

**Denmark's annual report under the Biofuels Directive (Directive 2003/30/EC)**

Article 4 of the Biofuels Directive states that:

"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.

**A. Measures to promote the use of biofuels in transport**

With effect from 1 January 2005, biofuels have been exempt from the CO<sub>2</sub> tax imposed on the use of conventional petrol and diesel for transport purposes. The Commission approved the tax exemption in case NN 59/2005.

In May 2006, the Statoil oil company began selling bio95, which is 95-octane petrol containing 5 % bioethanol.

Following the energy policy agreement reached between all parties represented in parliament, except for the Red-Green Alliance, the Folketing adopted the Sustainable Biofuels Act on 29 May 2009. This law obliges importers and producers of petrol and diesel to ensure that biofuels account for at least 5.75 % of their total annual sales of fuel for land transport, measured in terms of energy content. Only sustainable biofuels can be taken into consideration for the purposes of meeting this target. The sustainability criteria are set out in Order No 1403 of 15 December 2009 and are identical to those laid down in Directive 2009/28/EC on the promotion of the use of energy from renewable sources (RES Directive). Under this Order, the blending requirement is to be phased in so that biofuels account for 0.75 % in 2010, 3.3 % in 2011 and 5.75 % in 2012 and thereafter. The Order was amended by Order No 1639 of 16 December 2010, placing the total blending requirement for fuels sold in 2010 and 2011 at 2.025 %: the average of the previous requirements for 2010 and 2011. In addition to this, the Amending Order stipulates minimum blending of 0.55 % in 2010 and 3 % in 2011.

Since mid-2010 oil companies have added 5 % bioethanol to petrol sold for road transport ('E5') in an effort to meet the blending requirement.

In the 2007-2010 period a total of DKK 200 million was paid out in national government subsidies from the special pool to develop second-generation bioethanol to significantly boost efforts in this area, mainly in the form of subsidies for large-scale demonstration projects carried out by the private sector. These funds were allocated via the independent Energy Technology Development and Demonstration Programme (EUDP). The projects

supported include a demonstration plant for the production of second-generation bioethanol from straw that was put into operation in 2009. The development of second-generation biofuels will remain one of the key priorities of the general EUDP programme, whose funds for 2011 are in excess of DKK 400 million.

The Danish Government earmarked DKK 60 million in the 2007-09 period for the experimental use of biodiesel in closed vehicle fleets. The experiment was concluded in 2010 and proved that high blends of biodiesel, i.e. 10–100 %, can be used. Oil changes are set to become more frequent and gaskets and tubing may have to be made of harder wearing materials. The blend may have to be reduced in severe frost. Particulate filters in cars will not be affected.

### **B. Danish resources allocated for the production of biomass for energy uses other than transport**

Some 14 % of the energy consumed in 2009 came from biomass. In the 2000-09 period, just over 0.7 % (approx. 6 PJ) of the energy supply shifted annually from fossil energy to bioenergy (see table in annex).

Some 18 % of Denmark's energy consumption in 2009 was covered by renewable energy sources. Calculated in accordance with the method set out in the RES Directive, their share was 19.7 %. This is one reason why Denmark is more than self-sufficient in energy.

### **C. Total sales of transport fuels, the biofuel share and market conditions**

In 2009, 71.7 PJ of petrol and 98.8 PJ of diesel was sold for use in transport in Denmark, totalling 170.5 PJ of fuel (petrol and diesel only). Cross-border trade gave a net export of 8.1 PJ (diesel), which means that 162 PJ of petrol and diesel was consumed within Denmark. The final figures for 2010 are not yet available; the data for 2009 is therefore cited in this section.

Sales of bioethanol-blended petrol in Denmark were 0.20 PJ in 2009, i.e. more or less unchanged compared with 2008.

This means that transport biofuels accounted for about 0.12 % of total sales of petrol and diesel for transport.

### **D. Danish biofuel policy and other forward-looking initiatives**

The Sustainable Biofuels Act is a step towards meeting the national obligation under the RES Directive to achieve a target of 10 % renewable energy in transport by 2020. Denmark is thus set to increase its biofuel share from the current 0.12 % to 5.75 % in 2012.

