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Europe has potential for increasing forest chip and agrobiomass use by 50%

Agrobiomass and forest chips are the most underused bioenergy sources available today; there is potential for increasing their use by 50% from the present. Increasing biomass fuel use would help attain sustainable development goals.

Thanks to the EUBIONET III project coordinated by VTT Technical Research Centre of Finland, there is now more accurate information available than ever before on biomass reserves in the EU. The project involved estimating the biomass potential in 23 EU Member States and Norway. The annual potential for biomaterial gained from forests, fields and industry was eventually estimated at the equivalent of 157 million tonnes of oil.

“In this project, we focused on the technical and economic potential of biomass reserves and on solid biofuels. If we further assume that about half the waste generated in the EU is biodegradable, that would translate into the equivalent of about 37 million tonnes of oil, bringing the total available biomass up to some 200 million tonnes of oil,” says Senior Research Scientist **Eija Alakangas** from VTT Technical Research Centre of Finland, who was in charge of the project.

Since the publication of the report, the countries involved have estimated in their national renewable energy action plans that about 250 million tonnes of biomass reserves would be required to achieve the combined goals set. It has not yet been estimated at the EU level what the volume required for sustainable development might be. Moreover, some countries import their biomass fuel from other EU Member States or from outside the EU.

“Current use of bioenergy exploits less than half the bioenergy potential of the 24 EU Member States studied. The greatest potential for increase is in forest chips and agrobiomass. Finland aims to use forest chips to produce energy equivalent to the yield of 13.5 million cubic metres of solid fuel or 25 TWh[1],” says Alakangas.

The data on biomass reserves established during the project are publicly available, and best practices are being exchanged between countries. This is good for Finnish technology exports. Information on biomass fuel chains, for example, is useful for enterprises.

In addition to exploring the biofuel potential of the EU and its sufficiency, the project studied sustainable development criteria for solid biofuels, generated information for use in standardisation and monitored biofuel price development since 1999. The project yielded information useful for new quality standards for solid biofuels, and a price index for international trade was developed together with businesses.

[1] 1 TWh = 1 billion kWh of energy. 1 million tonnes of oil (Mtoe) equals to 11.63 TWh of energy.

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Solid biofuel standards will make international trade in biomass fuels easier. FOEX, an enterprise specialising in monitoring indices, uses a standard as the basis for the index for industrial pellets. The project aimed to increase biomass fuel use in the EU by finding ways to remove existing obstacles to trade.

The EU will make use of the findings of the project in its preparatory work. EU criteria for sustainability of solid and gaseous biofuels will be drawn up in the future, and the country reports and summary produced in the project will provide valuable inputs.

Index for monitoring pellet price trends

Wood pellet trade was evaluated in the project using customs codes and by collecting price data on biomass fuels. FOEX publishes an industrial pellet index based on prices in the Baltic Sea region, and in the future this will be extended to include forest chips. The FOEX index is based on actual sales. Information has also been gathered in countries not covered by the price index.

Following the project, a new customs code will be introduced for wood pellets to monitor the pellet trade from 2012.

EU sustainability and energy policy will influence how biomass fuel use develops in the future. Major pellet users have proposed that greenhouse gas emissions should be calculated for solid biofuels and that industrial pellets should have a quality classification and certification system of their own. Transport emissions are also an issue in international trade. The necessity and possible content of an industrial pellet standard and certification system were explored in the project through questionnaires.

Major exporters of wood pellets to the EU include the USA, Canada and Russia. Most of the imported wood pellets are blended with coal and used at large power plants.

The EUBIONET III project ran from 2008 to 2011. Together with its earlier incarnations, the project has lasted altogether 12 years. The Ministry of Trade and Industry and its successor the Ministry of Employment and the Economy have provided partial funding for the project throughout its existence. The project forms part of the Intelligent Energy Europe programme.

Additional information

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