RESOURCEWORLD magazine
INVESTMENT OPPORTUNITIES AND NEWS

The Canadian forest products industry will be a lucrative investment choice for the evolving bio-age

by Grace C. Visconti

The market potential for the Canadian forest industry in the emerging bio-economy is enormous, according to the Organization for Economic Co-operation and Development (OECD). The estimate of biotechnology contributing to the market is 2.7% of the total GDP of OECD member companies by 2030 and this percentage is even higher for developing countries. The federal government did an analysis indicating that global markets for emerging forest bio-products in 2015 would be approximately $200 billion. In comparison, the annual revenue for the Canadian forest products industry in 2010 was just $57 billion.

One specific example is that the bio-economy will be responsible for 10% of chemical production, a broader application of green chemicals, by 2030 and will have a market potential of $62 billion. "The market potential is very significant. However, some individual markets will be niche markets, where the first entrant could fill the market. Thus, there is a global race to be first in these markets. We are confident that Canada will be able to leverage its long-standing leadership as a forest products exporter and realize its share of these markets," said Paul Lansbergen, Forest Products Association of Canada Secretary and Lead Director of Regulatory Affairs.

Catherine Cobden, Vice-President of Economics for The Forest Products Association of Canada (FPAC), presented at the Global Clean Energy Congress and Exhibition in Calgary on November 1, 2011 at the three day event. She spoke of how collaboration is extremely important for niche markets. "The market is definitely there for wood fibre and the technology is almost there. We want to integrate. We can't do this alone so it's a very different game. We don't know how to serve dynamic niche markets."

FPAC represents many of the largest Canadian forest products companies that produce wood, pulp and paper. FPAC represents the producers nationally and internationally in government, trade, and environmental affairs.

At one time, the Canadian forest industry was in conflict with the environmentalists, but this relationship has dramatically changed for the better with the signing of the Canadian Boreal Forest Agreement (CBFA) in 2010. Instead of arguing with environmentalists, they started collaborating with them, resulting in a creative, eco-friendly business partnership. No longer is it an "us versus them" mentality. The forestry industry has truly embraced the concept of sustainability by pledging to be carbon neutral by 2015.

The CBFA covers more than 76 million hectares of public forests licensed to FPAC members. The agreement has facilitated a collaboration between 21 forest companies that are FPAC members, and nine prominent environmental organizations. FPAC members commit to the highest environmental standards of forest management and conservation. In turn, environmental organizations commit to global recognition and support for FPAC members in the marketplace. "Canada already leads the world in third-party certification for sustainable forest management. It signed the globally historic Boreal Forest Agreement, and it has made significant environmental improvements at its manufacturing sites. And we are still working on doing better," explains Lansbergen.

This concern about the environment also led to the Bio-pathways Project, an in-depth study of the prospects of producing a wide range of bio-products using wood fibre. The results underscore how investing in the Canadian forestry industry could be a very lucrative venture. Results of the Bio-pathways Project showed that integrating new technologies into existing mills not only would lead to improved productivity and environmental performance, but also would leverage returns on assets and investments.

Catherine Cobden, Vice-President, Economics, Forest Products Association of Canada, speaking at the Global Clean Energy Congress and Exhibition 2011. Photo by Grace Visconti.

"The Bio-pathways Project was initiated because we realized that our business model was at least partially broken and an improved status quo was not sufficient to prosper in the future. Fundamentally, it was a realization that true transformation was necessary. The CBFA was initiated through out of the box thinking on relations with the Environmental Non-Governmental Organizations (ENGOs). Yelling at each other was not likely to be overly successful for either side and certainly not attractive from a quality of life perspective. So trying something new and talking with ENGOs was explored and ultimately led to the signing of the CBFA," explains Cobden.

"The sustainability of our forest resources is paramount to the industry. Our focus in the Bio-pathways Project was how to better utilize existing residue streams. We are talking about maximizing the value from every tree harvested. We will continue to adhere to all regulatory requirements and our commitments under the Canadian Boreal Forest

Agreement,'' adds Cobden.

