

Estimating environmental constraints for bio-energy production in Europe

The use of biomass for energy and fuel production in the EU offers significant opportunities for reducing greenhouse gas emissions and increasing energy security. However, an increase in bioenergy production can also put additional pressures on farmland and forest biodiversity as well as on soil and water resources. Hence it is important to know how much biomass could technically be used for energy production without increasing pressures on the environment. The EEA has estimated the 'environmentally compatible bio-energy potential in Europe' in a recently published report, please see:

http://reports.eea.europa.eu/eea_report_2006_7/en

For this work the EEA developed a number of environmental criteria to minimise additional environmental pressures from bioenergy production. These include, for example, a share of 30% for 'environmentally orientated farming' plus 3% ecological compensation areas in arable regions in 2030. The environmental criteria for forestry include the maintenance of current protected areas and restrictions on forest residue removal depending on site conditions. Based on these criteria, the environmentally-compatible bioenergy potential for the EU-25 for 2010, 2020 and 2030 has been calculated. The report, which did not analyse costs and logistics, finds that the EU-25 could actually produce 190 Mtoe (million tonnes of oil equivalent) of bioenergy, in an environmentally viable fashion, by 2010. This could reach almost 300 Mtoe by 2030.

The authors stress the importance of managing any proposed rise in the production of biomass in line with other Community policies and objectives aiming to protect biodiversity and reduce waste. The report calls for the implementation of environmental guidelines at local, national and European level to achieve this. There are also possibilities for synergies between the large scale production of bioenergy and the environment. For example, innovative bioenergy crops such as perennial grasses as well as short rotation forestry can combine high yields with relatively low environmental pressures. They can even be beneficial as they add to the diversity of landscapes.

Two technical reports on the bio-energy potential in the agriculture and forestry sectors are under preparation. Both are foreseen to be published in 2006 and will analyse in more detail the bio-energy potential in the forestry and agriculture sectors as described in the already published study.

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