

MINISTRY OF TRADE AND INDUSTRY

Finland

Report

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**2007 REPORT OF THE FINNISH MINISTRY OF TRADE AND INDUSTRY
PURSUANT TO DIRECTIVE 2003/30/EC ON THE PROMOTION OF THE USE OF
BIOFUELS OR OTHER RENEWABLE FUELS FOR TRANSPORT IN FINLAND**

Introduction

Under 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 following report 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,
- § the total sales of transport fuel and the share of biofuels and other renewable fuels placed on the market in the preceding year.

1. New measures to promote the use of biofuels or other renewable fuels for transport purposes

National objective for 2010 as required by the Directive

The Finnish Government has fixed for 2010 a national target for biofuels used to power road traffic of 5.75%. This objective will be achieved by the distribution requirement laid down by law.

Obligation to distribute biofuels

Based on the proposals of the working party set up by the Ministry of Trade and Industry, on 19 October 2006 the Government presented a draft law to Parliament on promoting the use of biofuels in transport. The purpose of the draft law was to create a demand for biofuels in transport by obliging fuel distributors to supply biofuels to the transport market. The draft law on promoting the use of biofuels in transport was approved as proposed on 13 April 2007. The law will enter into force on 1 January 2008.

The law obliges distributors of transport fuels to supply a minimum volume of biofuels annually for consumption. This minimum volume increases year-on-year so that in 2008 it will be at least 2% of the total energy content of biofuels, petrol and diesel supplied for consumption by a fuel distributor.

In 2009 this share will be at least 4% and in 2010 and subsequent years it will be at least 5.75%. So the obligation satisfies the reference figure for 2010 in Directive 2003/30/EC. The

entry into force of the 2010 obligation will be separately enacted by Decree of the (Finnish) Council of Ministers. The obligation will enter into force if biofuel quality requirements enable the addition in 2010 of the biofuel percentages demanded by the obligation to petrol and diesel oil.

A 'distributor' under the law is a person who, in accordance with the rules of tax liability in the Excise Act, is liable to pay tax on the petrol or diesel oil he supplies or receives for consumption in Finland. The obligation system is meant to be flexible for distributors, with a view to optimum cost-efficiency. The obligation relates solely to the total quantity of biofuels, so the distributors can themselves meet their obligation by introducing biofuels to replace petrol or diesel at a ratio of their choosing, within the limits of quality standards. The Law does not regulate the origin of the biofuels.

Distributors may transfer all or part of their obligation to another company on a contractual basis. Irrespective of contracts, each distributor is accountable to the Government for meeting his obligation, either on his own account or through a third party. If a distributor fails to meet his obligation, the customs authorities will impose a fine.

Promotion of biofuels for transport in the new government programme

The 2007-11 programme of the new Finnish government sworn in on 19 April 2007 seeks a very significant increase in the use of renewable energy sources. As part of this, the new government is speeding up growth in the use of biofuels that reduce transport emissions. This acceleration will be achieved initially through legal measures and later through market-based measures, as quickly as the technological development of the sector, domestic production and the affordability of biofuels allow. During the government negotiations a figure of EUR 40 million was earmarked for the promotion of renewable energy, part of which will be used to promote transport biofuels.

Research, development and marketing

A significant proportion of Finland's measures to promote transport biofuels and other renewable fuels is focused on the development of "second-generation" biofuel production technologies. By developing second-generation biofuel production technologies it will be possible to significantly reduce the additional costs to the national economy incurred in biofuel production and to increase the energy share of biofuels in the transport sector. Second-generation biofuels may also provide greater environmental benefits than the original fuel alternatives.

Under the new government programme, popularising biofuels will require increased investment in research resources for the sector in order for second-generation technology to be exploited from the start of the next decade. The government deems it important to ensure that domestic demand for transport biofuel can be satisfied as a general rule through domestic production.

The main funder of technology development in Finland is Tekes, the Finnish Funding Agency for Technology and Innovation. In the spring of 2007 Tekes launched the technology programme "BioRefine - New Biomass products". The programme will run from 2007 to 2012 and it has a total budget of EUR 137 million. The programme's specific objective is to significantly promote the development of second-generation biofuel production technology. In its second supplementary budget for 2006 the Finnish Parliament voted EUR 9 million over

three years for the development of new second-generation biofuel production technologies for transport. The funding is being used to launch a special Tekes/Ministry of Trade and Industry development programme, the main thrust of which involves new technology pilot and demonstration projects; it has progressed to the applications of intent stage. The deadline for an application of intent was 23 May 2007.

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

Bioenergy is the most important of the renewable fuel sources in Finland. It rests on a measurable domestic raw-materials base. The most important bioenergy sources are waste products from the wood processing industry, industrial timber waste such as sawdust and bark as well as wood chips and recycled fuels. Bioenergy is used for heat and power production for industry and society in general.

In 2006 bio-energy use increased by almost 9% over the preceding year (the cause being an exceptionally low level of use in 2005 as a result of a strike in the timber industry). The relative share of bio-energy however remained unchanged at about 20% of primary energy [consumption], because total energy consumption rose by almost as much.

The resources used to promote bioenergy are set out below:

Research and development

Tekes funding for bio-energy technology projects amounted to some EUR 15 million in 2006, which is about EUR 5 million more than the previous year. It is estimated that overall funding of energy and climate research will remain at the level of previous years. The funding has covered the demand for projects meeting the criteria.

