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MOUNTAIN PINE BEETLE SYMPOSIUM
Province of British Columbia
November 21, 2003 – Quesnel, BC

"Opportunities for increased production and alternative products"

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The recent report by Larry Pedersen, The Chief Forester, clearly laid out the enormity of the problem facing the BC interior as a result of the Mountain Pine Beetle infestation. An additional 4,200,000 hectares infested this past year. To date, we have over 150 million m^3 of lodgepole that has been beetle-killed. **How do we recover the lost value from such a large volume of dead wood?**

There is **no silver bullet** – the solution lies in a mix of new ideas and different approaches. Some are available now and other will evolve over a period of years.

First principle is **build on our strengths and past successes.** The industry and communities in British Columbia have demonstrated the ability to adapt to change. For instance, in the last 20 years we have seen log size at the millgate decrease by 30%, while lumber recovery has improved by more than 30%. Cost minimization technologies over the past 30 years have enabled our interior mills to continue to maintain their global position as low-cost procedures.

The development of Engineered Wood Products and systems permits the use of lower quality fibre, while maintaining or improving structural performance.

The growth of OSB was the direct result of trying to extract value from a weed species, aspen. Today, we are seeing aspen used for LVL and high-quality appearance products, such as flooring and furniture.

Important to recognize that three factors underpin these successes, namely, knowledge, innovation and technology.

Second principle: Take a value chain approach. No single element of the forest sector value chain is exempt from the MPB epidemic. Using a value chain approach, we can add value by adding knowledge, innovation and technology at each step or link in the value chain. This will allow us to order to reduce costs and recover more value in the products produced and marketed. Note that if the delivered cost of beetle-killed fibre is too high, adding value further along the chain will have little impact.

Third principle: Focus on the marketplace and customer acceptance. Identify the attribute desired by the customer and match them to the quality characteristics of the fibre and resulting product.

Opportunities to increase production

In the past, industry has harvested and milled various quantities of beetle-infested lodgepole pine. The material has generally been harvested in the green or red attack stage (up to two years old). Today we have some mills in the impacted area that are processing over 50% “freshly attacked” wood. Most of it is of good quality, namely, not dried out and checked.

Forintek, with the assistance of FII, recently evaluated the properties of lumber with beetle-transmitted bluestain. We have shown that bluestain has no practical effect on the structural properties of lodgepole pine. We have produced a Fact Sheet that has been translated into Japanese.

That hasn’t satisfied some customers who reject the product from an appearance perspective, i.e. J-grade in Japan. Home Depot has recently placed restrictions on the percentage of blue-stained dimension lumber that they are willing to accept.

Consumers and builders often think any stain on wood is mold. Mold is being called “the new asbestos” and public hysteria is increasing, due to media interest plus lawyers and restoration consultants with a vested interest. Forintek has been helping to educate the public about the harmless nature of wood discolorations, including bluestain. In particular, we’ve produced this fact sheet together with UBC’s School of Occupational and Environmental Hygiene.

A strong environmental case can be made around beetle-killed lumber. Think about it – It was cut from a dead tree which was not left to decay and release all that carbon dioxide into the atmosphere. It does present some interesting marketing opportunities.

Some sawmills have had experience in processing trees at the gray attack stage (dead more than two years). The logs are costlier to process. They are dried and checked, and that results in more energy consumption in breakdown and shorter or narrower boards. Lumber and grade recoveries are also lower. Greater downtime is also an issue, dry logs are brittle and will crack and fall apart during handling, transportation and processing in the mill. These companies reported processing up to 4% dead wood. Moving up to 60% pine, as some have suggested, will pose a major challenge to sawmillers.

The growing oversupply of wood fibre globally is a further complication. It is not the best time to increase commodity production. In North America, there are demand limitations for commodity lumber products and higher volumes would simply drive down prices and have obvious repercussions for our trading relationship with the US.

One solution to the commodity lumber oversupply is to grow demand – Grow the wood construction market in North America, particularly in non-residential and multi-family hybrid construction. The current missed opportunity in the non-residential construction market in the US is equal to 4.4 billion board feet in lumber and 3.5 billion square feet in structural panel.

