

Canada Forest Bioeconomy

COMMUNICATE

IMPLEMENT

BioDesign™

canadabiodesign.com



World leading but must continue ...

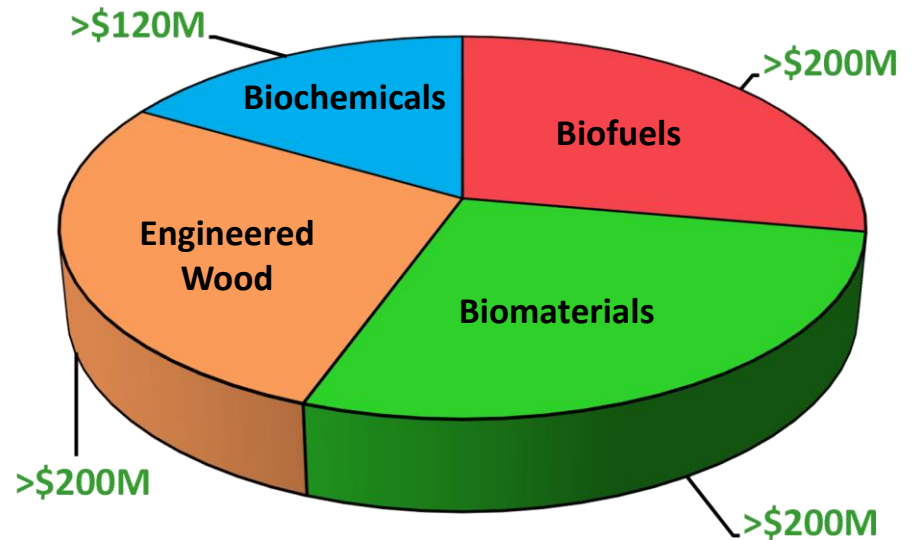
Sector transformation under way

- Clean energy investment at the mills of > \$2 billion
- Bioproducts investment > \$720 million

