

Written Submission for the Pre-Budget Consultations in Advance of the Upcoming Federal
Budget

By: FPIInnovations

Recommendations

Recommendation 1: That the government provide funding of \$10M/year for 5 years to scale-up the strategic “made in Canada” value chain products that are bio-sourced and that represent the vision of the CCFM Forest Bioeconomy Strategy.

Recommendation 2: That the government adopt a policy for the public procurement of sustainably sourced, bio-based products from strategic Canadian supplies.

FPIInnovations – Supporting a Forest Bioeconomy Strategy

COVID-19 exposed vulnerabilities within the supply chains of strategically important supplies needed in Canada, as well as the dependence on products derived from petro-chemical polymers. Canada has sustainable forests, robust forest sector supply chains and export-oriented production capacities. The forest supply chains can offer the domestic supply of products of strategic importance to Canadians, while substituting off-shore or non-sustainable supplies, such as single-use plastics, firm energy and low-carbon intensity products.

Background and Overview

FPIInnovations is a private not-for-profit organization that specializes in the creation of solutions in support of the Canadian forest sector's global competitiveness. We are ideally positioned to perform state-of-the-art research, develop advanced technologies and deliver innovative solutions to complex problems for every area of the sector's value chain, from forest operations to consumer and industrial products.

We wish to thank Natural Resources Canada for providing a three-year funding for the renewal of the Transformative Technologies program in the 2019 budget. We are also thankful for the contribution towards bio-based PPE development during the COVID-19 situation. These funds have been instrumental in the development of critical PPE from sustainable domestic supplies and in supporting the evolution and rejuvenation of the FPIInnovations business model to support the forest sector's response to the health crisis and economic competitiveness in communities across Canada.

Recommendations

The bioeconomy has the potential to be the critical source of supply for Canada because the supply chain originates here. However, there is a need to stimulate the creation of domestic bio-based product supply chains by creating a market pull and ensuring domestic production. To this effect, FPIInnovations believes that two simultaneous efforts are required to fully realize the potential of the bioeconomy in Canada:

- 1) Strategic selection of the specific bio-based supply chains to develop
- 2) Kick-start bio-economy development through government procurement that establishes a domestic market preference for bio-based products

The following recommendations are critical for mobilizing these two efforts and achieving a robust bioeconomy in Canada.

Recommendation 1: That the government provide funding of \$10M/year for 5 years to scale-up the strategic “made in Canada” value chain products that are bio-sourced and that represent the vision of the CCFM Forest Bioeconomy Strategy.

Canada's forests are a valuable, strategic domestic natural resource. Supplying Canadian forest fibres into non-traditional sectors represents an opportunity for both domestic supply security and for significant growth in the emerging green economy in Canada. FPIInnovations believes in a forest sector that provides sustainable, bio-sourced materials to other industrial sectors moving strategically towards lower carbon products and production. However, like other products or process transitions, even when the inclusion of forest fibres is advantageous in securing domestic supply or lowering a product's carbon impact, substantial applied innovation is required to support the co-development, adaptation and commercialization between forest sector and adopting industry players.

As an RTO (research technology organization), FPIInnovations is well positioned to meet this challenge and pull together traditional forest sector operators with those industries that are seeking to enhance their domestic supply certainty and reduce their carbon footprint. Even if FPIInnovations is not obliged to focus exclusively on education, knowledge or profit, it is fully dedicated to deliver commercial value. This unique position enhances the innovation performance of all its partners who value collaboration and end-user needs.

FPIInnovations suggests that this recommendation operationalize in agile management style to focus the effort and allow rapid decision making. A different management style is required to accelerate the speed to the market while structuring teams to deliver in the long run.

We have used this approach in the development of the filtration media from domestically sourced cellulose fibres as a response to COVID-19. The end goal of this "sprint" was to verify the technical performance of cellulose fibres and paper/towel production in Canada to supply low-cost, strategic supply of a media suitable for facemasks. Running simultaneous to this development was a focus on bio-safe packaging for PPE. Both programs yielded promising results, resulting in a collaboration with a converter to produce facemasks with an internal layer of filtration provided by cellulose fibres.

This approach enables to define the relevant project's next phase rapidly. In the case of the mask project, the next phase will focus on developing the two external layers of each mask from cellulose fibres – thereby making a 100% cellulose-based mask that is biodegradable and produced entirely in Canada. This would also represent one of the first bio-based facemasks in production across the globe.

