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MANIFEST ON FURTHER ACTIONS FOR IMPLEMENTATION OF  
BIOENERGY IN THE EUROPEAN UNION AND ITS MEMBER STATES

by

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This Manifest points out what further actions have to be taken by the European Union (EU) and its Member States (MS), to fulfil the agreements in the Kyoto protocol and to achieve the aims in the EU policy of bioenergy with special emphasis on biomass.

Biomass and other renewable energy sources can substantially contribute to European energy supply, improve security of supply and combat climate change.

During the last decade a number of important decisions have been taken by the EU to stimulate the use of renewable energy sources (RES). The European Biomass Association (AEBIOM) strongly supports these efforts which are necessary to fulfil the Kyoto agreement as well as to secure the future supply of energy to Europe.

IN THE OPINION OF THE EUROPEAN BIOMASS ASSOCIATION

Actions has to be taken by the Commission to set up national goals for biomass.

These goals must be followed by introduction of needed steering instruments, such as certificates on heat from RES and minimum level of carbon dioxide taxation at Union level.

A functioning market for biomass must be created.

Public awareness and education about the potential of biomass must be developed.

The potential for biomass introduction in the Accession States should be given special priority.

The use, advantages and effect of different national steering instruments must be evaluated on national and Union basis. Reliable models capable to predict the effects of different incentives, steering instruments and measures must be developed. AEBIOM is ready to take part in such an evaluation and development.

## INTRODUCTION

Biomass is a widespread resource in Europe. Biomass shall mean the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste <sup>3</sup>.

More than 85% of all dwellings in the EU are heated by single house systems. However the number of households heated with wood is decreasing constantly <sup>6</sup>. It is important to reverse this trend by introducing modern, efficient wood furnaces (logwood, woodchip, pellet system). Technologies for domestic heating with wood have experienced a major progress in the last decades. Emissions have dropped significantly and at the same time efficiency has been enhanced from about 50% up to more than 90%. Heating with woodchips or pellets is now a modern technology and in some countries an ecological life style.

District heating, with or without cogeneration of electricity, provides a possibility to supply low temperature heat. District heating using biomass has the greatest potential in volume among all renewable energy sources in the EU. At present district heating is more developed in countries where relevant national support schemes exists together with favourable climatic conditions. A substantial increase in cogeneration of electricity in existing installations is possible.

In areas outside district heating distribution network systems, biomass based central heating systems in small to medium sizes have a large future potential. Such systems could be developed in large buildings, office buildings, hospitals, schools, military buildings etc.

In the last ten years much effort also have been made in some MS to develop biogas production from livestock manure, agro-industrial effluents, sewage treatment and landfills, both in large biogas plants and small farm plants. Although the potential for biogas installations is limited compered to biomass installations they are of significant importance. The reason is the capability of the biogas installations to reduce emission of methane, one of the most important greenhouse gases. Moreover it is relatively simple to produce electricity with biogas.

Introduction of liquid biofuels has so far been less successful, despite that the development in this sector is particularly desirable. The slow introduction progress is due to low oil prices and insufficient governmental support. The transport sector accounts for more than 30% of final energy consumption in the Community and is expanding. Emission of CO<sub>2</sub> from the transport sector is expected to rise by 28% between 1990 and 2010 mainly due to fast growing road transports <sup>10</sup>. Because of unfavourable current conditions for production of biodiesel this industry faces big problems. The price of vegetable oils has increased and the price of fossil diesel has declined. Under these conditions the biodiesel industry will not be able to survive. Significant progress has however been made in some MS.

Production of energy crops is still in its early stage, contradictory to its large potential and despite a strong wish from the EU. The set aside rate has presently gone down, but once a market with sufficient pricing for agro-fuel has been established, a huge

potential of agricultural area will come into use. This will benefit both the Unions agricultural- and energy policy.

## OVERVIEW OVER PRESENT IMPORTANT INITIATIVES

The present energy policy of the EU reflects three main areas; secure energy supply to the Union, environmental protection and competitiveness. Some important documents have been forwarded in this matter during the latest years.

In the white paper, *Energy for the Future: Renewable Sources of Energy*<sup>1</sup>, renewable energy sources are given an indicative target of 12% for its contribution to the EU:s gross inland energy consumption by 2010. A comprehensive strategy and action plan to achieve this goal was outlined. Specific objectives was set to regulate and create favourable framework conditions for RES. This included increased funding, both at national and community level, as well as specific targets and strategies for the individual MS. The MS was however allowed to achieve their increase of RES according to their own potential. New initiatives for transport, heat and electricity were introduced. Special measures was suggested for the transport sector in order to increase the market share for liquid biofuels.

In a recent directive on *Promotion of the use of biofuels or other renewable fuels for transport*<sup>2</sup> an indicative target at 2.0% in 2005 and 5.75% in 2010 of total fuel consumption in the transport sector is set by the EU. A new directive on *Promotion of electricity produced from renewable energy sources in the internal electricity market*<sup>3</sup> has been stated. The target in this directive, that is indicative and has to be reached 2010, is set to 22% of the total production of electricity. In this directive the MS has individual indicative targets.