Challenges ahead

- Access to fibre
- Access to markets

More than \$720M invested since 2012





CRIBE

centre for research & innovation
in the bio-economy

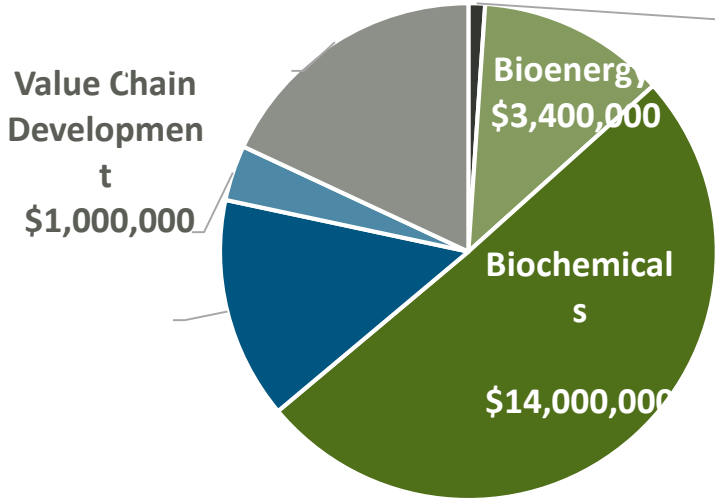
INTENTIONAL COLLABORATION NETWORKS TO ENABLE INNOVATION

Scaling Up

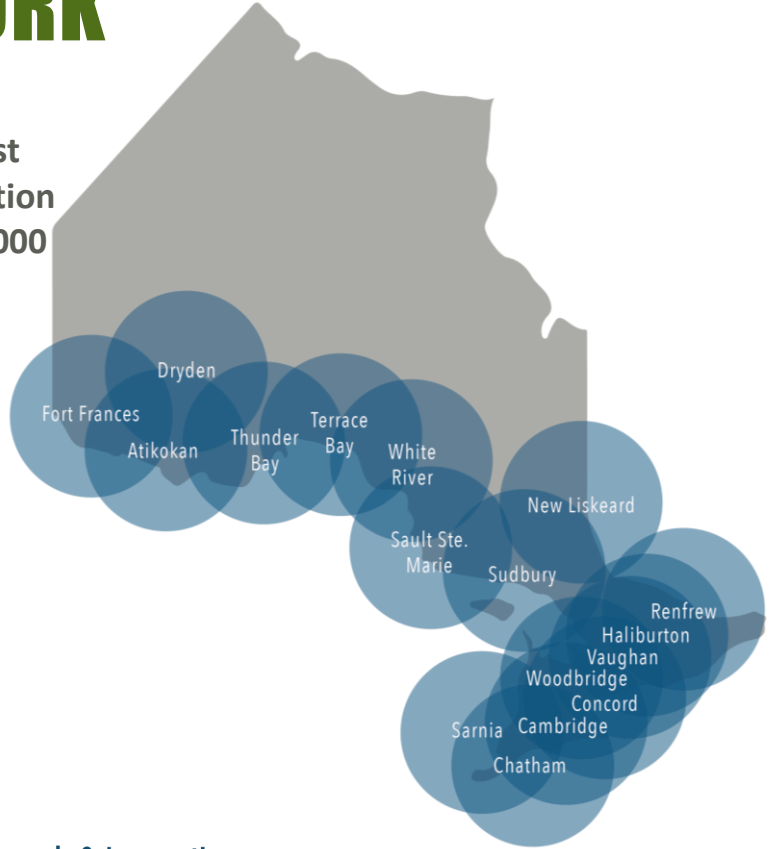
November 6, 2019



OUR INVESTMENTS AT WORK



Forest Innovation
\$300,000



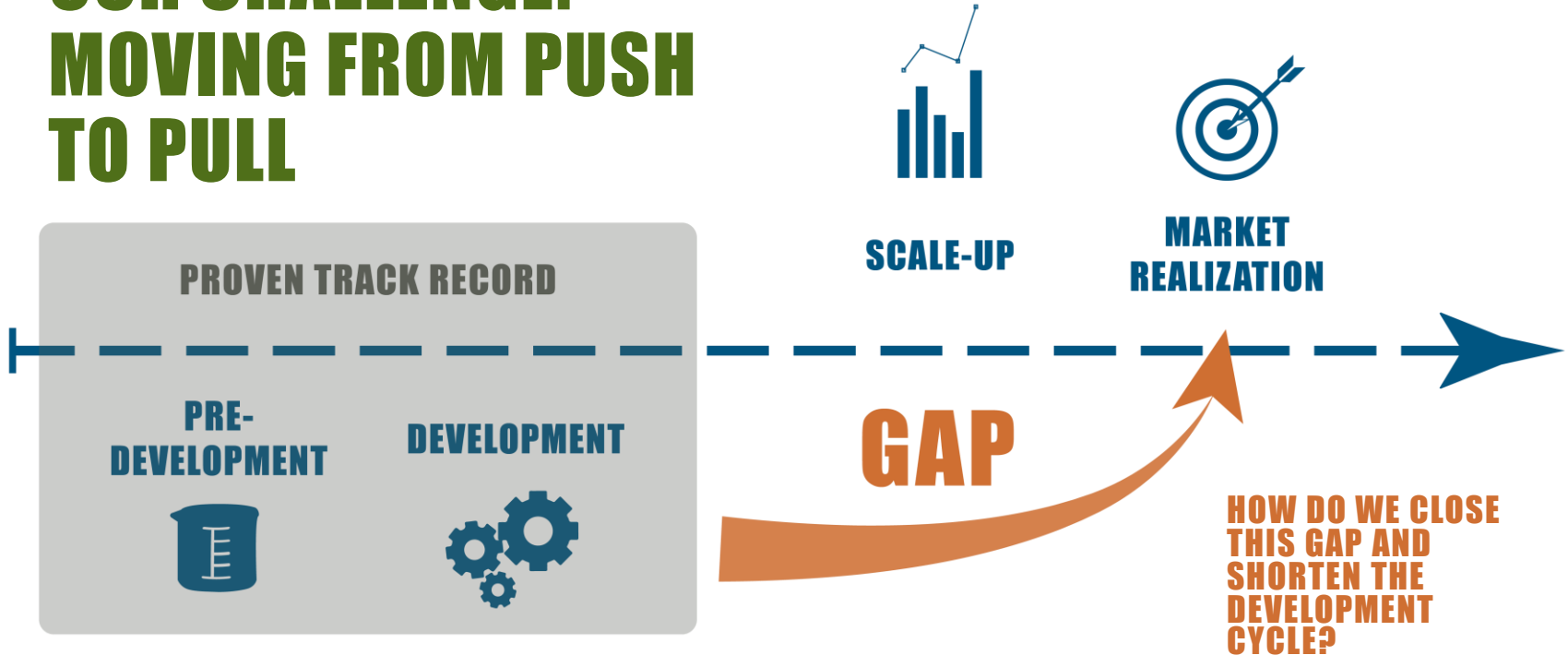
OUR INDUSTRY PARTNERS



HALIBURTON FOREST BIOCHAR
FORGING SUSTAINABLE PATHWAYS



OUR CHALLENGE: MOVING FROM PUSH TO PULL



THE NEED TO CHANGE DIRECTION....