The Bio-pathways Partnership Network facilitated by FPAC, provides a forum for member companies to collaborate by exchanging ideas and contact information. The benefit of this partnership is ''to foster business-to-business relationships between forest companies and companies outside the sector. These partnerships may not have any political boundaries – as we are not limiting participation to just Canadian companies,'' said Lansbergen. The market potential and possibilities are considered excellent by forming partnerships and integrating a number of technologies for bio-energy, bio-chemicals, and bio-materials.

Although bio-energy is not new for the forestry industry, since they generate 67% of their energy needs through biomass combustion (heat and power units), new emerging conversion technologies are more efficient because they enable further refinement to bio-chemicals.

''Pyrolysis, gasification, torrefaction, fermentation, and hydrolysis are broad classifications of technologies that produce a variety of bio-energy products, which can then be refined to a myriad of bio-chemicals. The applications are almost endless. New bio-materials, such as composites and engineered wood products open up new markets for the industry,'' explains Lansbergen. Torrefaction of biomass, e.g. wood, is a mild form of pyrolysis at temperatures typically ranging between 200-320°C. During torrefaction, the biomass properties are changed to obtain a better fuel quality for combustion and gasification applications.

Though the industry produces conventional wood products such as lumber, wood panels, engineered wood products, market pulp, specialty pulps, paper, paperboard, and tissue, the range of emerging products keeps growing. Since mills have now become more energy self-sufficient, some are even exporting power to the electrical grid for extra revenue.

The Canadian forest products industry will need to transform with the help of partnerships with other sectors, investors, and technology providers. Government policy can help in this transformation. ''So far, the federal government is supporting the transformation with its 'Investing in Forest Industry Transformation' program, among others. Many of the provincial governments are also working with the industry to facilitate the transformation,'' says Lansbergen.

The new era in forest products will maximize what comes out of the forest and develop uses for forest waste. Adopting new technologies and directing fibre to specific production processes will generate the most value. Lansbergen admits, ''Not all fibre is created equally so it is important to leverage the characteristics and properties of the fibre in choosing what product to make from it.''

Canada's forest rich provinces will benefit from the transformation developing a more sustainable forest sector for the bio-age, even though each has different strengths. For example, Alberta wants to connect its forest and energy industries, whereas Ontario wants to connect the forest industry with the automotive sector and chemical cluster in Sarnia.

FPInnovations, the world's largest private not-for-profit forest research institute, has assisted in the transformation of the forest industry and improved its competitiveness through research. Some new substances FPInnovations will bring to market are the NCC nanocrystalline cellulose, CNF cellulose nanofilaments and Cross-laminated Timber CLT.

Many of the new technologies can be bolted to existing facilities when they transform. The integration will be cost effective. ''This has the advantage of putting at less risk the primary production of traditional products. This is critical for single mill companies. For larger companies, they might be able to absorb more risk for a single mill since they have a suite of operations,'' clarifies Lansbergen.

A new era has certainly dawned for the Canadian forestry industry, environmentalists, and investors; respect, collaboration and innovation have been essential in creating positive change. ''Canada leads the world in sustainable forest management evidenced by the Canadian Boreal Forest Agreement and the amount of 3rd-party certification – Canada has 42% of the world's certified forests. Moreover, our carbon footprint analysis of some of the pathways found that they all had neutral to negative footprints,'' explains Lansbergen.

Partnerships are critical to accelerate the industry's transformation. The Bio-pathways Project has helped enormously by assessing the adoption of these new technologies. Lansbergen defines its importance. ''This includes the ability to estimate the rate of return on investment. This enables a higher level of due diligence and economic foresight within corporate strategies. Companies now have people dedicated to developing transformational plans. Environmental leadership is a mainstay of our go forward plan.'' ■

Contacts at Forest Products Association of Canada (fpac.ca): Catherine Cobden, Vice-President Economics, (ccobden@fpac.ca), 613-563-1441 x314
Paul Lansbergen, Association Secretary, Lead Director, Regulatory Affairs (plansbergen@fpac.ca