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**NATIONAL REPORT ON THE IMPLEMENTATION  
OF DIRECTIVE 2003/30/EC OF 8 MAY 2003 ON THE PROMOTION OF THE  
USE OF BIOFUELS OR OTHER RENEWABLE FUELS FOR TRANSPORT  
FOR 2006  
DENMARK**

## **Annual report under the Biofuels Directive (2003/30/EC)**

Article 4 of the Biofuels Directive states, *inter alia*:

“1. 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 their first report following the entry into force of this Directive, Member States shall indicate the level of their national indicative targets for the first phase. In the report covering the year 2006, Member States shall indicate their national indicative targets for the second phase.

In these reports, differentiation of the national targets, as compared to the reference values referred to in Article 3(1)(b), shall be motivated and could be based on the following elements:

- (a) objective factors such as the limited national potential for production of biofuels from biomass;
- (b) the amount 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.”

### A. Measures to promote the use of biofuels for transport

With effect from 1 January 2005 the Danish Government exempted biofuels from the CO<sup>2</sup> tax imposed on the use of ordinary petrol and diesel for transport. In case NN 59/2005 the Commission accepted the Danish CO<sup>2</sup> tax exemption. In practice, however, the actual effect of the tax rebate on demand for biofuels is very unclear, as market prices for petrol/diesel and biofuels have a tendency to fluctuate greatly. In May 2006 the Statoil oil company began to sell *bio95*, which is a 95 octane petrol with 5% added bioethanol. At 205 of Statoil's 306 filling stations in Denmark, *bio95* is the only 95-octane currently on sale. For details of other initiatives, see paragraph D below.

## B. The amount of national resources allocated to the production of biomass for energy uses other than transport.

Biomass supplied some 12% of the energy consumed in 2006. Expenditure on supporting this amounted to DKK 2.7 billion. In the period 2000-2006 around ½% (about 5 PJ) of the energy supply switched annually from fossil fuels to bioenergy, cf. annexed Table. Renewable energy supplied about 15% of Danish energy consumption in 2006. As a result of this effort Denmark has become more than self-sufficient in energy.

## C. Total sales of transport fuel and the share of biofuels, and market conditions

According to provisional data, 2.4 billion litres of petrol and 2.9 billion litres of diesel were sold as transport fuel in Denmark in 2006, that is a total of 183 PJ of fuel. There was a net export of 7 PJ in border trade, giving a petrol and diesel consumption in Denmark of 176 PJ. Traditionally, border trade shows a highly fluctuating pattern.

Since May 2006 petrol with added bioethanol has been marketed in Denmark. For all of 2006 those sales amounted to 0.2 PJ, but they increased considerably from May to December 2006, giving an average rate of 0.3 PJ per year if based on December 2006.

Biofuel for transport represented 0.15% of total sales of petrol and diesel for transport by 31 December 2006 and consequently exceeded Denmark's indicative target of 0.1%.

## D. Denmark's national indicative targets for the use of biofuels and other renewable fuels for transport by 31 December 2010

On 19 January 2007 the Danish Government presented a comprehensive national energy proposal, "A visionary Danish energy policy", in view of negotiations with political parties. This proposal contains the basic objective that Denmark reduce its use of fossil fuels by at least 15% by 2025 compared to today, and that total energy consumption be maintained at its current level. The use of renewable energy is to be increased to account for at least 30% of energy consumption by 2025, and the proportion of biofuel for transport is to be increased to 10% by 2020.

The Government is ready to set intermediate targets for biofuels earlier than 2020, provided that enough is done to develop socio-economic, competitive and environmentally sustainable technologies.

The Danish Government has decided that the proportion of biofuel for transport which complies with the EU sustainability criteria will be increased to 5.75% of total sales of petrol and diesel for transport on Danish territory calculated on energy content as from 1 January 2010.

To reach this target, all filling stations selling petrol and diesel for transport will receive directions demanding them to sell at least 5.75% as from 1 January 2010. A bill to this effect will be presented to the Danish parliament at the beginning of 2008.

It is presupposed that it will be possible under future EU legislation to meet the target by adding biofuel to ordinary petrol and diesel.

Today the national Danish supply system is not technically equipped to handle biofuels. In February 2006, on the basis of the experience of oil companies in Sweden, the Danish Petroleum Industry Association (Oliebranchens Fællesrepræsentation) estimated that the integration of bioethanol and biodiesel (FAME) in the overall Danish supply system would require the cleaning and bottom-suction pumping of all storage tanks. An assessment will also be carried out with a view to determining how many tanks, particularly older ones, will need to be renovated, or replaced altogether, because the level of corrosion protection does not ensure their resistance to ethanol/FAME. On top of this, there is the matter of installing separate tanks, mixing equipment and delivery facilities at depots and refineries. According to the Danish Petroleum Industry Association's calculations, this would take up to a whole year and cost an estimated total of DKK 0.5 billion. This does not include costs associated with the various stockpiles. Consequently, it will take a significant amount of investment and quite a considerable period of time to set up an entire Danish distribution system capable of handling biofuels. On the basis of Statoil's experience in the marketing of petrol with added ethanol in May 2006, the Petroleum Industry Association sees no evidence to contradict this assessment as Statoil has had to make time-consuming one-off investments of the kind mentioned above.