The Tekes "Biorefine - new biomass products" programme mentioned above is not just intended to promote the development of biofuels for transport, it is also intended, among other things, to cover energy production as a by-product of biofuel production and bioenergy production associated with industrial processes in general.

The government programme sees forest-based bioenergy as having the greatest potential for increasing the use of renewable energy sources. In order to achieve these objectives, the government programme lays down that research and development work on the use of renewable energy is to be increased significantly and forest energy technology is to be developed.

Taxation

Fiscal incentives have been built into the energy tax system to promote electricity production based on renewable energy sources. The aid has been applied to several different methods of production. The fiscal aid basis was revised in 2006 because the start of emissions trading has made the operating environment more favourable for renewable energy sources.

Since the start of 2007, aid for electricity produced from wood and fuel timber products was abolished, except for electricity produced from wood chips. Fuel timber as a by-product of the forestry industry will be competitive for the most part, once emissions trading has started, so removing any energy-policy or environmental grounds for various state aids.

In the case of other aids for electricity production based on renewable energy sources, Finland feels that there are still grounds for supporting wind power, small-scale hydroelectric power, recycled fuels, wood chips and biogas.

Aid for investments and other financing

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. In recent years wood for energy has been a significant support target. A total of EUR 34.1 million was granted in 2006 in energy support. Table 1 shows the Ministry of Trade and Industry's energy support activity in 2006.

The figures include European Regional Development Fund (ERDF) appropriations of around EUR 3.8 million. Assistance from the Ministry of Trade and Industry in 2007 was at the same level as the preceding year.

Table 1

	%	EUR million
Wood for energy		
Energy production	12.60	37.00
Production of fuel wood	5.20	15.00
Wind power	4.40	13.00
Other renewable energy sources		6.5.00
Biogas	0.10	
Small-scale hydroelectric power	1.00	
Solar energy / heat pumps	0.10	
Recyclable fuels/biomass/for transport		
Biofuels	0.90	
Energy savings and efficiency	8.60	25.00
Studies	1.200	3.50
Total	34.1	100.00
<u>Aid for logging and chipping of fuel wood</u>		

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 aid for harvesting fuel wood is €7 per solid cubic metre. Support may also be obtained for chipping fuel timber. A total of EUR 5.5 million was spent in 2006 on fuel-timber harvesting and chipping support, which is just short of an 8% increase over the previous year. The amount of funding was the same in 2007 and in the preceding year.

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

Use of biofuels for transport rose in 2006 from zero the previous year. The ending of temporary pilot projects, which the State had assisted through tax relief measures, was behind the zero biofuel use figure for 2005.

In the spring of 2006 Neste Oil Oyj, Finland's largest seller of transport fuels, began selling biofuels without any State support. Ethanol (2-5%) was incorporated into all E98 grade petrol sold by the company in southern and central Finland.

There have also been small-scale trials in Finland of biodiesel and biogas production for use as transport fuel, but the use of these biofuels was negligible up to 2006 and was not statistically recorded.

Table 2 below shows the consumption of transport fuels in 2000-06, including the share of biofuels.

Table 2.

Source: Statistics Finland

	Total fuels for road transport	Motor 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	
2005	166.5	80.3	86.2	-	-	
2006	169.0	80.0	88.9	0.034	0.02	

Biofuels production

Neste Oil Oyj is the most significant producer of biofuels for transport in Finland; it is starting biodiesel production in the biodiesel plant it has built in Porvoo. The plant entered into production on 31 May 2007 and produces biodiesel equivalent in its characteristics to good-quality diesel fuel via a process developed by the company itself, which is based on hydrogen-treated plant oils and animal fats. Most of the raw materials should be provided by palm oil produced in the Far East. The capacity of the plant on completion will be around 170 000 tonnes of biodiesel a year. Neste Oil has announced it is to build a second, similar plant in Finland, which is expected to be ready at the end of 2008. Neste Oil has processed ETBE since 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.

The St1 oil company is also starting to produce fuel-ethanol in Finland. Production is based in a number of small-scale plants (capacity of several thousand tonnes) which use food-industry waste as a by-product and are located alongside the industrial plants. The first plant is to be ready in summer 2007. The State has aided this plant investment as a new technology project. In April 2007 Altia Oyj cancelled its decision to build a 70 000 m³/a fuel ethanol factory in

Finland. In explaining the reasons for cancelling the project, the company said that project costs had risen so much that continuing with the investment would not have been commercially advisable.

Work is ongoing on several fronts to develop second-generation, transport biofuel production technology. Neste Oil and the forest industry company Stora Enso have also announced their intention to build a trial plant jointly owned by both firms at Stora Enso's Varkaus factory. The idea is to produce raw biodiesel from raw timber at the trial plant, and then process it into commercial fuel at Neste Oil's Porvoo processing plant. The trial plant will be ready in 2008. Another forest industry company, UPM-Kymmene Oyj, has announced that it will focus strongly on second-generation biodiesels and that it intends to become a major biofuels producer. According to the company's statement, investment decisions on the first commercial-scale production plant can be expected in the next few years, and it will be located at one of UPM's paper factories.