

CORPORATE ISSUE/OPPORTUNITY NOTE

Issue: Forest Fibre Utilization and the Bioeconomy

- B.C.'s forest sector historically and currently harvests timber to produce conventional forest products (e.g. dimensional lumber, primary pulp and paper products) that have relatively small profit margins and therefore need to produce high volumes of products to remain viable.
- These conventional forest products are extremely sensitive to fibre supply costs and market risk. When markets go down and/or fibre supply costs rise, forest sector manufacturing is strongly affected.
- In addition, the volume and quality of fibre available in B.C. is changing as we experience the effects of changes in land use causing land withdrawals from the timber harvesting land base, wildfires, pests and climate change.
- These factors suggest, as noted in B.C.'s economic plan, that it is time to shift from a focus on volume to a focus on manufacturing higher value products (engineered wood and next generation products like wood-based plastics composites and textiles) that provide significantly greater profit margins while at the same time requiring less feedstock (forest fibre) to be viable.

Background:

- B.C. has the highest fibre supply costs in Canada, largely because of terrain. This means that the portion of the tree that is deemed unsuitable for conventional products is underutilized. There is an opportunity to create new markets and products that utilize the full tree harvested.
- The ministry is working on several initiatives in cooperation with internal and external stakeholders to improve the access to and use of B.C.'s wood biomass (e.g. Coast Forest Revitalization, Interior Forest Renewal and CleanBC).
- Within these initiatives is nested the foundational concept of a forest bioeconomy. In the forest bioeconomy, building on the existing supply chains and strong conventional product know how, one adds on new high value products like bioplastics (wood-based plastics) and new building products like biomass-based (wood based) foam insulation for buildings.
- Next generation forest products such as biomaterials, biochemicals and some engineered wood products provide opportunities for high-value products that do not require saw-log grade material for feedstock but rather uses the parts of a harvested tree that currently is not used.
- Jurisdictions in northern Europe have relied on a forest bioeconomy to transform their forestry sectors to be more globally competitive while maximizing the economic benefits for their jurisdictions.
- This work connects strongly to the growing interest in finding natural solutions for climate change and the economy.

Issue/Opportunity:

- This note outlines some key information about how a bioeconomy approach can maximize the economic, social and environmental value of forests in a way that is less susceptible to fibre supply costs.

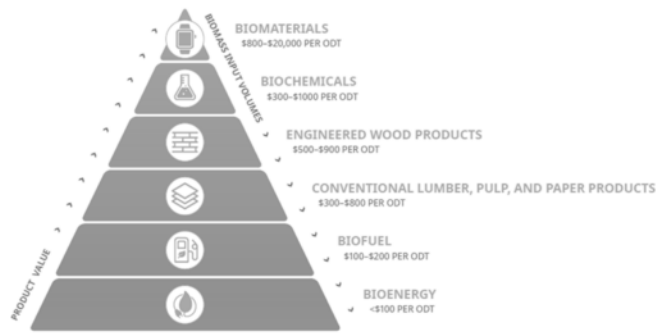


Figure 1: Bioeconomy economic- value pyramid as a representation of product value per unit of feedstock measured in oven dried tonnes (odt)

- Referring to figure 1, forest bioproducts at the top of the pyramid provide more economic value than those on the bottom. In addition, the top 3 bioproduct categories do not require significant volumes of fiber to be economically viable. Market analysis indicates there is significant growth potential for these products, so they are not limited to small-scale production. They can also be scale-able to numerous locations across the province and can enhance fibre utilization across B.C.

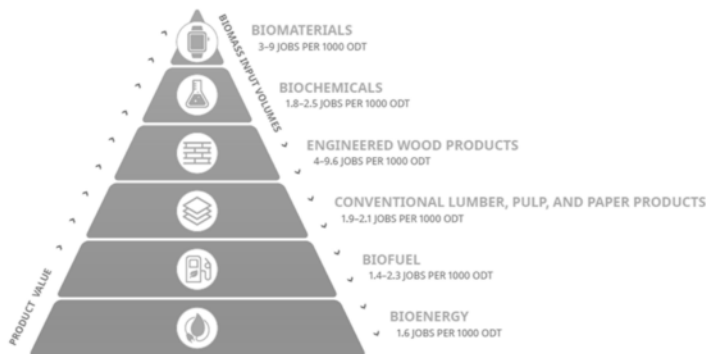


Figure 2: Bioeconomy social-value pyramid as a representation of job creation potential per unit of feedstock measured in odt

- Figure 2 represents social value in terms of job potential per unit of forest fiber feedstock. Moving to the top of the pyramid provides more jobs per unit of feedstock.
- Due to their high economic value and social value products towards the top of the pyramids are not as sensitive to fibre supply costs options on the bottom.
- The Office of the Chief Forester (Innovation, Bioeconomy and Indigenous Opportunities Branch) of the ministry is working across ministries, with First Nations, academia, the Federal government and industry partners realize bioeconomy development options.
- There is an opportunity to establish a program in B.C. to support commercialization of these high-value opportunities to maximize the long-term sustainability and competitiveness of the forest sector.
- There is complimentary work to be done to ensure that more of the tree is used and that that the right component of the 'tree' gets to the right product.
- Over time, we can support fibre use choices that align with a portfolio of next-generation forest products. This more holistic approach will add high value bio-products to our existing more volume dependent products.
- The bioeconomy results in wasting less, harvesting less, emitting less GHGs from burning slash, storing more carbon in wood products, displacing less favorable products and realizing more economic value from the fibre we harvest.