Alternatively, ethanol can be used for the production of ETBE, which can then be added to petrol without the need for any changes to the supply system. However, the properties of ETBE are very close to those of MTBE which, in very small quantities, is itself capable of rendering drinking water undrinkable. In the past, high concentrations of MTBE have been found in Denmark in groundwater in the vicinity of filling stations. To a very large extent, the supply of drinking water in Denmark is groundwater-based. The Danish petroleum industry has therefore given the Danish Minister for the Environment an undertaking not to add MTBE to 92 or 95 octane petrol. For the same reason, the use of ETBE is also regarded as unacceptable. The only petrol to contain added MTBE will be 98 octane petrol, which accounts for about 1% of all petrol sales and can only be sold from specially secured petrol stations. Consequently, this concern about clean drinking water constitutes an obstacle to the use of ETBE in Denmark.

The Danish Government intends to exempt cars powered by hydrogen from tax in order to promote a switch in the energy consumption of the transport sector from fossil fuels to alternative fuels. Battery-driven electric cars are already exempt from tax.

To the extent the production of electricity and hydrogen for use in cars is based on renewable energy, the measures mentioned will promote what is defined as "other renewable fuels for transport". In 2005 renewable energy accounted for 28.5% of the domestic power supply.

The quantities of other renewable fuels sold for transport in the coming years as a consequence of exempting electric cars and hydrogen cars from tax depends more specifically on private actors' reactions to very changeable market conditions, as well as on efforts to increase the proportion of renewable energy in the power supply and the total energy supply.

In addition to the aforementioned direct market-orientated initiatives, the Danish Government decided in 2006 to significantly boost efforts to promote the use of second-generation biofuel technologies by allocating an additional DKK 200 million for the co-financing of large-scale

private development programmes. Altogether, these additional private and public development interventions are expected to total significantly more than DKK 200 million. To support the target of increased use of biofuels for transport the Government intends to further enhance this effort by allocating more government funds. This will ensure that, before 2010, work can go ahead on the full-scale establishment of test facilities in Denmark.

The Danish Government has earmarked DKK 60 million in the period 2007-09 for the use of biofuels in restricted fleets of vehicles. Denmark will notify the Commission at a later date how the scheme is being implemented.

**Annex to the annual report under the Biofuels Directive (2003/30/EC)**

**Table: Input and use of biomass for energy, 1980-2006**

<b>PJ</b>	<b>1980</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006*</b>
<b>Production</b>										
Straw	4.8	12.5	13.1	12.2	13.7	15.7	16.9	17.9	18.5	
Woodchips	0.0	1.7	2.3	2.7	3.2	3.7	6.3	6.9	6.8	
Wood pellets	0.0	1.6	2.1	3.0	3.1	2.9	3.1	3.3	3.3	
Wood residue	3.7	6.2	5.7	6.9	6.7	6.0	6.3	6.4	6.7	
Firewood	7.6	8.8	11.5	12.4	13.2	13.0	14.9	15.7	17.7	
Waste, biomass	7.6	11.1	17.5	23.6	25.0	26.3	28.4	28.7	28.7	
Biogas	0.2	0.8	1.8	2.9	3.1	3.4	3.6	3.7	3.8	
Biodiesel	0.0	0.0	0.0	0.0	0.9	1.5	1.7	2.4	2.7	3.7
Bioethanol										0.0
Fish oil	0.0	0.7	0.3	0.0	0.2	0.1	0.4	0.6	0.7	
<b>Total production</b>	<b>24.0</b>	<b>43.3</b>	<b>54.2</b>	<b>63.8</b>	<b>69.1</b>	<b>72.7</b>	<b>81.6</b>	<b>85.8</b>	<b>88.9</b>	<b>91</b>
<b>Net import</b>										
Woodchips	0.0	0.0	0.0	0.3	0.4	0.4	0.7	0.8	0.8	
Wood pellets	0.0	0.0	0.2	2.2	4.1	4.9	6.7	9.5	11.0	
Firewood	0.0	0.0	0.0	0.0	0.3	0.5	0.9	1.4	2.0	
Biodiesel	0.0	0.0	0.0	0.0	-0.9	-1.5	-1.7	-2.4	-2.7	-3.7
Bioethanol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
<b>Total net imports</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>2.5</b>	<b>3.7</b>	<b>4.4</b>	<b>6.7</b>	<b>9.2</b>	<b>11.1</b>	<b>11</b>
<b>Total inputs = use</b>	<b>24.0</b>	<b>43.3</b>	<b>54.4</b>	<b>66.3</b>	<b>72.8</b>	<b>77.1</b>	<b>88.3</b>	<b>95.0</b>	<b>99.9</b>	<b>102</b>
<b>of which use in</b>										
- electricity and heat generation	7.9	20.0	30.0	39.4	43.2	47.7	55.5	61.0	63.6	
- other industrial	5.7	9.3	8.6	9.2	9.3	8.5	9.1	8.8	8.3	

- housing	10.4	14.0	15.8	17.7	20.3	20.9	23.7	25.2	28 .0	
- transport	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

\* Definitive data for 2006 are not yet available. Figures for 2006 are rough estimates based on provisional data.  
The Energy Authority, *Energistatistik 2005*, and provisional data for 2006.