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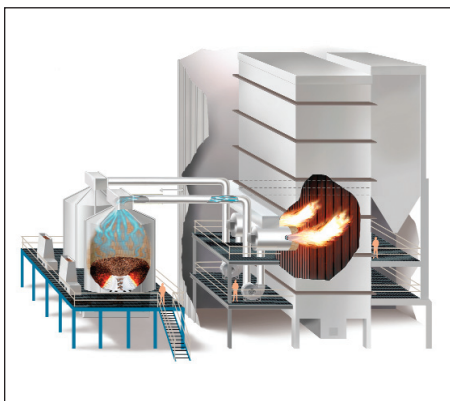
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NEWS

Nexterra Gasification Systems:

Fueling energy savings today, and a platform for the biorefinery of tomorrow



Unprecedented challenges are often the catalysts that inspire profound changes.

Changes in thinking. Breakthroughs in technology. Opportunities that never existed before. New ways of doing business.

North America's pulp and paper and forest products industries have certainly grappled with many significant challenges over the past decade. Dramatic increases and volatility in energy costs. Aging infrastructure. Competition from new, highly efficient foreign mills. Dropping demand and lower prices for many products. Reduced profits for shareholders. And, in Canada, a wildly fluctuating dollar.

North America's pulp and paper industry, for instance, consumes 900 trillion Btu of natural gas and fuel oil each year at a cost as high as US \$8.0 billion. The industry has struggled with the ever increasing and often volatile energy costs over the past decade. And to their credit, industry leaders have made tremendous strides in becoming more energy self-sufficient using their own wood resources.

But the pulp and paper and forest products industries are also looking for a magic bullet that will help them dramatically reduce their costs and dependency on fossil fuels even further, while also creating a range of higher value products from their wood residuals.

While there may be no magic bullets out there, the industry is increasingly excited about the potential to take another giant step forward by converting their mills into "biorefineries". This mill of the future will be able to produce high value products such as electricity, biofuels and chemicals from one low cost product such as wood.

While significant research has already gone into the concept of the biorefinery, many technological challenges remain, and commercial biorefineries are still a long term vision.

Gasification – producing higher value products today

However, there is one technology available today – gasification – that enables mills to self-generate energy and other products using residual wood fibre from their forest harvesting and processing operations. This first, tangible and commercial step toward the long term vision of the biorefinery has already resulted in greater energy self-sufficiency and significantly reduced production costs for industry leaders like Tolko Industries Ltd.

Gasification is a starved air process that uses heat to convert carbon containing fuel into clean burning "syngas" – a gaseous fuel can be used as a substitute for natural gas, fuel oil and other fossil fuels in applications such as in dryers, boilers and kilns.

Based in Vancouver, BC, Nexterra Energy Corp. is a leading developer and supplier of gasification systems that enable industry customers to dramatically reduce energy costs, become more energy self-sufficient, and improve environmental and bottom line performance.

What's unique about Nexterra's gasification technology is that it's commercially available today. It works. You can come and kick the tires.

Nexterra Energy has clearly demonstrated that its gasification systems can dramatically reduce and stabilize energy costs using syngas made from wood residuals.

Nexterra has a commercial plant in operation at Tolko Industries' Heffley Creek plywood mill that provides thermal heat to the veneer dryers and log conditioning vats. The system was commissioned in May 2006, converts 25,000 green tonnes of hog fuel into syngas that displaces 235,000 GJ of natural gas/year. This will result in an annual savings of \$1.5 million/year and a reduction in greenhouse gas emissions by 12,000 tonnes per year. The system is fully automated and has met all performance guarantees.

Nexterra's systems can also be used to produce steam and electricity. Nexterra's gasifiers will be the core component in the biomass cogeneration plant that Johnson Controls is sup-

plying to the University of South Carolina (USC). The USC energy system will deliver 72 MMBtu/hr of useable heat which will represent a significant portion of the heat and power needed to run the campus. This system will enable the campus to reduce and stabilize fuel costs.

Building on Nexterra's gasification platform

Nexterra continues to work with forest products companies to develop, higher value applications for our gasification systems that address new and somewhat more complex technical challenges. For instance, Nexterra is currently working with a major forest products company on an application where syngas will be fired directly into an existing natural gas power boiler at a paper mill.

Nexterra has also partnered with Weyerhaeuser, Paprican, Sustainable Development Technology Canada (SDTC), Canada's National Research Council (NRC-IRAP), Natural Resources Canada (NRCan), Ethanol BC and other forest industry partners to develop a gasifier application which fires syngas into lime kilns, a major consumer of natural gas in kraft pulp mills.

Gasification has a firm foot in the future

Gasification technology is available today for steam and heating applications. Soon gasification will be used to replace natural gas in direct fire applications, such as boilers and lime kilns. Looking over the horizon, Nexterra's gasification technologies will be integrated with reciprocating engines, used to produce chemicals and adapted to other feedstocks.

For pulp and paper companies to take that giant leap forward, there is little question that the industry needs to be on its toes. It needs to focus on the steps it can take today so, when the time is right, it can take full advantage of the opportunities presented by the biorefinery. One step it can take right now is to learn more about gasification and, where it makes sense commercially, get on board with this proven technology solution.

Nexterra walks its talk, and is committed to working with industry to develop a pragmatic roadmap to those opportunities for lower costs, energy self-sufficiency and increased competitiveness.

www.nexterra.ca