BRIEFING NOTE

Meeting with FPInnovations (FPI)

FPInnovations Board Members:	
Stephane Renou	President and CEO, FPI
Francois D'Amours	Kruger
Kevin Edgson	EACOM Timber Corp
Bruce Mayer	Government of Alberta, Alberta Agriculture and Forestry
Kathleen McFadden	Government of Ontario, Ministry of Natural Resources & Forestry
Diane Nicholls	Government of B.C., Ministry of Forests, Lands Natural Resource Operations & Rural Development
Derek Nighbor	Forest Products Association of Canada
Charles Tardif	Maibec
David Ure	Mercer International
James Gorman	West Fraser
Luke Drapeau	Canfor Corporation

FPInnovations Background:

- FPInnovations (FPI) is a private not-for-profit research and development organization that specializes in the creation of solutions that accelerate the growth of the Canadian forest sector and its affiliated industries to enhance their global competitiveness. FPI spans the pulp and paper industry, forest operations, wood products, and bio-sourced products with members from 180 companies.
- FPI employs over 400 specialists throughout Canada and its headquarter is located in Pointe-Claire, Quebec. It has 3 main research centres located in Vancouver, Quebec City and Pointe-Claire, as well as regional offices across Canada.

Issues:

FLNRORD investment to FPI Research Program

- FLNRORD invests \$2.2 million annually through a Shared Cost Arrangement (SCA) in FPI's research. The investment is matched with federal and/ or industry contributions.
- FLNRORD has worked towards implementation of the 2017 FLNRORD "Innovation Strategy" that guides the BC focused innovation research. All programs/projects are required to support at least one of three strategic pillars of the Innovation Strategy: Enhance Economic Viability, Improve Environmental Sustainability, and Provide Indigenous Technical Support.

BRIEFING NOTE

- Over the past 4 years FLNR has supported 55 research projects. The majority (67%) of this investment supported projects under the Economic Viability pillar, 13% of the investment supported projects under Environment Sustainability pillar and 20% of the investment was allocated to provide Indigenous Technical Support.
- The research projects under the Enhance Economic Viability pillar aim to demonstrate the viability of new products and clean technologies to enhance forest resource utilization, increase product value and diversify products and market opportunities.
- The research projects under the Improve Environmental Sustainability target to develop processes, tools, and technologies to capture the carbon value of forest products and enhance sustainable resource management.
- The Indigenous Technical Support projects strengthen capacity and skills in Indigenous communities and support value-added opportunities for small and medium enterprises.

Recent Government Engagement

- The Ministry engages with FPI regularly on a project-by-project basis and through the FLNRORD Innovation Working Group (IWG), a strategic internal group composed of ministry executives, directors, managers, research leads, and economists from the key business areas across the Ministry, meet on a quarterly basis to inform, guide and monitor FPI's research programs and ensure these programs align with the three strategic pillars.
- The FLNRORD IWG are currently engaging with FPI to discuss and determine the 2021/2022 research programs.
- ADM and chief Forester is a FPI Board Member

Key Messages:

- FLNRORD's collaborative Innovation program with FPI is a foundational platform for enhancing the competitiveness of B.C.'s forest sector and transitioning the sector from high volume production to high value production.
- FLNRORD's relationship with FPI enables the Ministry to leverage expertise at FPI and investment from Industry and the federal government to advance our provincial innovation objectives as highlighted in the Innovation Strategy.
- FLNRORD looks forward to further collaboration with FPI and advancing our common objectives

Attachment A. 2020-2021 FPI Research Program Overview (2020-21 Projects, Target and Deliverables)

Re: LCA for mass timber

From: Nicholls, Diane R FLNR:EX <Diane.Nicholls@gov.bc.ca>
To: McKenzie, Leith FLNR:EX <Leith.McKenzie@gov.bc.ca>
Sent: February 26, 2021 at 1:55:05 PM Pacific Standard Time

Monday can you contact Werner at CFS and see if he has done work?

Sent from my iPhone

On Feb 26, 2021, at 1:31 PM, McKenzie, Leith FLNR:EX <Leith.McKenzie@gov.bc.ca> wrote:

Hi Diane,

We have not done any specific work on LCA of mass timber but there is some information available;

Forest Innovation Investment- <https://www.bcfii.ca/investment-funding/mass-timber-demonstration-program>

FP Innovation- <https://library.fpinnovations.ca/en/permalink/fpipub42951>

Federal government. <https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/forest-industry-trade/forest-products-applications/greening-our-built-environments-wood/16834>

Canadian Wood Council <https://cwc.ca/why-build-with-wood/sustainable/green/life-cycle-assessment/>

Mass Timber Institute <https://www.masstimberinstitute.ca/about-mass-timber>

I asked both Garrett and James for input and James pointed me to FII. Garrett thinks Caren may know more but she is off today.

Let me know if you want me to dig into this further.

Leith

-----Original Message-----

From: Nicholls, Diane R FLNR:EX <Diane.Nicholls@gov.bc.ca>

Sent: February 26, 2021 11:29 AM

To: McKenzie, Leith FLNR:EX <Leith.McKenzie@gov.bc.ca>

Subject: LCA for mass timber

Do we have this information? If so please send to me - if not does Werner Kurtz? ^{s.13}

s.13

Diane

Sent from my iPhone