› CRIBE undertook extensive benchmarking nationally & internationally, engaging well over 125 government, research, & industry stakeholders in 2018, including three value chain workshops and three cluster workshops

STAKEHOLDER CONSENSUS = BUSINESS AS USUAL ISN'T WORKING.....

› What we heard....there is a need for:

- › **Information sharing & collaboration** along value chain
- › Improved **understanding of customer needs** across value chain
- › **Targeted interactions** around key issues
- › Support mechanisms to **overcome scaling-up challenges**





nextfor

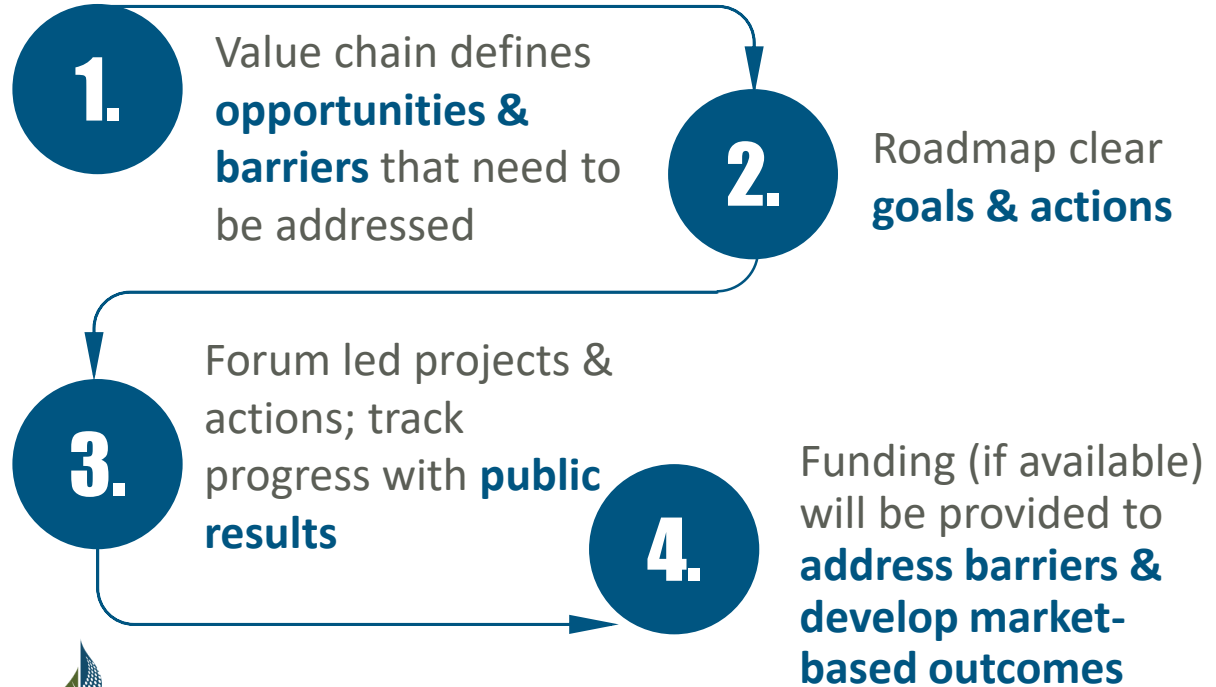
Industry leaders working together to accelerate new technologies & products for Ontario's Forest Bio-Economy.

