

Biomass power appeal growing in forest industry

But increased industrial use of wood waste to generate energy is reducing its viability on the domestic front

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One industry's waste is increasingly becoming its energy source.

Rising prices for traditional fuels such as natural gas are boosting the viability of biomass as an alternative power source for the province's forest industry. But the biomass sector's potential in domestic power production could be limited by many of the same factors that make it attractive.

Tapping the energy potential of the forest industry's wood waste, industrial biomass power plants have begun springing up across B.C. And while the Canadian Bioenergy Association estimates that biomass supplies only about three per cent of Canada's electricity needs, lower costs of converting to industrial biomass power generation are improving the technology's outlook.

"The economics were mildly appealing before, but now with the rapid appreciation in the price of natural gas, all of a sudden the payback periods are down to one or two years, which is enough to give incentive," said **Peter Tertzakian**, chief energy economist for Calgary-based **ARC Financial Corp.** "Look for this space expanding over the course of the decade."

Through \$5.4 million in equity financing last year, ARC became the majority owner in Vancouver's **Nexterra Energy Corp.** The biomass gasification technology company recently announced its first commercial project to outfit **Tolko Industries Ltd.**'s Heffley Creek plywood mill with a biomass power system.

"Our whole business has really taken aim at the industrial fuel and electricity markets," said Nexterra CEO **Jonathan Rhone**. "Our vision is that these mills will be able to disconnect from the gas line, and eventually from the [power] grid."

Rhone believes the business case is now strong enough for forestry companies to take notice and make the switch to biomass.

"We're able to reduce their natural gas consumption, insulate them from future gas price volatility, save them a lot on their own fuel ..., and we're able to help them eliminate one of their emission streams," he said.

The Heffley Creek project will cut the mill's natural gas consumption by 40 per cent – or enough to fuel about 1,900 single-family homes annually – and yield over \$1.5 million in annual savings after capital costs are recov-



Nexterra CEO Jonathan Rhone (l) with Tolko's Jim Baskerville

ered, Rhone said. He added that the payback period on capital for Nexterra's technology is generally less than three years for a solid wood plant, and two years for pulp and paper mills.

"For a mill that produces wood waste, the highest value of that residue is to displace natural gas," Rhone said, pointing out that a tonne of wood residue is worth about \$120 when used as a direct replacement for natural gas.

The B.C. forestry industry produces about 6.1 million tonnes of wood residue annually, according to **BC Hydro**, of which almost 75 per cent is already used by industry. Another 1.5 million tonnes come from non-forestry wood sources.

Nexterra is not the only B.C. company helping turn wood waste into energy.

Vancouver's **Sandwell International Inc.** has been involved in the biomass industry in various engineering capacities for:

- **Finlay Forest Industries Inc.** in Mackenzie;
- **Pacifica Paper Inc.** in Powell River; and
- **NW Energy (Williams Lake) Corp.** power plant, which was formerly owned by **B.C. Gas Inc.**, and is now operated by **TransCanada Power, L.P.**

"Biomass in general is becoming more valuable as conventional fuels and energy prices remain high," said Rhone. "All of the major forest companies are looking at plans to convert some of their operations to use wood residue."

But as industry devours more of its wood

waste, the prospects of its use as a power source in the wider public domain become increasingly economically prohibitive, according to **Guy Dauncey**, president of the **B.C. Sustainable Energy Association**. Dauncey added that the association supports the use of wood waste as a biomass fuel as an alternative to its incineration in beehive burners and landfills.

"It can be a clean form of energy. It can generate jobs. It can clean up the air."

Dauncey, however, had reservations about biomass being used as a power source outside of industries that produce their own fuel. He cited **Green Island Energy Ltd.**'s proposal to **BC Hydro** in 2003-04 for a biomass generation facility in Gold River on Vancouver Island as an example.

"They couldn't find any forest biomass waste on the island at all," he said. "It was all allocated."

Large-scale commercial viability for biomass energy production requires guaranteed supplies of nearby wood waste, Dauncey said.

"It makes no sense to use up the same amount of energy in trucking biomass to a plant than you're getting from the plant." ♦

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