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about Canadian pulp,
paper, and wood

the bio-industrial potential of Canada's forests

As concern about their environmental footprint grows, consumers want to know they are making informed buying choices, and living in a way that puts less pressure on the Earth.

Canada's forest sector makes sure its wood, pulp and paper products are the result of responsible forest and production practices. Harvested areas are regenerated, and Canada's tough forest regulations met. Companies welcome outside scrutiny of practices, participate in recovery and recycling, and promote carbon neutrality across the value chain. Buyers can be confident that today's quality products from Canada won't come at the expense of tomorrow's forests.

Looking for suppliers who commit to and deliver on the following principles is an easy and effective way to choose responsible wood, pulp and paper products.

transforming Canada's forestry sector

Canada's abundant forest resource, combined with its leadership in sustainable forest management and product research, places it in a unique position to become a leader in the 21st Century bio-economy. Canadian researchers are developing technological innovations to use wood fibre – including biomass such as harvesting and sawmill residues – to produce clean, renewable energy and fuel, as well as innovative bio-chemicals and bio-materials.



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mapping transformational pathways

In 2010, the Forest Products Association of Canada identified the best opportunities for bio technologies through its Future Bio-pathways Project. More than 65 top Canadian experts, in fields as diverse as biotechnology, investment banking and carbon pricing, analyzed 16 traditional and 16 emerging bio-industries to assess how forest fibre could be substituted for fossil fuel.

This level of analysis has never been undertaken anywhere in the world. Researchers investigated each existing forest product and new technology by region, the size of the operation and the business cycle to determine which leads to the lowest carbon footprint, offers the best return on investment and generates the most jobs.

The project resulted in a framework for decision-making and interactive tools so companies can identify the best prospects to meet the global demand for clean energy and bio-products.



By combining the forest industry's existing strengths and environmental leadership with scientific breakthroughs, Canada can reduce its greenhouse gas emissions and strengthen its economy while meeting the growing global demand for clean energy and environmentally friendly products.

Canadian researchers are seeking ways to improve the quality and recovered quantity of forest biomass, and finding ways to convert it into energy. For example, gasification (a thermochemical process) is the quickest way to convert biomass into a gaseous fuel for equipment that cannot burn solids.



clean, renewable energy

Scientists agree that climate change is largely due to increasing emissions of greenhouse gases, especially carbon dioxide from burning fossil fuels. There was a time when residues from harvesting and sawmills were sent to the landfill or burned – adding to these emissions.

Today, Canada's forest products industry is using this residue to produce clean renewable energy as a sustainable alternative to traditional energy. The pulp and paper industry already meets 68 per cent of its total energy needs with renewable energy – primarily biomass – and aims to increase this to 100 per cent. It has reduced its use of fossil fuels by 38 per cent and improved its greenhouse gas emissions intensity by 73 per cent.

Across Canada, governments and businesses are investigating biomass possibilities such as cellulose-based ethanol, transportation fuels and biochemicals. Fuels made from biomass could potentially replace the carbon-based fuels used in some manufacturing and industrial processes.

Thanks to recent technological innovations, wood fibre/ forest residue has the potential to become a major source of clean energy for society at large, and could meet the energy needs of 2.5 million homes, or one out of every five homes across Canada. When used for energy, forest biomass is considered clean or carbon neutral because it releases no more carbon into the atmosphere than it absorbed during its lifetime. When it replaces fossil fuels, it can actually reduce greenhouse gas emissions.

an integrated industry

Canada's forest industry is integrated for maximum efficiency. Lumber mills produce residues that become a source of fibre for pulp mills and products such as particleboard and medium-density fibreboard. These residues are also used as a source of clean energy in many mills.

Emerging bio-energy and bio products operations perform better and enjoy higher economic returns when they are integrated with traditional industry operations – and this strengthens the traditional operations as well. The Future Bio-pathways project found an integrated mill producing wood, pulp or paper, as well as bioenergy and biomaterials, creates five times as many jobs as a stand-alone bio-operation.

By integrating the production of bio-products into existing forestry operations, they will be subject to the same high and increasingly stringent environmental standards that have made Canada a world leader in sustainable forest management. The result is an industry that is efficient and green.

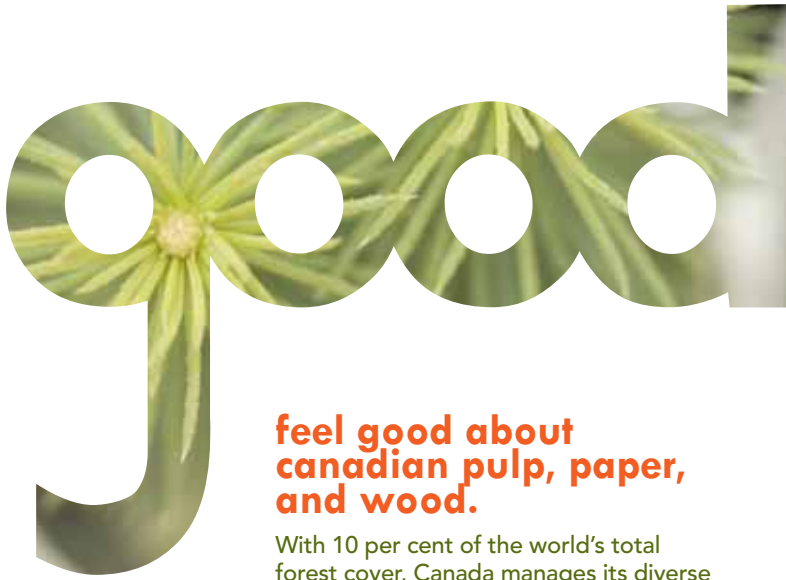
looking to the future

Canada's forest products industry is already a leader in addressing climate change. Companies which have upgraded equipment and implemented leading-edge technology to improve their environmental performance now are looking at ways to transform operations so they can use wood fibre for a variety of innovative bio-fuels, bio-products and bio-materials.

While still in their infancy, there are a number of technologies that hold considerable promise:

- New technologies can transform wood fibre into liquid form so it can be used to produce products such as bio-fuels for home heating or to power vehicles.
- Bio chemicals can be used to make cosmetics, solvents, food additives and renewable plastics. There is even the possibility of creating innovative bio-materials such as 'intelligent' paper and engineered wood products, or modifying paper characteristics such as opacity, transparency, printability, water permeability and colourfastness.
- Lignin from black liquor, a byproduct of kraft pulping, may prove to be a good substitute for resins in wood panels and for carbon black in tires. Hemicellulose, another pulp residue, can be extracted and used in applications such as fermentation products and polymers
- Nanotechnology can be used to produce coatings penetrate wood far better than conventional treatments, protecting it against decay, fungus, swelling and shrinking, and making it resistant to cleaning products and high-pressure washers.





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With 10 per cent of the world's total forest cover, Canada manages its diverse lands and produces quality forest products in a way that meets the highest environmental standards.

Choosing wood products from Canada means using an environmentally sustainable product that is better for the environment than steel, plastic or concrete. Choosing pulp and paper from Canada means using products from one of the most environmentally responsible sources in the world.

Canada's forest products industry is poised to continue to contribute significantly to the greening of society. The Canadian forest products industry adheres to the following five principles, which are increasingly important to responsible buyers of forest products:

1. Harvest legally.
2. Regenerate harvested lands promptly.
3. Reduce waste, support recovery and recycling.
4. Reduce greenhouse gases and help fight climate change.
5. Welcome independent scrutiny of forest management practices.

To learn more, visit feel-good.ca.



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