



The Edge

Logging and Sawmilling Journal now features “The Edge” in forest innovation

Like the technological leap to mechanized logging, the Canadian forest industry is currently undergoing significant technological advances that will see the industry continue to evolve.

Reduced demand for Canadian lumber in residential construction in the United States, the emergence of China and India as economic powerhouses, the unfolding of the bio-economy, climate change, development of capacity to produce new engineered wood products, and evolution from the ‘product push’ to the ‘market pull’ business model are creating both new challenges and opportunities for the forest industry.

Given the transformation taking place in the industry, Logging and Sawmilling Journal is pleased to announce that it will now be incorporating a publication called ‘The Edge – Forest Innovation’ into its pages, to provide our own version of ‘value-added’ to our readers.

As the section develops, we intend to present our readers with information on some of the most cutting edge and economically feasible developments occurring in forestry research and development, that perhaps could be adopted in their own operations. We look forward to growing and evolving along with the industry in the coming years.

Partnering up on bio-product development

By Tony Kryzanowski

Research organization Alberta Innovates Bio Solutions (AI Bio) wants to encourage the oil and gas sector—and others—to consider partnering with the forest industry to invest in the most promising ‘green’ technologies identified by the groundbreaking Future Bio-pathways Project.

AI Bio invests in research and innovation to grow prosperity in Alberta’s agriculture, food and forest sectors.

The Forest Products Association of Canada (FPAC), along with FPIInnovations was a major proponent of Future Bio-pathways, which provided the Canadian forest industry with value propositions and implementation strategies for integrating various green product technologies into conventional forestry operations. Examples include power generation using forest biomass, manufacturing of more environmentally friendly industrial fluids such as those used in oil and gas production, production of bio-oil, syndiesel or a benign nanomaterial called nanocrystalline cellulose (NCC).

As the study phase of Future Bio-pathways comes to a close, the focus now is on creating outreach networks.

Catherine Cobden, FPAC vice-president of economics and regulatory affairs, says the bio-opportunity for Alberta’s forestry sector and potential partner industries can’t be understated.

“We’ve looked at green chemical and green bio-product development and what we have discovered is that there is a \$200 billion market in these products that is developing that the forest industry, and other sectors of the Alberta economy, are



quite well positioned to play into,” says Cobden. “Just to put that into context, the entire Canadian forest industry is only \$50 billion.”

With the support of AI Bio, Cobden recently met to discuss Future Bio-pathways findings with about 60 individuals from various Alberta government departments, agencies, and forestry companies. In early June, FPAC representatives followed up with an outreach networking event for forestry and oil and gas representatives in Kananaskis.

“We think a partnership network can really play a role in identifying what the strategic needs are to see this really happen on the ground in Alberta,” Cobden says.

She emphasizes that the work to develop these partnerships must begin now because it’s clearly become a race. “The competition is on. The oil sectors and the forest industries in other nations are working hand in glove with the auto sector as well and with many other sectors like the chemical sector to bring forward this new reality in their countries. Canada cannot be left behind. We must work together to make this happen.”

AI Bio executive director Steve Price says there is a very high level of enthusiasm among Alberta’s industries to explore potential partnerships to bring some of the lowest hanging fruit identified in the Future Bio-pathways report to reality.

“Where forestry can play a role is by working in partnership with the oil and gas sector,” says Price. “There are commodities or product lines that can be produced from Alberta forest vegetation such as diluents (thinners). Some of these commodities currently come from elsewhere in the world. Why not produce it in Alberta and sell it to oil and gas companies right here?”

The need for outreach to other industries by the forest sector is important; the Future Bio-pathways report concludes that among the most cost effective ways for the forest industry to take advantage of ‘green’ opportunities as the bio-economy unfolds is to partner with companies in such sectors as the oil and gas, chemical, pharmaceutical, automotive, and aerospace industries, just to name a few.

“It’s not a competitive agenda when we are talking about such potential products as bio-fuels from the forest industry,” says Price. “It’s in the context of providing some ability for our current oil and gas structure to green some of their supply chains in a cooperative and partnership sort of way. The more we can bring these core industries as well as the ag sector and the chemical sector together to work on supporting the oil and gas industry with some of its challenges, the more beautiful it looks as a future for Alberta.”

Price agrees that the outreach networking process is a very important next step, and AI Bio will do all it can to facilitate that much needed dialogue among the province’s key industry sectors. A major potential outcome with more forestry diversification into bio-products is development of a forestry sector that is more resilient to the ebb and flow of commodity wood markets.

“We believe that there is an opportunity for Alberta-based companies to capitalize on some of these new technologies to augment their revenue streams,” says Price, “and in doing so, introducing some elasticity within their companies so that they can withstand any future downturns in the economy.”



Alberta Innovates Bio Solutions is encouraging the forest industry and the energy sector to work together on bio-product development.

For more information on the Future Bio-pathways Project and industry networks being established between forestry and other sectors, contact Steve Price at (780) 427-2567 or steve.price@albertainnovates.ca or Catherine Cobden at (613) 563-1441 ex.314 or ccobden@fpac.ca.

Bio-baler demonstrated for first time as wood fibre harvesting option in western Canada

By Tony Kryzanowski

Your eyes aren't playing tricks on you—that really is a round baler being pulled behind a tractor through a juvenile hardwood stand and creating round bales.

For the first time in Western Canada, Canadian Wood Fibre Centre (CWFC) researchers have demonstrated this innovative and commercially proven woody biomass harvesting system.

The 'bio-baler', a patented juvenile hardwood baling system originally developed by Agriculture and Agri-Food Canada in collaboration with the CWFC and Laval University in Quebec City, is now being manufactured commercially by a Quebec company called Anderson Group Inc.

Operation of the bio-baler requires no additional special equipment. It can be pulled behind a standard 200 horsepower tractor, and the result is a wood fibre round bale similar in appearance to a straw bale. The bio-baler produces round bales weighing between 250 and 450 kgs. It is suited for stands containing fibre with stems no larger than 10 to 12 centimetres thick. The round bales can then be loaded onto a flatbed truck for transport, just like straw or hay bales, or stored on site to dry even when exposed to the elements.

“That’s what we think is key to using this technology,” says Tim Keddy, CWFC Wood Fibre Development Specialist. “Outside of the baler itself, there’s no new infrastructure needed for a farmer or forestry business to run this operation—and it gives farmers use of their equipment at different times of the year when it would be sitting idle.”

CWFC researchers believe that the bio-baler is one proven option that successfully addresses the issue of how woody biomass can be harvested and transported to any number of forestry operations or standalone sites for use as green fuel, raw material for the production of bio-products, or both. Biomass harvesting and delivery is an integral part of the business case forest companies will need to develop to produce value added products from existing operations.

Alberta Pacific Forest Industries (Al-Pac), a large pulp producer in Athabasca, Alberta, has asked CWFC to use the bio-baler as part of a study it is conducting to identify possible options to acquire an additional 50,000 green tonnes annually of biomass from existing regenerating managed aspen stands to add to the 500,000 green tonnes it already consumes in its boiler. About 75 per cent of the boiler biomass comes from wood residues collected from Al-Pac’s wood yard, with the remaining coming from external sources. The biomass fuel is used to generate power for the pulp mill as well as for the provincial grid. Upgrades made to the Al-Pac boiler will require an additional 50,000 green tonnes of biomass to be consumed on an annual basis.