Partnership and Investment Opportunities in the Canadian Forest Products Industry

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Outline

• Key Take-Aways
• Transformation of the Forest Industry
• Partnership and Investment Opportunities
• Sustainable Canadian Wood-based Feedstocks
• Concluding Remarks
Key Take-Aways
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• The forest industry is transforming - diversifying products and markets
• The forest industry is looking for partners
• Participate in FPAC’s Biopaths Partnership Network
• Canada has a competitive tax regime and government funding programs to incent innovation in Canada
• Canada is a sustainable source of renewable wood-based biomass feedstocks
• Not all biomass is created equally and costs vary
Transformation of the Canadian Forest Industry
FPAC’s 2020 Challenge

2020 Vision “Canada’s Natural Advantage”

“By 2020, the Canadian forest products industry will power Canada’s new economy by being green, innovative and open to the world. It is a place to grow and prosper.”

2020 Stretch Goals:

Products -- Generate an additional $20 billion in economic activity from new innovations and new markets

People -- Renew the workforce with at least 60,000 new recruits including women, Aboriginals and immigrants

Performance -- Deliver a further 35% improvement in sectors environmental footprint
Canadian Leadership

• World’s first crystalline nanocellulose plant
  – Impressive tensile strength – coating for metal alloys
  – Iridescent properties – cosmetics and consumer products
  – Improve viscosity for oil extraction
• World’s first cellulose filament plant
  – Reinforcement additive to packaging, paper, plastics and more
• Major producer of dissolving pulp
  – Textiles – rayon
  – Acetates for flat screen TVs and other applications
• Building with wood - CLT, LVL and other engineered products
• Working on developing other opportunities
Innovative products that can be derived from wood

- Resins & Coatings
- De-icers & Coolants
- Plasticizers
- Lubricants & Solvents
Innovative building materials and methods
Partnership & Investment Opportunities
Brownfield Opportunities

• Existing forest products mills are excellent hosts
  – Renewable energy self-generation
  – Wastewater treatment
  – Skilled labour force
• A number of idled mills suitable for repurposing
• Forest industry operates across Canada
• Advantages
  – Lower capital cost
  – Potential to leverage existing supply chains
• Challenge is to right size to scale of operations & market
IFIT and Other Funding Sources

Stages of Innovation

Basic and Applied R&D
Pilot
Demo to Commercial
Commercial Products

Market Penetration

Technology and Product Development

Investments in Forest Industry Transformation

Atlantic Canada Opportunities Agency
Agence de promotion économique du Canada atlantique

Alberta Innovates Solutions
IQ Investissement Québec
Sustainable Development Technology Canada™
BC hydro
AVAC Ltd., Investing in Innovations
alberta ecotrust
Québec

Ressources naturelles Québec
fpac.ca
Biopathways Partnership Network

• B2B Networking forum for Canadian forest companies and others outside the sector
• Over 300 organizations engaged – 8-fold increase since first meeting in 2011
• 3 meetings per year – no charge to attend
• Visit our website for more details

Upcoming Meetings!
September 8, 2014 – Thunder Bay, Ontario
Fall 2014 – Edmonton, Alberta
Sustainable Canadian Wood-based Feedstocks
Canada’s Forests

Millions of hectares

- **Russia**: 851
- **Brazil**: 565
- **CANADA**: 402
- **US**: 302
- **Sweden**: 30
- **Finland**: 22
- **Germany**: 10
- **United Kingdom**: 2

**Private Landowners**: 425,000

- **Federal Government**: 23%
- **Provincial Government**: 71%
- **Private Landowners**: 6%
Canadian Certification in the Global Context

2013 Year-end

Millions of hectares certified

<table>
<thead>
<tr>
<th>Country</th>
<th>Certified (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANADA</td>
<td>153*</td>
</tr>
<tr>
<td>USA</td>
<td>49</td>
</tr>
<tr>
<td>Russia</td>
<td>40</td>
</tr>
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<td>Sweden</td>
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<tr>
<td>Norway</td>
<td>9</td>
</tr>
<tr>
<td>Brazil</td>
<td>9</td>
</tr>
<tr>
<td>Germany</td>
<td>8</td>
</tr>
</tbody>
</table>

*Double counting of areas certified to more than one standard has been removed from this figure.

Sources:
- www.certificationcanada.org as of Dec 31/13
- www.fsc.org as of Dec 16/13
- www.pefc.org as of Dec 31/13
Building Environmental Credentials

**FPAC Sustainability Commitments**

- Certification (2002)
- Sustainability Initiative (2005)
- Illegal Logging (2006)
- Traceability (2006)
- Conservation Planning (2006)
- Carbon-neutrality (2007)
- Bio-pathways (2010)
- Canadian Boreal Forest Agreement (2010)
Factors Affecting Feedstock Costs

• Freight, freight, freight
• Sustainable Forest Management (SFM) is not cheap
  – Legal requirements and market expectations
• Feedstock characteristics matter
  – Mixed or specific species
  – Level of contamination
  – Unprocessed or processed

• Need to direct fibre to maximum value!
Concluding Remarks
Concluding Remarks

• The opportunities are expanding – the sky is the limit!
• Canada has a competitive tax regime and government funding programs to incent innovation in Canada
• Canada is a world leader in SFM so you can feel good about using our wood-based feedstocks
• The forest industry is the gateway
• Caution: Not all biomass is created equally and costs vary
• Join FPAC’s Biopathways Partnership Network
FPAC: Voice of Canada’s Forest Industry

Canfor Pulp Limited Partnership

fpac.ca