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Note

Follow-up report pursuant to the Directive on the promotion of electricity produced from renewable energy sources in the internal electricity market

Pursuant to Article 3 of Directive 2001/77/EC of 27 September 2001, Member States are required to publish, no later than 27 October 2002, a report on national indicative targets for future consumption of electricity produced from renewable energy (RE) sources. The report is also to outline the measures taken or planned, at national level, to achieve such national indicative targets. When setting the targets until the year 2010, account is to be taken of the reference values in the Annex to the Directive and it is to be ensured that the targets are compatible with Denmark's commitments under the Kyoto Protocol and the EU's burden-sharing agreement.

Consumption of RE electricity in 2001

Table 1 shows that the RE share of electricity production rose from just under 6% to over 17% in the 1994-2001 period in terms of gross consumption.

Wind power accounts for the biggest share of electricity produced from renewable energy sources. 2001 was a relatively poor year as far as wind was concerned, and the figure in Table 1 is for actual production. In a normal wind year, production would be about 1000 GWh higher, and the RE share of electricity production would be about 20%.

Table 1. Electricity production from renewable energy sources in Denmark 1994-2001

Unit: GWh	1994	1995	1996	1997	1998	1999	2000	2001
Wind power	1 137	1 177	1 227	1 934	2 820	3 029	4 242	4 299
Hydro power	33	30	19	19	27	31	29	29
Straw and wood	198	205	295	314	387	505	387	550
Biogas	89	112	113	158	190	197	208	214
Waste ¹	408	473	602	647	666	825	947	1 007
Total from RE	1 865	1 998	2 256	3 072	4 090	4 586	5 813	6 099
Gross consumption	33 010	33 766	35 526	34 633	34 895	34 710	35 111	35 570
% from RE	5.7%	5.9%	6.3%	8.9%	11.7%	13.2%	16.6%	17.1%

¹ Includes only the biodegradable fraction, cf. Article 2(b) of the RES Directive. The biodegradable fraction is estimated to be 80% of the total volume of waste, measured in terms of energy content.

Source: Danish Energy Authority energy statistics 2001

Measures taken to promote RE electricity in Denmark

The principal measures taken to promote renewable energy in Denmark are described below.

a. Wind power

The main incentive for the development of wind power is the settlement price for electricity supplied to the public network. Until 1999, wind turbine operators as a general rule received a settlement price equal to 85% of the electricity price charged to domestic consumers, excluding taxes and an administrative fee. Added to this was a state electricity production subsidy of DKK 0.27/kWh. As a result of the 1999 electricity reform, this was replaced by fixed settlement prices corresponding to the date on which the wind turbine concerned was erected. The fixed settlement prices are now paid by all electricity consumers, on a pro rata basis, via the price charged to them for electricity.

Operators of wind turbines erected after 1 January 2003 will receive the market price, plus DKK 0.10/kWh in lieu of an RE certificate.

The first two major offshore wind farms, each with a capacity of about 150 MW, are under construction. It is to be assumed that other offshore wind turbine development will be the subject of tendering procedures, although the relevant conditions have not yet been clarified.

When the expected expansion of land-based wind turbine capacity is complete, and the two above-mentioned offshore wind farms are ready, electricity production from land-based windpower plants is, in 2004, likely to be 7.4 TWh, for a normal wind year. This corresponds to about 20% of gross consumption, i.e. an 8% increase on 2001, though an increase of about 3% is due to the fact that 2001 was a poor year as far as wind was concerned.

b. Hydro power

Hydro power's share of electricity production is declining. There are not expected to be any changes in this respect.

c. Straw and wood

A policy agreement was concluded in 1993 which involved increasing electricity production from straw and wood, with 1.4 million tonnes of straw and wood being used annually for electricity production as from 2000. There is a delay of about four years in meeting this target. Electricity production from straw and wood may therefore be expected to increase by 3-4% between 2001 and 2004.

As a general rule, a fixed settlement price of DKK 0.30/kWh is paid for electricity produced from straw and wood, for a period of ten years. On top of this, DKK 0.10/kWh is paid in lieu of an RE certificate.

d. Biogas

It is expected that electricity production from biomass will increase by 0.2% between 2001 and 2004 as a result of projects that have been launched.

Biogas-based electricity producers receive a settlement price based on the avoided cost, plus an electricity production subsidy of DKK 0.27/kWh. In addition, there is a possibility of an installation subsidy.

e. Waste

A number of waste incineration plants have been converted from heat-only production to combined heat and power production. This was done primarily in connection with municipal heating plans based on the Heating Supply Act. There are four waste-powered CHP plants under construction. These are likely to increase the share of electricity produced from renewable energy sources by about 330 GWh, or 1%, by 2005.

Waste incineration plants which produce electricity receive a settlement price based on the avoided cost, plus a state electricity production subsidy which is currently DKK 0.07/kWh.

f. Others

Work is currently in progress on the introduction of a guarantee of origin for electricity produced from renewable energy sources.

Indicative targets from now until 2010

Once the programmes already in progress have been completed, it is to be assumed that the RE share of electricity production will rise from about 17% in 2001 straight to 29% in 2004/2005, which is Denmark's national indicative target for 2010 pursuant to the Directive.

This estimate is based on there being no change in the situation as regards settlement terms for plants on which a decision has already been taken or in electricity consumption. If electricity consumption increases, electricity production from renewable energy sources should increase accordingly.

The Government is currently drawing up the basis for a decision to ensure that Denmark's climate-change obligations are met in a cost-effective way. The framework for the future development of renewable energy sources is to be discussed in the light of this. It is expected that the basis for a decision will be ready by about 1 December 2002. One objective is to strike a balance between national measures, including the development of renewable energy, and use of the flexible mechanisms. It is therefore not possible at present to provide more concrete information on the action that is expected to be taken with regard to renewable energy in addition to the measures that have already been launched.