

BC Coastal Hem-Fir Initiative – 2012/13

Project Title	Concept Building – Integrating Future Bio-Products
Project Number	B.06
Project Leader	Gail Sherson
Project Team	Andrew Goodison, Erol Karacabeyli, Tom Browne, Tim Caldecott, Gilles Brunette
Total Budget	\$95,000

Need(s)

The FPAC bio-pathways initiative has demonstrated how Canada can take a leadership role in developing innovative new bio-products for the world market, estimated to be worth \$200 billion/y by 2015. The emerging forest sector will encompass technologies and processes for the manufacture of bioenergy, biofuels and high value biochemical, biomaterials and products. Opportunities exist for substituting products from non-renewable materials such as oil-based plastics, with bio-chemicals and sustainable, recyclable, and biodegradable fibre-based products (e.g. bio-based materials and composites, foam, insulation material, etc.).

BC's pulp and paper sector is well positioned to lead the establishment of a green bio-products industry in the province by drawing on BC's world class forests, skilled workers, and innovative technologies. However there is a need to identify specific products, markets and applications for BC's emerging bio-products sector. For example in Ontario, forest bio-products developments are targeting automotive supply chains and green chemicals. BC has a strong wood products manufacturing sector which is moving into higher value building systems, such as those utilizing Cross Laminated Timbers (CLT). New bio-materials present an opportunity to move even further into advanced building systems by incorporating new advanced biomaterials into future building systems (both structural and non-structural elements).

There is also a need to rebrand BC's forest sector as an exciting new "sunrise industry" in order to attract BC's brightest young people back to the sector, to change public opinion about the sector, and attract investment and partnerships from outside the sector. A "concept building" is one way to provide a vision for industry transformation and rebranding.

Objectives & Approach

- Assemble information on emerging forest-based bio-chemicals and bio-materials that show potential for incorporation into buildings of the future. Examples include materials for multi-attribute panels, plastic replacements, interior materials and finishes, exterior materials and finishes, applications of nano-crystalline cellulose (NCC) in structural materials, textiles, carpets, glass with unique properties, etc.
- Leverage market information from the current FPAC/FPIInnovations project "Construction Value Pathways" including participation in a planned FPAC workshop on biochemicals/plastics/materials and the construction pathways
- Conduct a brainstorming workshop to develop first draft of a concept building for the future and to define the scope of a concept building design contest

- Initiate a design contest to engage and challenge academic and design professionals to design a concept building for the future, incorporating bio-based materials
- Seek ways to profile the concept building at the planned new Wood Innovation and Design Centre in Prince George (e.g. display designs and prototype materials)
- Integrate findings into BC's Bio-Products strategy and identify some best bets for BC for further development

Benefits

- In the longer term, incorporation of biomaterial into advanced building systems will move BC's forest sector into higher value products that improve industry competitiveness, at the same time creating jobs, enhancing community stability and contributing to substantially.
- A vision for leveraging BC's strengths in both the building materials and pulp and paper sectors, to take a leadership role in the emerging bioeconomy, will help attract BC's brightest young people to the sector, to change public opinion about the sector, and attract investment and partnerships from outside the sector.

Project Tasks and Outputs – Current fiscal year

Tasks / Outputs	Expected Delivery Date
Assemble information on emerging forest-based bio-chemicals and bio-materials showing potential for buildings of the future.	July 2012
Structure a contest to design a concept building for the future	October 2012
Incorporate market information from the current FPAC/FPIInnovations project "Construction Value Pathways"	December 2012
Integrate findings into BC's Bio-Products strategy and identify some best bets for BC for further development.	March 2013
Report on the concept building and best-bet bio-products for incorporation into building systems	March 2013

Performance Measures

Key Success Factor	Key Performance Indicator	Target	How the outcome of the Project supports the Program objectives
Apply the Concept Building as a tool for rebranding the forest sector	Design contest scope and partners defined	Framework by October 2012	Rebranding BC's forest sector as an exciting new "sunrise industry".
Best-bets identified for BC	Bioproducts identified for incorporation into future building systems	5 bioproducts	Move BC's forest sector into higher value products that improve industry competitiveness

Communication Strategy for Information Dissemination

Results will be shared in presentation format with industry and ministry contacts, at the semi-annual Steering Committee meetings and appropriate industry and public forums. Additional publicity means will be identified and applied for the promotion of the design contest and communicating the contest outcomes.

Collaboration – Research Partners

Collaboration with Universities and other groups (such as industry groups and associations) will be sought to design and carry out a Concept Building Design Contest.