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## [The pulp industry and the biofuels boom](#)

In July 2006, Pulp and Paper International reported on a conference called World Bioenergy 2006. The conference took place in Sweden, where biofuels provide 25 per cent of Sweden's energy and the majority of its heating. "Pulp mills with combined heat and power plants sending excess energy to district heating systems are an established part of the country's infrastructure and a useful source of extra income for its pulp mills," notes Pulp and Paper International.

Several pulp companies are working on converting pulp mills in the North into biorefineries. In Quebec, Tembec sells 17 million litres of ethanol a year from its Temiscaming dissolving pulp mill. Domsjö Fabriker recently spent about US\$35 million to convert its dissolving pulp mill at Örnsköldvik in Sweden into a biorefinery. Two years ago, Etek opened a 10,000 tonnes a year pilot plant in Örnsköldvik to produce ethanol from wood residues. Next year, the company plans to start work on three more plants which will produce a total of four million litres of ethanol a year.

In 2008, a pilot plant at the Växjö Värnamo Gasification Centre in Sweden will start producing syngas (a mixture of carbon monoxide and hydrogen) from fermented wood chips. A commercially viable fuel is likely within five to ten years. Meanwhile, Royal Dutch Shell, the world's top marketer of biofuels as well as one of the biggest oil companies in the world, is working on a process to produce ethanol from wood chips.

In Norway, Norske Skog and energy company Hydro have set up a joint venture to look at the feasibility of producing biodiesel from wood. They hope to build a biodiesel plant in southeast Norway by 2012. In France, a consortium including Genencor International, Tembec and the University of Bordeaux's Pine Institute is working on a three-year study to develop ethanol from paper pulp.

The demand for biofuels in Europe is likely to continue increasing. The European Biofuels Directive rules that 5.75 per cent of transport fuel in Europe should come from biofuel by 2010. The figure could increase to 20 per cent by 2020. A biomass action plan at EU level aims to increase the share of bioenergies to 8 per cent by 2010.

While the pulp industry is happy to produce biofuels such as ethanol from wood it is less happy when the wood is used directly, as wood pellets for heating, for example. In a May 2006 position paper on biofuels, the Confederation of European Paper Industries (CEPI) complains that "the European Renewable Energy Policy puts too much focus on the use of wood as biomass."

CEPI is complaining because the growth in the use of wood pellets as biofuel has led to an increase in wood prices. The increased demand for wood will lead to increased logging. Sweden already imports wood pellets from Canada. Biofuel proponents are pushing for an increase in the annual allowable cut in Sweden. They are also suggesting removing parts of the tree which are usually left behind to rot - stumpwood and branches. Urban Bergsten, professor of silviculture at the Swedish University of Agricultural Sciences, argues that forest policy in Sweden should be reformed to favour increased biofuel production and to increase growth rates through the use of faster growing species. More water sucking monocultures, in other words.

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Erik Ling of Sveaskog, the state-run Swedish forest company, suggested at the Bioenergy conference in Jönköping that production over 80 per cent of Sweden's forestland should be increased. The remaining 20 per cent could be converted to "environmental reserves". Ling told the Bioenergy conference that increased growth can be achieved by improved planting and seeding, maintenance of forest ditches, and increased use of nitrogenous fertiliser. Ling presumably didn't point out that increased use of nitrogenous fertiliser will lead to more nitrous oxide in the atmosphere. Nitrous oxide has 310 times the global warming power of carbon dioxide.

The pulp and paper industry in Europe is "the largest industrial sector using biomass as fuel", according to the Confederation of European Paper Industries. Much of this is because pulp mills burn waste products from the pulping process. But the pulp and paper industry remains a large consumer of electricity. CEPI is part of an alliance with other high energy consumers such as the steel industry and the cement industry which lobbies for cheaper energy prices. One of the reasons that the industry is moving to the South is because electricity prices are cheaper there. Converting pulp mills to biorefineries will also be energy intensive.

Whether pulp mills are used to produce pulp or biofuels, the globalised structure of the industry will remain, as will the fact that it is cheaper to grow the raw material for pulp in massive industrial tree plantations in Brazil than it is in Sweden. According to Stora Enso's figures, trees can grow more than ten times as fast in Brazil as in Sweden. The price at the mill gate in Brazil of a cubic metre of wood is less than half the price it is in Sweden. Pulp production per tonne in Brazil is one-third as cheap as in Sweden. The same globalised commodity rules will apply for biofuel production. Converting pulp mills in the North to biorefineries will drive the expansion of industrial tree plantations in the South.

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