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2005 REPORT AS PROVIDED FOR IN DIRECTIVE 2003/30/EC ON THE PROMOTION OF THE USE OF BIOFUELS OR OTHER RENEWABLE FUELS FOR TRANSPORT IN FINLAND

Introduction

In accordance with 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, Finland has produced the attached report

- on measures taken to promote the use of biofuels or other renewable fuels to replace diesel oil or petrol in transport
- on national resources which have been allocated to biomass production for the generation of energy for purposes other than transport
- on the overall sale of transport fuels and the share of biofuels and other renewable fuels marketed during the past year.

1. Measures to promote biofuels or other renewable fuels for transport

Taxation

Under Directive 92/81/EEC on fuel taxation, partial excise duty relief has been granted in Finland for biofuels intended for research and experimental use. Two projects were run in 2004 whereby tax on the bioethanol component in bioethanol and petrol fuel mixtures was reduced by 30 cents/litre. The period set for the projects ended on 31 December 2004 and the projects were not extended. Tax reductions under the Directive on taxation of energy (2003/96/EC), which came into force in early 2004, have not at present been decided on.

In accordance with Article 15 of the energy Directive, natural gas and liquid gas may be exempted from tax where they are used as motor fuel. The Article has been taken as covering also gas of biological origin derived from methane. Biogas for use as motor fuel is exempt from excise duty in Finland.

Taxation of personal and commercial vehicles running on methane was changed by the law on fuel taxation (1280/2003) which came into force in early 2004, so that gas consumption is no longer subject to the punitive value added tax previously applying. In addition to methane-using vehicles being exempted from fuel tax, personal and commercial vehicles have correspondingly been granted exemption also from the power output taxation imposed under the vehicle taxation law (1281/2003), which otherwise is charged on all motor vehicles using fuels taxed less heavily than petrol, e.g. diesel-driven vehicles.

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Research, product development and marketing

Research and development work on transport biofuels in Finland is concentrated on the development of biofuel production technologies which will be more cost-effective than at present. The key emphasis is on those biofuels – such as ethanol/ETBE and methanol/MTBE, synthetic biodiesel and biogas, which can be used in present-day vehicles as they are or mixed with petrol and/or diesel oils. An interesting alternative is seen in the "biorefinery" concept, in which biofuels are produced in conjunction with an industrial or heat generating plant. The raw materials for the new processes would principally be inexpensive wood or waste materials such as forest residue chips, solid municipal waste and industrial waste water sludge.

Research and development work is being carried out into the development of thermo-chemical and biotechnical biomass processes for the manufacture of liquid and gas biofuels and developing anaerobic biomass processing for the production of biogas.

Besides research and development, systems analyses and evaluations have been carried out with a view to optimising production of liquid biofuels. Many local-level projects for producing biofuels have been implemented or are in progress. Also currently under way is a BIOGHG project coordinated by the Government technical research centre, which is evaluating the greenhouse gas levels and CO₂ emission reduction costs of the various biofuel alternatives for transport and other biomass consumption alternatives. Road maps are also being drawn up in this project for the commercialisation of technologies which would appear to be more cost-effective under Finnish conditions.

Biofuels for transport – working party

In October 2005 the Finnish government gave the Finnish parliament a report on Finland's energy and environmental policy guidelines for the immediate future. In its report it stated inter alia that a working party was to be set up to examine various technological alternatives for biofuel production and consumption for transport and the policy alternatives required for the marketing of biofuels. The Ministry of Trade and Industry has set up the working party and its proposals are to be completed by the end of February 2006.

2. National resources which have been allocated to the production of biomass for energy production for purposes other than transport

Bioenergy is the most important of Finland's renewable energy sources. It rests on a quantifiable domestic raw materials base. The most important bioenergy sources are waste products of the wood processing industry, industrial wood waste material such as sawdust and bark as well as forest chips and recyclable fuels. Bioenergy is used for the production of electricity and heat for industry and the rest of society. In 2004, around 312 PJ of bioenergy was used in Finland, representing 21% of primary energy consumption. Compared with the previous year, bioenergy use increased by well over 5%.