In the green paper, *Towards a European Strategy for Security of Energy Supply*<sup>4</sup> the Commission expressed a strong will and need to reduce the import of energy to the EU. The dependence of imported energy to the EU has already passed 50% and is expected to reach 70% within the next 20-30 years if nothing is done.

The Commission has further proposed a new multi-annual programme for actions in the field of energy, "*Intelligent Energy for Europe*" Programme (2003-2006)<sup>5</sup>, to follow the framework programme ended on 31 December 2002. With a budget of around 200 million EURO this programme implements the strategy outlined in the green paper. Another important part of the EU:s actions is the *Campaign for Take-Off for Renewables*<sup>6</sup>, which is designed to kick-start implementation of the EU:s strategy for introduction of RES.

The all-embracing goal for greenhouse gas reduction is stated in the Kyoto Protocol of the United Nations Framework Convention on Climate Change, UNFCCC<sup>7</sup>. The EU is in this committed to reduce their emissions, of a basket of six greenhouse gases, by 8% from a 1990 baseline level to a target level calculated as an average between 2008 and 2012. In June 1998 a system of burden sharing was agreed by the MS. All MS in the EU have recently ratified the Kyoto Protocol. Of the six greenhouse gases carbon dioxide is the most important as it contributes to about 80% of the total emissions of greenhouse gases from the Union.

## PRESENT PROGRESS

### *Energy supply*

Taking into account a projected increase in energy consumption, the growth rate of renewable energy sources (in both electricity and heat production) has to be doubled if the EU indicative target of 12% share of renewable energy sources will be met in 2010. The penetration of biomass exclusively has to be tripled. But according to the European Environment Agency (2002)<sup>8</sup> renewable energy targets are unlikely to be met under current trends. On the other hand experiences in some MS suggests that growth could be accelerated by appropriate support measures. In spite of a current rate of increase in combined heat and power, the production of electricity from biomass is not sufficient to achieve the EU indicative target of 18% by 2010<sup>8</sup>. The growth rate in electricity production from total RES will have to increase roughly twofold to meet the EU indicative target of 22% of the total electricity consumption by 2010. This indicative target is also unlikely to be met.

A recent study (2003) presented at the Nordic Bioenergy Conference<sup>9</sup> also show a very slow development of bioenergy compared to the goals put forward by the Commission. Compared to the targets in the white paper on RES only 7% was achieved 2000 . It should have been 33% after five years of the period between 1995 and 2010. The analyse also showed big differences between the MS. There are goals on the European level, but so far there are no goals for the MS.

### *Greenhouse gases*

Carbon dioxide is the major source of the total EU emissions of green house gases. The emission of carbon dioxide is to a great extent caused by use of fossil fuels in the transport sector and in the production of heat and electricity. To achieve the targets in the Kyoto Protocol the EU and its MS will need substantial further emission reductions of all six greenhouse gases and of carbon dioxide in particular. During the 1990s carbon dioxide emissions from energy industries (mainly electricity production) declined, while at the same time electricity production and consumption increased. This decoupling was due to several factors. Almost half of the reduction came from the shift of fuels in power production from coal to natural gas. A shift from coal to renewable energy sources and nuclear power accounted for about one third of the reduction.

According to European Environment Agency<sup>10</sup> the decrease of the total emissions of greenhouse gases is not sufficient. With existing policies and measures the projections for EU:s total greenhouse gas emissions shows a decrease by 4.7% between 1990 and 2010.

This leaves a shortfall of 3.3% to reach the EU target of an 8% reduction.

## PRESENT STEERING INSTRUMENTS

Most of the AEBIOM member countries operate a variety of different steering instruments, all aiming to support and enhance the use of RES or biomass directly or in-directly.

A recent survey (2003) among the AEBIOM member organisations as well as the country reports in the Altener-project "Biomass survey in Europe"<sup>11</sup> gives a very divers picture.

Within the MS the steering instruments consist of EU-directives and National laws and commitments. In the Accession Countries and the AEBIOM members outside the EU the steering instruments are normally limited to the Flexible Mechanism in the Kyoto protocol and/or international support and aid programmes. The wide variety of national steering instruments depends mainly on differences in technical infrastructure, natural resources and industrial tradition, geographic and climatic conditions and last but not least in political will.

The present national steering instruments consist either of; market regulations, advantageous taxation, different kinds of subsidies or special financial tools.

The market regulations are used only in the production of electricity. Among the market regulations trading with certificates for green electricity is used in Belgium/Wallonia, Italy, the Netherlands and Sweden. Feed-in prices are used in Austria, Denmark, France, Germany, Ireland, Portugal and Spain. Target values for obligatory production of electricity from RES is in place in all MS (Directive 2001/77/EC). But this does not mean target values for obligatory production of electricity from biomass. Some countries, as France, Germany, the Netherlands and Sweden have a voluntarily system with special (higher) consumer prices. Most of the AEBIOM member countries except France and the post communist states in Eastern Europe have deregulated their electricity markets.