Denmark submitted a national action plan to the Commission in June 2010, setting out how it plans to achieve the target of 10 % renewable energy in transport by 2020. According to the action plan, biofuels are expected to make by far the biggest contribution to using renewable energy in the transport sector in the period to 2020.

The Sustainable Biofuels Act also makes a significant contribution towards meeting Denmark's international climate obligations and implements an initiative in the National Allocation Plan for 2008–12, which has been approved by the Commission.

A tax exemption for hydrogen cars has been introduced, as has a tax exemption for electric cars until 2012. A pilot scheme involving electric cars has also been launched, with a total budget of DKK 35 million over the 2008-12 period.

The Danish Transport Authority's pool for testing out energy-efficient transport solutions has helped to fund two demonstration projects in which a total of eight heavy vehicles are to run on biogas. The projects will be carried out in the 2011-2012 period.

**TABLE: Availability and use of biomass for energy purposes, 1980–2008**

<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>2007</b>	<b>2008*</b>	<b>2009</b>
<b>Production</b>													
- straw	4.8	12.5	13.1	12.2	13.7	15.7	16.9	17.9	18.5	18.5	18.8	15.8	17.3
- woodchips	0.0	1.7	2.3	2.7	3.2	3.7	6.3	6.9	6.1	6.8	7.2	8.2	9.8
- wood pellets	0.0	1.6	2.1	3.0	3.1	2.9	3.1	3.3	3.3	2.3	2.5	2.4	2.3
- wood waste	3.7	6.2	5.7	6.9	6.7	6.0	6.3	6.4	6.5	7.0	7.6	6.8	5.6
- fuel wood	7.6	8.8	11.5	12.4	13.2	13.0	14.9	15.7	17.7	19.0	25.0	24.0	23.1
- biomass waste	7.2	10.5	13.9	17.9	19.0	19.9	21.5	21.9	22.2	22.6	23.4	24.0	22.7
- biogas	0.2	0.8	1.8	2.9	3.0	3.4	3.6	3.7	3.8	3.9	3.9	3.9	4.2
- biodiesel	0.0	0.0	0.0	0.0	0.9	1.5	1.7	2.4	2.6	2.6	2.6	3.7	3.3
- bioethanol									0.0	0.0	0.0	0.0	0.0
- fish oil	0.0	0.7	0.3	0.0	0.2	0.1	0.4	0.6	0.8	1.1	1.2	1.8	1.6
<b>Total production</b>	<b>23.5</b>	<b>42.8</b>	<b>50.7</b>	<b>58.1</b>	<b>63.0</b>	<b>66.3</b>	<b>74.7</b>	<b>79.0</b>	<b>81.4</b>	<b>83.9</b>	<b>92.2</b>	<b>90.7</b>	<b>89.9</b>
<b>Net import</b>													
- woodchips	0.0	0.0	0.0	0.3	0.4	0.4	0.7	0.8	1.5	1.7	1.8	3.5	4.2
- wood pellets	0.0	0.0	0.2	2.2	4.1	4.9	6.7	9.5	12.8	13.3	14.0	16.1	17.1
- fuel wood	0.0	0.0	0.0	0.0	0.3	0.5	0.9	1.4	2.0	2.1	2.2	2.1	2.0
- biodiesel	0.0	0.0	0.0	0.0	-0.9	-1.5	-1.7	-2.4	-2.6	-2.6	-2.6	-3.7	-3.1
- bioethanol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.2
<b>Total net import</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>13.7</b>	<b>14.6</b>	<b>15.6</b>	<b>18.3</b>	<b>20.4</b>
<b>Total availability = use</b>	<b>23.5</b>	<b>42.8</b>	<b>50.9</b>	<b>60.6</b>	<b>66.8</b>	<b>70.7</b>	<b>81.4</b>	<b>88.2</b>	<b>95.1</b>	<b>98.5</b>	<b>107.9</b>	<b>109.0</b>	<b>110.3</b>
<b>of which used in</b>													
- electricity and heat production	7.4	19.5	26.5	36.3	39.7	41.8	51.3	55.6	60.6	59.0	65.2	60.2	63.7
- other industry	5.7	9.3	8.6	9.2	9.3	8.5	9.1	8.8	9.3	10.0	10.0	10.0	9.9
- homes	10.4	14.0	15.8	15.1	17.7	20.4	21.0	23.8	25.2	29.3	32.3	38.4	36.3
- transport	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.3