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Production and Utilization of Crops for Energy

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Various measures to achieve the EU goal for the use of bioenergy with special focus on field energy. Challenges for agricultural policy.

Birgitta Vainio-Mattila, Senior Adviser, Ministry of Agriculture and Forestry, Department of Agriculture, PO Box 30, FI-00023 GOVERNMENT, tel. int. +358 9 160 52911, GSM +358 40 861 7793, fax +358 9 160 53400, birgitta.vainio-mattila@mmm.fi

Worries about climate change, increasing dependence on fossil fuels, growing imports and rising energy costs have greatly increased the interest in producing energy from renewable raw materials. Today it is impossible to talk about the markets of agricultural products without reference to bioenergy production and consumption as well as to climate change.

The growing interest in biomass and energy produced from this is mainly considered a positive thing in terms of current agricultural production. Increased use of renewable resources as biomass gives a good opportunity to agriculture to promote its positive environmental functions and to make its contribution to the work to prevent climate change. Production of bioenergy from biomass is also seen as an important business opportunity for farmers. Bioenergy offers potential economic benefits for agricultural markets and rural economy. It is even said that bioenergy production represents one of the major mainstream opportunities for agriculture over the medium to long term in the EU.

European Union goals for bioenergy

The 2007 Spring European Council set a firm target of cutting 20% of the EU's greenhouse gas emissions by 2020. The EU leaders set a binding overall goal of 20% for renewable energy sources by 2020. A binding minimum target of 10% for the share of biofuels in overall transport petrol and diesel consumption by 2020 was also set.

Concerning the 20% goal for renewable energy sources, different targets for Member States will be set taking into account the different national starting points and potentials, including the existing level of renewable energies.

Member States of the European Union are also committed to a 20 % improvement in energy efficiency by 2020.

Various measures to achieve the goals

In many cases the growth in bioenergy production and consumption depends on public support as the production costs of heat, electricity or fuels from biomass often exceed those of fossil energy.

Many important measures can only be taken at the level of the Member States, because the situation as regards bioenergy varies greatly between them. On the EU level the key measure to promote bioenergy is the Energy Taxation Directive adopted in October 2003. According to this directive, the Member States may use tax reductions or exemptions for electricity produced from biomass as well as for biofuels (max. 6 years) made out of biomass. These tax reductions and exemptions are considered as state aids, which may not be implemented without prior authorisation by the EU Commission.

Concerning biofuels the directive also states that, if the Member States have to apply binding targets for biofuels under the EU legislation, no tax reductions or exemptions may be applied.

Agricultural measures

The Common Agricultural Policy has already encouraged farmers to grow energy crops for many years, both through direct aid payments and indirect incentives.

In the CAP reform of June 2003 direct aids were decoupled from the production so that farmers can better base their decisions on market signals and grow crops in response to

market needs. In this reform a new aid scheme was introduced, where a sum of 45 euros per hectare may be paid for land used for energy crop production. In December 2006 this aid for energy crops was extended to the new Member States and the maximum area which can benefit from this aid was increased from 1.5 million hectares to 2 million hectares. At the same time the Member States were allowed to grant national aid up to 50% of the costs of establishing permanent crops on areas on which an application for the energy crop aid has been made.

The set-aside obligations were introduced in the CAP reform 1992 to balance the cereal market. Cultivation of crops for non-food uses, including energy crops, is allowed on the set-aside area.

Possible future measures in the CAP:

- modification of the cereal intervention system

It has been decided that maize intervention will be phased out by marketing year 2009/2010. This will significantly increase the competitiveness of maize in biofuel use.

- set-aside obligation and Blair House agreement

At the moment there is discussion about abolishing the set-aside requirement for the current marketing year 2007/2008. In 2008 the CAP will be reformed again (so-called Health Check) and it is possible that the set-aside obligation will be withdrawn in this context, which could lead to freer allocation of land in EU. At the moment the Blair House agreement limits the production of energy crops on set-aside land to one million tons soybean equivalent. If the set-aside requirement is abolished the Blair House agreement will also no longer apply, leading to greater oilseed production, which in turn would serve the surging biodiesel demand. In the cereal sector the higher supply of cereals at a somewhat lower price could provide incentives to build up ethanol processing capacities.

The EU's new rural development policy for the years 2007-2013 provides several support measures to promote bioenergy. For example, support may be granted for investments in sectors such as biomass processing and bioenergy installations on or near the farms. In the Community Strategic Guidelines for Rural Development the Commission recommends the Member States to support investment and training in the field of non-food production, to create new innovative outlets for production or to help the development of renewable energy materials and biomass processing capacity.

Estimates of the development of bioethanol and biodiesel production show a dramatic increase in the demand for energy crops within the next few years. There are concerns about possible negative environmental effects which may result from increasing production of biomass for bioenergy. In the CAP there are the so-called cross compliance obligations in place to ensure that farmers undertake practices to reduce the risk of adverse impacts on the environment. Under the cross compliance requirements the Member States must, for example, ensure that set-aside areas are managed in order to protect the environment.

Information and education of farmers is also very important. Reliable scientific information on the economic and other aspects of bioenergy production alternatives should be readily available to farmers, which means that inputs in research and development are also needed.

Measures taken in Finland

It is the goal of the Government of Finland to achieve a highly significant increase in the use of renewable energy sources from the present level of about 25%. This will call for both significant support for the various links in the bioenergy production chain and measures to secure access to the market for renewable energy. The Government will also seek to achieve a substantial increase in energy self-sufficiency.

The term of the current Finnish Government started in spring 2007, and the programme of this new Government contains several measures aimed to promote bioenergy. Here are some examples of them which are related to agriculture:

- A feed-in tariff for biogas plants (using field biomass, slaughter waste, various kinds of livestock manure or community waste as raw material) will be introduced. The system will include plants with an output of less than 20 MW, and it will provide compensation for the difference between the market price and the bioenergy price of electricity.
- Investments in biogas production units at farms and major waste treatment sites will be supported, the own use of such energy by the farms and units that generate it will be tax-free, and the potential for use in local grids will be investigated and secured.
- Biodiesel produced and used on the own farm will be exempted from excise tax.
- Agricultural advisory organisations will be encouraged to develop their cooperation and the necessary resources for this activity will be provided.
- Under the new Rural Development Programme, efforts will be made to promote rural microenterprises, develop decentralised bioenergy production and create the necessary prerequisites for innovative local activities, including village development, advisory services and training.
- The greatest potential for increased use of renewable energy is in forest-based bio-energy. However, the increased use of wood for energy generation must not jeopardize the supply of wood re-processing processes.
- To secure the use of forest energy in a cost-effective manner, there must be a substantial increase in public support for technological development and investment and tax-free status for all bio-based energy.

There are also several measures already in place in Finland. For example in accordance with the Energy Taxation Directive, tax exemption applies to biogas in electricity and heat production. In spring 2007 a decision was taken on an act which set down an obligation to include a certain percentage of biofuel in fuels. This percentage is 2 in 2008, 4 in 2009 and 5.75 in 2010.

References:

European Commission 2006 "Biofuels in the European Union: Agricultural perspectives" Fact Sheet

European Commission 2006 (Commission staff working document (SEC(2006)1721)