Many of the countries use advantageous taxation for promoting biomass or bioenergy. This advantageous taxation can consist of carbon taxation on fossil fuels or differentiated energy taxation or a combination of both as in Austria, Finland, Germany and Sweden. Some countries like France, Ireland and Latvia have restricted carbon taxes on fossil fuels. Italy operates only with carbon taxes and the Netherlands only with different energy taxation.

Different kinds of subsidies or grants are also widely in use. Most of these subsidies are set up for electricity production or conversion of heating (with fossil fuels or direct electricity) to biomass. Other kinds of subsidies, used to promote energy efficiency and/or research are in place in most of the AEBIOM member countries, with the exemption of the post communist states in Eastern Europe.

Bioenergy-subsidies connected to support to developing areas and creation of new employment is used to a minor extent in all countries.

Subsidies for non-food use (whether growing anything or not) on set aside land exist in all MS. But only Sweden and Czech Republic use subsidies for direct promotion of energy production from agricultural land.

Special financing tools like; redemption of loans, reduced interest rates, interest free loans and co-financing are used to a limited extent with the exemption of Austria, Belgium/Wallonia and Czech Republic that use different kinds of cofinancing.

## CURRENT BARRIERS

In most European countries the lack of knowledge, regarding modern technology for biomass heating with pellets, woodchips or logwood is fundamental. Wooden fuels is

often considered as an old dirty, expensive and labour demanding fuel. Despite important initiatives from the EU more information about modern biomass technology is needed. Many of the AEBIOM member countries also point on a nonfunctioning market for wooden fuels as an important barrier for their expansion. Investment costs can be a dilemma since wood heating is characterised by higher investment costs and lower fuel prices. Competition from a strong established oil and natural gas industry is also considered as a strong threat to the bioenergy sector in the opinion of AEBIOM:s member countries.

## POSITION OF AEBIOM

To achieve the Kyoto target<sup>7</sup> and the goals in the White<sup>1</sup> and Green<sup>4</sup> papers the EU will need substantial development in the use and production of RES, and biomass in particular. The EU must progress with domestic policies and measures. National and regional indicative goals for the development of RES in line with the European framework must be set up. Several conditions have to be met to introduce bioenergy into the heat market; sufficient taxation of fossil fuels, the existence of district heating networks, financing incentives for private house owners to switch to bioenergy, a local absence of gas supply, sufficient raw material and a strong government support.

Currently the MS operate too many different uncoordinated steering instruments at national levels, including green certificates, investment aid, tax exemptions or reductions, tax refunds and direct price support schemes. In the opinion of AEBIOM these must be co-ordinated and simplified. Each new steering instrument has to be evaluated in the context of the existing ones.

Taking the differences between the European countries into consideration, national experiences must be shared between the MS, especially when it comes to the Accession Countries.

According to the earlier mentioned questionnaire the most needed measures in the opinion of the AEBIOM member organisations are:

- New directive on renewable heat is a strong wish in many countries.
- Carbon dioxide taxation on fossil fuels is needed in several countries.
- National targets for energy production from biomass must be set up individually in the MS.
- Existing national indicative targets for the MS on production of electricity from RES must be reached individually.
- The EU:s Structural Funds must be used in a larger extend for implementing biomass projects.
- Increased support must be given at national levels to implementation of biomass projects.
- Trading with emission quotas must increase both at national and at EU level (upstream model).
- Co-ordinated economic steering instruments for the MS must be put in place.
- Further use of Flexible Mechanisms in the Kyoto Protocol.
- Further investments in infrastructure, R&D and demonstration projects on biofuels.
- Establishing a European market for agro-energy and subsidies for promotion of energy crops.

- Support to the framework of third countries co-operation in order to strengthen the export opportunities for the European industries
- Intensified campaigns for introduction of bioenergy in small and medium size installations.
- A functioning market for both processed- and non-processed biomass.

## FURTHER ACTIONS NEEDED

As was pointed out in an earlier Manifesto from the European Biomass Associations (1998) national targets for different RES sectors have to be put in place. Actions has to be taken by the Commission to convince the Member States to set up indicative goals for biomass use in specific sectors such as, single house- and industrial heating systems, district heating and power production from biomass. These targets must be followed by introduction of the needed steering instruments to guarantee that the targets are met. Only the EU can solve such a task in co-operation with the Member States.

The EU should develop a Directive on the promotion of biomass for heat production and for increased use of district heating and cogeneration, just as the EU has already adopted directives about the promotion of biofuels and the promotion of electricity from RES. A minimum level of carbon dioxide taxation on fossil fuels must be implemented in all Member States. New steering instruments may have to be developed, such as heat certificates.

More emphasis has to be put on public awareness and education about the potential of biomass. Special target groups like plumbers and local planners should be targeted, as well as the general public. The potential for biomass introduction in the accession states should be given special priority. The fast growth rate expected in these countries and the need to renew the infrastructure gives new opportunities for investment in RES, and especially biomass.

The use, advantages and effect of different national steering instruments must be evaluated on national and EU basis. Reliable models capable to predict the effects of different incentives and measures must be developed. AEBIOM is ready to take part in such an evaluation.

## REFERENCES

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