Premier Campbell has publicly announced that wood would play a prominent role in the 2010 Olympics, provided there is a cost benefit to wood, or at least no penalty. The Olympic construction program offers opportunities for a wide range of wood and wood-component hybrid structures – from multi-family housing units and associated commercial buildings to showcases for dramatic wood buildings, such as ice arenas, new Nordic and Sliding installations at Whistler, an expansion of the Vancouver Convention Centre and a new Convention Centre in Richmond. These long-span, large structures are an opportunity to resolve issues in structural performance, connections and life safety code compliance.

The Olympics provide British Columbia with a linchpin to mount an aggressive North American initiative that would significantly grow new markets and new applications for wood construction.

The Province, through FII, is identifying and developing new market opportunities in our existing wood construction markets, such as North America and Japan, as well as investing in emerging markets like China, Taiwan and Korea.

Whether it is defending existing markets from steel or concrete or growing market share in existing markets or developing emerging markets, all require a multi-faceted approach, one which is built on partnerships involving industry, government, research institutions and communities. It also has to be a balanced strategy which includes knowledge of the market place, promotion and advocacy, applied research around wood product and systems performance, regulatory support and. most important, a concerted and aggressive marketing effort from industry.

Alternative products and applications

OSB may be another opportunity for beetle-killed wood. In Canada, OSB is generally associated with aspen, a cheap and plentiful resource. However, the US and EW both produce OSB from pine. Compared to aspen, beetle-killed wood would likely result in lower strand quality and a

higher proportion of fines. Further research would be needed. An OSB plant with a capacity of about 600,000 MSF 3/8" would consume approximately 100,000m^3 of wood per year. Ainsworth's OSB plant at 100 Mile is processing some pine.

Biofuels

Fuel wood and charcoal provide more than 14% of the world's total primary energy. Wood is the dominant energy source for more than 2 billion people, particularly in developing countries. According to FAO, 60% of the global wood harvest is used as fuel.

Wood fibre sequesters and stores CO_2 and is renewable, as opposed to fossil fuels.

In developed countries, steam and electricity production from wood is done at several plants on various scales. There is growing interest in wood as a substitute for fossil fuel. For example, in Ashland, Maine, a wood plant burns 400,000 tons per year and generates 40 megawatts of electricity – enough for 30,000 – 40,000 residential customers. The plant is responsible for $10 million in economic activity in the Ashland area. That's slightly smaller generating capacity than the Fort Nelson gas-fired plant and is slightly larger capacity than the Seaton Dam generation station near Lilloet.

It is noteworthy that conversion from oil- or gas-fired generation to wood-fired generation is relatively straightforward.

Ethanol-methanol production

There is considerable knowledge about how to convert wood fibre to alcohol. However, there are as yet no full-scale biomass to ethanol plants operating anywhere.

Conversion from wood is more complex than from other sources of biomass, such as corn or molasses. It requires hydrolysis of cellulose into sugars and then fermentation of the sugars to ethanol – a rather costly process that requires a large capital plant investment.

A big issue here would be security and length of supply.

New niche markets

Realistically, niche markets are not large-volume solutions, but they are certainly part of the answer. And as I indicated earlier, the approach has to be multi-faceted. For example, opportunities for character wide board flooring in China and Japan.

Log Homes are a major export product from Canada. Standing dead timber is pre-seasoned, dimensionally stable and ideal for log homes. – Low capital investment and high value. A booming market in Japan. You can profile the bluestain of the logs or make it a feature.

So far, we have a number of small companies with fragmented marketing efforts. There is potential for global market growth, e.g. Taiwan, Korea and China, for recreational venues. What about log buildings for Whistler in 2010? Communities could consider banding together to expand export marketing efforts.

My last example has a strong social dimension to it – Prefabricated homes to developing countries for disaster relief. BC has a viable prefab home industry. We have the technology to build termite and rot resistance into these homes. These kinds of initiatives do not require huge or long-term capital investment. These are just some examples. Others will evolve as we move forward.

Conclusions

As I said at the beginning of my presentation, I don't believe there is a silver bullet that will resolve this enormous problem.

However, we can make considerable progress to regain the value lost from the Mountain Pine Beetle epidemic by taking a series of little steps, e.g. employing a multi-faceted approach. In my presentation, I've tried to outline some of the major challenges ahead of us, like processing and utilizing older stands of beetle-killed timber, as well as how we expand existing markets and develop new opportunities. The key to success is through a "value chain approach", with a focus on partnering. Communities with the support of government, local industry and other stakeholders can play a key role in this regard. We have enormous experience in British

Columbia in working with wood, building with wood and living with wood. We can move forward by adding new knowledge, technology and innovation.