With a 10M\$/year program, FPIInnovations proposes to apply the same methodology and goals that guided the Canadian fibre facemask project with an emphasis on:

- **Sustainable domestic supply chains**
- **Commercialization of a bio-based products vs fossil-based incumbents**
- **Made-in-Canada with Canadian sustainably sourced fibers**

FPIInnovations proposes to develop additional novel supply chain bioeconomy opportunities using sustainable fibres from Canada.

Potential bioeconomy product or processing opportunities could include but are not limited to:

- 1) Bioplastics: bio-based, fully compostable or recyclable from sustainable sources
- 2) Bio-based heavy construction materials (asphalt, bioconcrete, biocomposites)
- 3) Moving fibres closer to non-traditional industrial users (oil, cement, steel, lime kilns)
- 4) Expand the bio-based product supply chains for regions and communities

FPIInnovations is “private sector” driven and can link together partners that do not normally collaborate to generate supply chains for low-carbon economy opportunities (i.e. biomass substituting coal for energy in cement kilns, sawmill chips digested into bioplastic precursors for compostable packaging, etc.).

Further, FPIInnovations has a multitude of experts that can be mobilized rapidly to solve a challenge such as creating filtration media from domestically produced cellulose for facemasks. The impact of having access to a strong and multidisciplinary team is essential towards ensuring the success of a major bio-based project development.

While FPIInnovations initiatives through the TT program focus on commercializing technologies important for the forest sector transformation, these made-in-Canada supply chain developments will focus on the strategic domestic supply of sustainable products.

Recommendation 2: That the government adopt a policy for the public procurement of sustainably sourced, bio-based products from strategic Canadian supplies.

The Canadian government has a strong influence on the supply provided to Canadians and Canadian institutions. In this respect, the Canadian government can specify the procurement of products that complement or support the achievement of its GHG emission reduction targets for 2030. FPIInnovations believes the low-carbon, bio-sourced products supplied from Canadian forests should be preferred for procurement for three reasons:

1. Government procurement of these products provides an early adopter and market for producers which is essential towards lowering the risk of scale-up investments.
2. Supporting the development of a domestic supply of low-carbon products will enable the export of low-carbon technology and products to other jurisdictions targeting low-carbon or net0 emissions.
3. Adoption of these products in Canada supports the Canadian GHG emission reduction targets.

A model for this type of recommended program exists in the United States. *BioPreferred* was created by the United States 2002 Farm Bill and reauthorized and expanded as part of the Agriculture Improvement Act of 2018 (2018 Farm Bill) with the goal of increasing the purchase and use of biobased products. “The purpose of the program is to spur economic development, create new jobs and provide new markets for farm commodities. The increased development, purchase, and use of biobased products reduces our nation's reliance on petroleum, increases the use of renewable agricultural resources, and contributes to reducing adverse environmental

and health impacts.” This program does not provide financial support for its participants but rather provides a degree of **market certainty** for bio-based products that support domestic economic development and de-risk entrepreneurial investment.

A program such as *BioPreferred* in Canada would be a key driver of the post-COVID-19 theme of building back better. Canada is already an internationally recognized supplier of bio-based commodity goods in forestry, agriculture and fisheries. With a domestic procurement agenda supporting value-added bio-based products, Canada would not only support the development of product differentiation but would be able to tap into its knowledge-based resources to address new market opportunities for products sustainably grown in Canada.

This type of program in Canada would blend well with other certification or labelling programs already underway in Canada such as LCA, LEED, certified forests and Certified Organic. FPIInnovations believes the industrial sector will rise to meet this challenge once the procurement requirements are identified.

The success of this recommended domestic procurement program also presents strategic opportunity for Canada to identify the value of our sustainable bio-based assets such as certified forests, low carbon hydro power and mature supply chains. A global competitive advantage for Canadian companies can be fostered by encouraging the growth of domestic bio-based producers to utilize these inherent sustainable advantages presented by Canadian hosting conditions. Companies producing bio-based products that meet the Canadian standard would be marketable internationally and support global supply chains seeking decarbonization.

Conclusion

As Canada looks to build back better in a post-COVID-19 world, innovative strategies that leverage Canada’s natural resources and innovative spirit are critical. Canada’s forestry sector and accompanying supply chains are a great opportunity for Canada to generate economic activity, secure domestic supply chains and leverage its resources. Providing funding of \$10M/year over 5 years to scale-up the “made-in-Canada” value chain products as well as adopting a policy for the public procurement of sustainably sourced, bio-based products from strategic Canadian supplies would achieve this. Canada is in a position to benefit from products made through sustainable forests that contribute to every aspect of daily life.