiesel needed to produce an energy unit is 13% higher than the amount of diesel needed to produce the same energy unit.

[3] - Without VAT.

Production costs and sale price (before tax) of fuels (bioethanol and petrol) for transport

Table 5

Price of fuel, LTL[1] per litre	Bioethanol (ETBE)	Petrol
1. Raw material (+)	0.65	0.947
2. Processing (+)	0.85	0.039
3. Other costs (research, production reorganisation) (+)	0.01	
4. Production costs	**1.51**	**0.986**
5. Logistics (+)	0.28	0.093
6. Price of by-product sale (-)	0.01	-
7. Profit		0.062
8. Sale price set by producer (before tax)	**1.79**	**1.14**

Sale price of fuel mixture (bioethanol and petrol)

Table 5a

Price of fuel mixture, LTL per litre	3.29% (ETBE)	7.05% (ETBE)
Bioethanol (ETBE) costs in mixture *(3.29% x LTL 1.79 per litre); (7.05% x LTL 1.79 per litre);*	0.06	0.13
Petrol costs in mixture *(96.71% x LTL 1.14 per litre); (92.95% x LTL 1.14 per litre)*	1.10	1.06
Excise *(96.71% x LTL 0.98 per litre); (95% x LTL 0.98 per litre)*	0.95	0.92
Total of the sale price of fuel mixture	**2.11**	**2.11**
Adjustment due to lower mixture energy (65%)[2b]	0.04	0.08
Sale price of fuel mixture (relative)	**2.15**	**2.19**

Petrol sale price

Table 5b

Petrol sale price (before tax) (100% x LTL 1.14 per litre)	**1.14**
Petrol excise	0.98
Petrol sale price[3]	**2.12**

[1] - Exchange rate used – LTL 3.4528 LTL = EUR 1.

[2b] – The energy value of bioethanol as compared to mineral fuel (petrol) is lower: it has been calculated that the amount of biodiesel needed to produce an energy unit is 13% higher than the amount of diesel needed to produce the same energy unit.

[3] - Without VAT.