



Challenge and Opportunity

In order to embrace the growing interest and development in wood for energy, the forest industry needs to shed its traditional view of wood processing and think about becoming an energy provider.

By David Price

An oil and gas engineer looks at deserts, the deep seas and ice fields as energy basins. He also has a growing interest in forests as energy providers. Do the more enlightened CEOs of our industry share his latest interest? And what are they doing about it?

We all know how versatile wood is, and historically it has been a relatively cheap raw material to process into a high added-value end-product. But we've all been ambushed by high energy costs, and for Europe next year, there will be much higher wood costs—especially spruce and birch—as Russia imposes stiff export taxes.

The wood for energy program has gained speed in the last three years as energy costs increased. At first, the industry didn't see a problem as it has traditionally burned biomass for CHP (combined heat and power). But oil and gas—and wood—prices climbed. Northern mills went south for forests and fiber, and energy companies slowly moved into harvesting wood for industrial and chemical spin-offs.

Shell, BP and Chevron are old hands at converting wood into chemicals, fuel and other products, while the energy community as a whole is now moving in a more determined manner towards biofuels. It also has deeper pockets than the forest industry and it is now a competitor for the industry's resource. In Europe, the forest industry's association, CEPI, gives subsidies for biomass energy.

Our industry's progress is patchy. I have tracked 30 forest products companies in the last three years and 24 are using biomass for energy or CHP, which is the industry's traditional pattern. Only six are into biofuel/diesel, biochemicals or ethanol. There is clearly room for improvement.



Europe

There is no way the industry can develop biofuel without help. It needs partners from research labs and the energy and chemical sectors. UPM of Finland has set up a new Biorefinery Development Center for research into biofuels and biochemical. Its partner is the Lappeenranta University of Technology. Swedish company, Sodra, will produce motor diesel from tall oil, start-up in

late 2009. It is building a pine diesel plant in northern Sweden and will produce up to 100,000 cubic meters/year of pine diesel oil, enough to power 100,000 diesel vehicles traveling an average 10,000 kms a year. Sodra's partners are a petroleum company, a state-owned forestry group and a biorefinery. Pine diesel is a second generation renewable diesel and the plant will also produce chemicals for the food and pharmaceutical industries.

Stora Enso has partnered with Neste Oil of Finland for transportation fuel. And in the US, Weyerhaeuser is working with Chevron.

However, some research is being done by firms that do not include established forest products companies. In Europe, such a group is Group Wood Holdings/Prenergy (wood-based energy), Range Fuels (biorefinery) and Choren (Daimler, Volkswagen and Shell - biorefinery), which is focused on developing and exploiting the potential of converting wood biomass materials into energy and fuel.

North America

Over the last two years this magazine has regularly reported on new biofuel projects. Tamarack Energy Inc of Connecticut and Macoma Corp. are working on a wood-to-

ethanol plant in Pennsylvania and New England. Flambeau River Biorefinery in Wisconsin is in partnership with American Process Inc. of Atlanta on a similar project.

Honeywell International has stepped up research to convert bio-feedstock into biodiesel and ethanol. Wisconsin Rapids and Stora Enso have signed up with Third Coast Bio-Fuels LLC for ethanol production at a site on the west bank of the Wisconsin River. And SUNY (Syracuse), the US Forest Products Laboratory and Catalyst Renewables are developing a small-scale R&D wood-to-ethanol project in Lyonsdale, New York.

In Canada, British Columbia Hydro has called for bioenergy proposals to identify projects to provide energy from forest biomass.

A New Kind of Company?

PricewaterhouseCoopers' (PwC) latest report, *Branching Out* (2008), notes that forest products companies with strong assets in wood and pulp will not have the deep knowledge

of these new markets—energy, transport, fuels and chemicals—such as the dedicated players like Shell, Chevron and DuPont have. They lack the experience of operating in high-

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ly regulated markets, a skill energy companies have acquired. Nor does our industry have the capital sources that energy companies can access. There may be a credit crunch out there but the private equity sector can still unroll a wall of money.

PwC thinks the future is bright for our industry. "A winning attribute will be flexibility and for forest products players it will mean being unafraid to exit existing businesses and assets, in order to switch resources to areas where there are better prospects."

So, will we see a new stand-alone company hived off from its forest products parent, or a multi-skilled partnership of wood, energy and chemicals producers?

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