- › CRIBE launched new Ontario forest-based innovation network
- › The network will consist of a **system of intentional collaboration forums**
- › This **ecosystem of industry leaders** will work together to create roadmaps for product development
- › Funding challenges to support market realization

VISION 2021

- › Players within a value chain are aligned on market development needs & priorities
- › We have established measurable goals & objectives for strengthening bio-economy value chains
- › We have created an environment of intentional collaboration & shared innovation
- › We will support the deployment & financing of technology & projects

VALUE CHAIN COLLABORATION PATH TO 2021



nextfor **COLLABORATION FORUMS**

Given the current state of industry in Ontario, we have identified three target areas for collaboration:

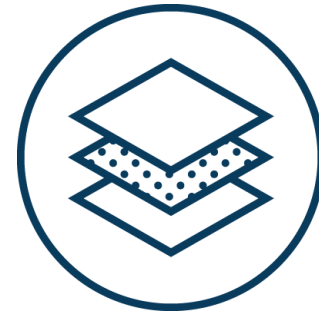
Forest Innovation



High-Performance Lignin-Based Products



Biocomposites



LIGNIN FORUM COLLABORATION



COLLABORATION IS ESSENTIAL!

Creating an effective feedback loop through the value chain is critical – intentional collaboration is a great tool to achieve this!



WHAT'S NEXT?

› **BECOME A PARTNER AT [NEXTFOR.CA](https://nextfor.ca)**

› Inaugural Forest Innovation Forum –
December 3rd

› 4th High Performance Lignin Forum –
December 4th

› Bio-composite Forum Launch Winter
2020

› High Performance Lignin Challenge –
Funding Call Spring 2020

The logo for 'nextfor' features the word 'next' in a dark blue, lowercase sans-serif font, followed by 'for' in a lighter green, lowercase sans-serif font. A large, stylized green arrow shape is positioned to the right of the text, pointing towards the right edge of the slide.

THANK YOU

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CRIBE centre for research & innovation
in the bio-economy



SCALING UP CONFERENCE

THE CRITICAL ACCESS TO MARKETS



NOVEMBER 6, 2019

WHO IS RESOLUTE?



WOOD PRODUCTS	TISSUE	MARKET PULP	PAPER	ENERGY	BIOMATERIALS
					

ACCESS TO MARKETS

Challenges

- Commodity to specialty - a change of mindset
- Non-traditional markets
 - Different industries
 - Different language / KPIs
 - Different manufacturing processes
 - Different standards / regulations / requirements
- Impact of product down the value chain
 - Changes in customer manufacturing process?
 - Lower/different performance?
 - Different marketing strategy?

Opportunities and road map

- Biosourced / renewable / biodegradable solution
- Focus on markets, technology is easier
 - Chicken and egg challenge
- Make product as transparent as possible, or
- Work with the right partner
- Identify the right market / market potential
- Hire the right people to help you learn the language
- Identify cluster / groups that can provide linkage

An aerial photograph of a dense forest of evergreen trees covered in a thick layer of snow. A dark, winding road with white dashed lines curves through the trees on the right side of the image. The overall scene is serene and wintry.

Scaling -up

November 6, 2019

Why Patents are preventing scaling-up of the Bio-economy

- ◇ When I started out with my first company, Zip2, I thought patents were a good thing and worked hard to obtain them. And maybe they were good long ago, but too often these days they serve merely to stifle progress, entrench the positions of giant corporations and enrich those in the legal profession, rather than the actual inventors. After Zip2, when I realized that receiving a patent really just meant that you bought a lottery ticket to a lawsuit, I avoided them whenever possible.
- ◇ At Tesla, however, we felt compelled to create patents out of concern that the big car companies would copy our technology and then use their massive manufacturing, sales and marketing power to overwhelm Tesla. We couldn't have been more wrong. The unfortunate reality is the opposite: electric car programs (or programs for any vehicle that doesn't burn hydrocarbons) at the major manufacturers are small to non-existent, constituting an average of far less than 1% of their total vehicle sales.
- ◇ All Our Patents Belong To You
- ◇ Elon Musk, CEO 12 juin 2014

What should be fixed?

- ◇ Need open base knowledge/innovation to avoid duplication and waste of resources
- ◇ The Fossil Fuel based economy will not give the bio-economy any gifts
 - ◇ Public authority/Governments will have to open some markets including regulations/procurement policies