FACT SHEET

Brudder Productions

CANADA'S FOREST BIOECONOMY

Forest Bioeconomy Framework for Canada's Vision: "Canada will be a global leader in the use of forest biomass for advanced bioproducts and innovative solutions." — This vision places the forest bioeconomy at the center of Canada's climate change efforts. It stresses forest sector collaboration for sustainable solutions that also contribute to Indigenous reconciliation and rural prosperity.

What is forest biomass and its role in a forest bioeconomy?

Forest biomass includes tree material produced by forest growth. It can be processed into products and services to create a flourishing forest bioeconomy that is based on renewable, sustainably-managed, forest-based resources.

Forest biomass sources include a sustainable wood supply; tree harvesting and manufacturing residues (e.g., chips, bark and sawdust); non-merchantable trees; short-rotation woody crops; and biomass from natural disturbances, such as wildland fire, pests or disease.

Elements of Canada's forest bioeconomy

As part of our Canadian identity and experience, forests are vital to our cultural, spiritual, recreational and economic pursuits. Knowledge and innovation are essential as we work toward a healthy forest bioeconomy generated from:

- traditional forest products such as lumber, pulp and paper
- low-carbon building solutions such as cross-laminated timber
- renewable forest bioenergy for heat and power
- biomaterials and biochemicals such as lignin and nanofibrillated cellulose

Bioproduct future—Biochar

Residual biomass from forest operations can be processed into biochar, a renewable carbon-rich material useful as a soil enrichment. This enables carbon sequestration in nature, and generates values from low-grade forest feedstock.[2]


GIZ Bush Control and Biomass Utilization Project

Bioproduct today—Bioenergy

Bioenergy is a growing segment of today's renewable energy market. Bioenergy products can increase energy sources available to Canada while reducing residual waste. Residual biomass is processed into products such as bioheat in the form of wood chips and wood pellets, as well as biofuels like ethanol or biodiesel.


Wood Pellet Association of Canada

Canada's forests provide a diversity of benefits[1]

Canada's **138 native tree species** have at least 40 known medical or pharmaceutical uses and are used **to produce common materials** such as rayon, cellophane, glue and turpentine (among others).

Building with wood stores tonnes of carbon. Construction grade lumber typically holds about **1 tonne of CO_2e for each m^3 of wood**, and an average Canadian single-family home stores almost **30 tonnes of CO_2e** within its wood-based construction materials.

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What are the benefits for Canada and the world?

Economic growth

As we continue to create innovative, value-added forest-based products, the forestry industry can expand with new investments, higher revenues, new businesses, new supply chains and more jobs. Rural communities will see more opportunities. New technologies will emerge.

The forest bioeconomy is a subset of a global circular bioeconomy, which the World Business Council for Sustainable Development (WBCSD) estimates could generate USD$7.7 trillion in 2030. Estimates by the Boston Consulting Group place Canada's share of this overall bioeconomy at CAD$150-240 billion.

Opportunities for Indigenous communities

Indigenous involvement in forest sustainability and management is growing, with more partnerships between Indigenous Peoples, government and forest-based businesses. Forest bioeconomy projects can support these partnerships by identifying and pursuing new opportunities with Indigenous communities.

National and global priorities

Sustainably produced Canadian bioproducts can address key national and global priorities, including climate change, sustainable resource development, land-use change and biodiversity loss.

Forest-based actions to reduce carbon emissions and capture and store carbon dioxide include:

- land-use conservation to protect and enhance forest carbon sinks
- increased use of wood in construction, including new building materials made from wood, assisted through updating building codes, modularity and prefabrication
- increased use of bioenergy and bioproducts
- innovation in forest management practices and investments in silviculture

While also supporting greater utilization of fibre from harvested trees, Canadian forest bioproducts can provide consumers with products ranging from food additives and textiles to construction materials, auto parts, biomaterials such as bioplastics, biochemicals and biofuels.

Nanofibrillated cellulose (NFC)

NFC is a new biomaterial produced from renewable sustainably-sourced wood fibres. It adds strength, flexibility and durability to a wide range of products—for example, injection molded goods such as a bike seat. It also can reduce an end product's overall carbon footprint.[3]

medium.com/@nanografi *Muhammad Labib Adilah*

Cross-laminated timber (CLT)

CLT, a lightweight and sturdy engineered wood product, offers a significant opportunity to improve environmental performance in construction. In particular, it can replace concrete and steel, building materials with a higher carbon footprint, and lead to a significant reduction in greenhouse gas emissions from buildings.

Michael Elkan Photography

The CCFM are governments working in partnership to ensure Canada remains a world leader in sustainable forest management while supporting a competitive forest sector. Visit www.ccfm.org to learn more.

[1] Natural Resources Canada. *The State of Canada's Forests Annual Report 2022*. Government of Canada. https://doi.org/10.4095/st000007

[2] Natural Resources Canada. (2023, June 28). *Canada Invests $10 Million in State-of-the-art Biorefinery Conversion in Saskatchewan*. Government of Canada. https://www.canada.ca/en/natural-resources-canada/news/2023/06/canada-invests-10-million-in-state-of-the-art-biorefinery-conversion-in-saskatchewan.html

[3] Performance BioFilaments Inc. *Nanofibrillated Cellulose*. https://www.performancebiofilaments.com/en/products