The measures taken to promote bioenergy and the resources used are set out below:

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Research and development

The main body funding the development of technology is the Centre for Technology Development, Tekes. The techniques of renewable energies are one of the key emphases of Tekes's technology strategy. Tekes implements its strategy both with technology programmes and with a range of project funds. Tekes recently launched the ClimBus technology programme (2004-2008) on the theme of climate change control. The aims of the programme relate to the exploitation of business opportunities arising from control of climate change and preserving the competitiveness of enterprises in changing markets. Tekes's funding for technology projects concerning renewable energy sources was EUR 15.5 million in 2004, of which almost 90% was targeted on bioenergy. Renewable energy technology funding grew by EUR 3.5 million or almost 30% compared with 2003.

Taxation

Electricity production from renewable energy sources is promoted by means of tax support within the energy taxation system. There were no changes in the tax support base in 2004.

Support paid in 2004 is estimated at EUR 0.8 million for electricity produced from wind power, EUR 0.7 million for electricity produced from small-scale water power and EUR 37 million for electricity produced from wood. Support payments for electricity produced from biogas and recycled fuel are estimated to have been EUR 0.03 million and EUR 0.6 million in 2004.

Investment support payments and other forms of funding

With the energy support granted by the Ministry of Trade and Industry to businesses and companies the aim is to promote the use of renewable energy sources such as bioenergy, energy saving and the associated commercialisation of new technology. The amount of energy support granted in 2004 was EUR 33.5 million. In recent years, the most notable target of support has been wood energy use and the second most notable has been wind power.

Table 1 shows the Ministry of Trade and Industry's energy support activity in 2004. The figures include European Regional Development Fund (ERDF) appropriations of around EUR 2.3 million.

	EUR million	%
wood energy use		
energy production	14.2	42
wood fuel production	3.4	10
wind power	4.4	13
other renewable energy sources		
biogas	2.1	6
fuel production, recycled fuels	0.0	0
small-scale water power	0.3	1
solar energy/heat pumps	0.3	1
energy saving and energy efficiency	7.3	22
studies	1.6	5
Total	33.5	100.0

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Support for fuel timber harvesting and chipping

The Ministry of Agriculture and Forestry pays support in accordance with the current law on forestry financing for the harvesting and forestry transport of timber sold for fuel as part of the management of young plantations. The level of support for the harvesting of timber for fuel is EUR 7 per cubic metre. Support may also be obtained for chipping fuel timber. A total of EUR 4.7 million was spent in 2004 on fuel timber harvesting and chipping support.

3. Overall sales of transport fuels and market share of pure and mixed biofuels and other renewable fuels

In 2004 consumption of transport biofuels remained steady at the 2003 level. Consumption is based on two experimental projects, in which 5 per cent by volume ethanol is mixed with petrol. In Finland there is also small-scale production and use of biodiesel and biogas on an experimental basis as transport fuel, but the actual use of these biofuels is extremely restricted (a few cars only). The proportion of biofuels in overall sales of transport fuels in 2004 was thus around 0.1%.

Table 2 below shows road transport fuel consumption in 2000-2004 and the share of biofuels therein:

	Total road transport fuels	Petrol	Diesel oil	Biofuels	
	PJ	PJ	PJ	PJ	%
2000	152.9	76.4	76.5	–	–
2001	155.5	77.4	78.1	–	–
2002	158.6	78.8	79.8	0.033	0.02
2003	161.1	79.1	81.9	0.176	0.1
2004	166.1	80.4	85.5	0.186	0.1

Source: Finnish Statistics Office

The share of road transport in carbon dioxide emissions from energy production and consumption in Finland in 2004 was 16%.

The only noteworthy Finnish producer of transport biofuels is Neste Oil OYJ, which began production of ETBE in spring 2004. The ETBE plant's production capacity is 100 000 tonnes a year. The ethanol contained in ETBE is imported from Brazil and the end-product is mixed with petrol for export. Neste Oil has also begun construction of a biodiesel plant and this is intended to be completed in spring 2007. The plant will produce biodiesel equivalent in its characteristics to good-quality diesel fuel via the process developed by the company itself, which is based on hydrogen-treated plant oils and animal fats. The capacity of the plant being completed will be around 170 000 tonnes of biodiesel a year.