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# Capturing Canada's Natural Advantage

Bio-Refinery Workshop  
November 21, 2005  
Pointe-Claire, QC

# Agenda

- 8:30 Welcome, Introduction and Objectives
  - Joe Wright, Paprican
  - Tom Browne, Paprican
- 9:00 Keynote Speakers
  - Esteban Chornet, Enerkem
  - Adriaan van Heiningen, University of Maine
- 10:30 Break

## Agenda (continued)

- 10:45 Maximizing Value from Renewable Feedstocks
  - Mike Towers, Paprican
  - Yaman Boluk, Alberta Research Council
- 11:45 Outline of Working Group Activities
  - Tom Browne, Paprican
- 12:00 Lunch

## Agenda (continued)

- 13:00 Working Groups: Break-out sessions
- 15:15 Break
- 15:30 Reports from Working Groups
- 16:15 What we Heard
- 16:30 Closing Remarks
- 16:45 Workshop ends



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# **Welcome and Introduction**

Joe Wright, President and CEO,  
Paprican



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## **Objectives**

Tom Browne, Program Manager,  
Sustainability, Paprican

# Technology Roadmap on Bio-Based Feed Stocks, Fuels and Industrial Products

- Industry Canada initiative
  - Promote a shift to alternate industrial feed stocks and processes
  - Identify national research priorities, policy development needs, investment strategies, stewardship activities and outreach activities
- Laid the foundations for today's activity
- Detailed roadmap still needed

# Canadian Forest Innovation Council

- CFIC is:
  - 11-member Council (CEOs, Deputy Ministers)
  - Mandate to mobilize and align R&D resources to overarching agenda
- Goals include:
  - Identify technologies with potential for transforming the sector
  - Extract maximum value from our fibre resource
  - Deliver world class environmental performance and sustainability
- Economic sustainability in P&P: challenge



# Joint Roadmapping exercise: CFIC, IC

- Unprecedented challenges facing Canada's resource industries
- Need information to support sound policies and investment decisions
- Help shape future R&D investments by key decision makers - your presence here today will make a difference
- Help revise a roadmap for the bio-refinery:
  - Pulp and Paper issues (Paprican)
  - Agri-fibre issues (Alberta Research Council)

# Maximize the value of the resource

- In decreasing order of value, for wood:
  - Building materials
  - Market pulp and paper products
  - Feed-stock for chemicals and polymer production
  - Fuels, energy
- For agricultural products:
  - Grains for food
  - Feed for livestock
  - Pulp and paper production
  - Feed-stock for chemicals and polymer production
  - Fuels, energy

# Feedstocks, processes, products

- What combinations make the most sense?
  - Ethanol from wood, from corn, from sugar cane?
  - What about by-products?
- Technical, economic, market evaluation
  - Is the resource available? At what cost?
  - What are the technical barriers?
  - What are the economics when oil is at \$60? \$100?
  - What is the market? Will one mill fill demand?



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## **Keynote Speakers**

Esteban Chornet, Enerkem  
Adriaan van Heiningen,  
University of Maine



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# **Maximizing Value from Renewable Feedstocks**

Mike Towers, Paprican  
Yaman Boluk, Alberta Research Council



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## **Working Groups: Activities**

Tom Browne, Program Manager,  
Sustainability, Paprican

# Working Groups: Objectives

- Explore emerging science and technologies
  - Maximize the value derived from biomass
  - Identify economically sensible pathways/value chains
  - Evaluate technological, economic, social and environmental costs and benefits
- Provide industry with detailed technical information about bio-refineries, so they can:
  - Continue the analysis, conduct due diligence
  - Develop, implement viable commercial ventures

# Working Groups: Activities

- Identify a recorder
  - Use flip chart to record discussion and decisions
- Identify a reporter (may be the recorder)
  - Present working group comments to plenary
- Answer these questions:
  - Highlight key pathways/products; identify barriers
  - Is the road map headed in the right direction?
  - What implications or factors have we missed?
  - Where is the emphasis not right?
  - Are there technologies we haven't evaluated?



# Working Groups: Logistics

- Biomass and Feedstock Issues
  - Mark Ryans, FERIC (Frontenac)
- Fuels, Chemicals and Intermediates from Thermochemical Platforms
  - Mike Towers, Paprican (Ballroom)
- Fuels, Chemicals and Intermediates from Bioconversion Platforms
  - C.J. Li, McGill University (Ballroom)
- Biopolymers and Materials
  - Robert Marchessault, McGill University (Cartier)

# Afternoon Agenda

- 13:00 Working Groups: Break-out sessions
- 15:15 Break
- 15:30 Reports from Working Groups
- 16:15 What We Heard
- 16:30 Closing Remarks
- 16:45 Workshop ends

## What's next

- Revise roadmap based on input today
- Prepare draft document for discussion
- Presentation during a CFIC seminar at PaperWeek
- Final document delivered to CFIC, IC March 31, 2006
  - Recommendations for future R&D activities
  - Guidance for ongoing discussions with stakeholders in government and industry



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**Thank you for your  
time!**