

# Innovation, Science and Technology\* in the rural communities of Eastern Ontario

Real people; real progress

Strategies for the Future; March 1, 2013

\*Technology drives up to 80% of economic growth - Robert Solow won the the 1987 Nobel Prize in Economics for demonstrating this.



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- Growth Scenario : jobs are the major goals
- Strategic Action Plan outline for 2013
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# Strategies for sustainable future

- Secure firm commitments to investment and innovation at national, provincial, private and local levels; the parts are in place
- Facilitate the establishment of a bio industrial related clusters in Eastern Ontario, especially at the Port of Prescott in the Johnstown Industrial Park where all is in readiness
- Achieve tangible support and resources; focus on rural Eastern Ontario economy
- Expand influence with key networks and research initiatives
- Find support for Potential Players such as Renmatix, New Forestry Industries, academics, First Nations, bioprocessing projects in early stages, inventors, greenhouse proponents and others
- Continue to gather and share knowledge and information– in formal and informal networks, at conferences, meetings, seminars, webinars, universities, colleges and in communities
- Create coalitions for real action and produce workable, enhanced natural resources inventory of southern Ontario beginning with Eastern Ontario
- Build key alliances throughout Canada and beyond and
- Never take no for an answer.

# Benefits to Ontario and Canada *Expected*

## *Results*

- **Social**
  - Jobs
  - Sectorial diversification, expertise, know-how
  - Canada globally recognized as a top bioeconomy
- **Economic**
  - Wealth created
  - Profitable businesses
  - More investments attracted
- **Environment**
  - Lower environmental footprint
  - More balanced use of non-renewable and renewable resources

"Your outreach effort, in the form of newsletters and workshops/conferences, have provided both outstanding visibility of the BIC and timely information for those of us working in the bio-based fuels and chemicals sector."

**Bernie Steele**, PhD, Director  
Alliances and Operations, MBI, Lansing, Michigan

# Wood-based Bio-Economy throughout Eastern Ontario

- Over 70 different species of wood: maple, oak, Eastern white pine, birch, basswood, ash, and many more – a valuable resource
- Renewable resources, like forests, not just food, feed and fibre, but energy, chemicals and materials while bringing important environmental benefits
- Forestry industry in Canada – 270,000 jobs; 2% of GDP; in South and Eastern Ontario – 42,000 jobs
- “An integrated mill ... 5 times as many jobs as any stand alone bio-operation” FPAC February 1, 2010
- Processing can increase wood products’ value six fold
- Biochemicals from wood
- 2<sup>nd</sup> and 3<sup>rd</sup> generation biofuels (eg biodiesel for new generation autos)



## Transitioning rural Eastern Ontario communities with a “green” renewable industry

- 2012 labour force in Southern Ontario in forest related/wood products sector – **41,647 jobs now** \*
- “lumber prices have tripled over the past four years” and recruitment campaign for skilled workers is underway - Globe & Mail Feb. 3, 2013
- To form solid wood clusters with the by-products becoming feedstock for Energy and bioprocessing Clusters
- EOMF and FSC certification partners with MNR
- Much of the beautiful hard woods and milled products of Canada come from Renfrew County, Prescott and Russell, Stormont, Dundas & Glengarry, Leeds&Grenville, Lanark County and northern and other parts of Eastern Ontario
- We expect that an improving forest industry and the quality of life in Eastern Ontario will lure new entrants to the labour force

\* <http://www5.statcan.gc.ca/cansim>

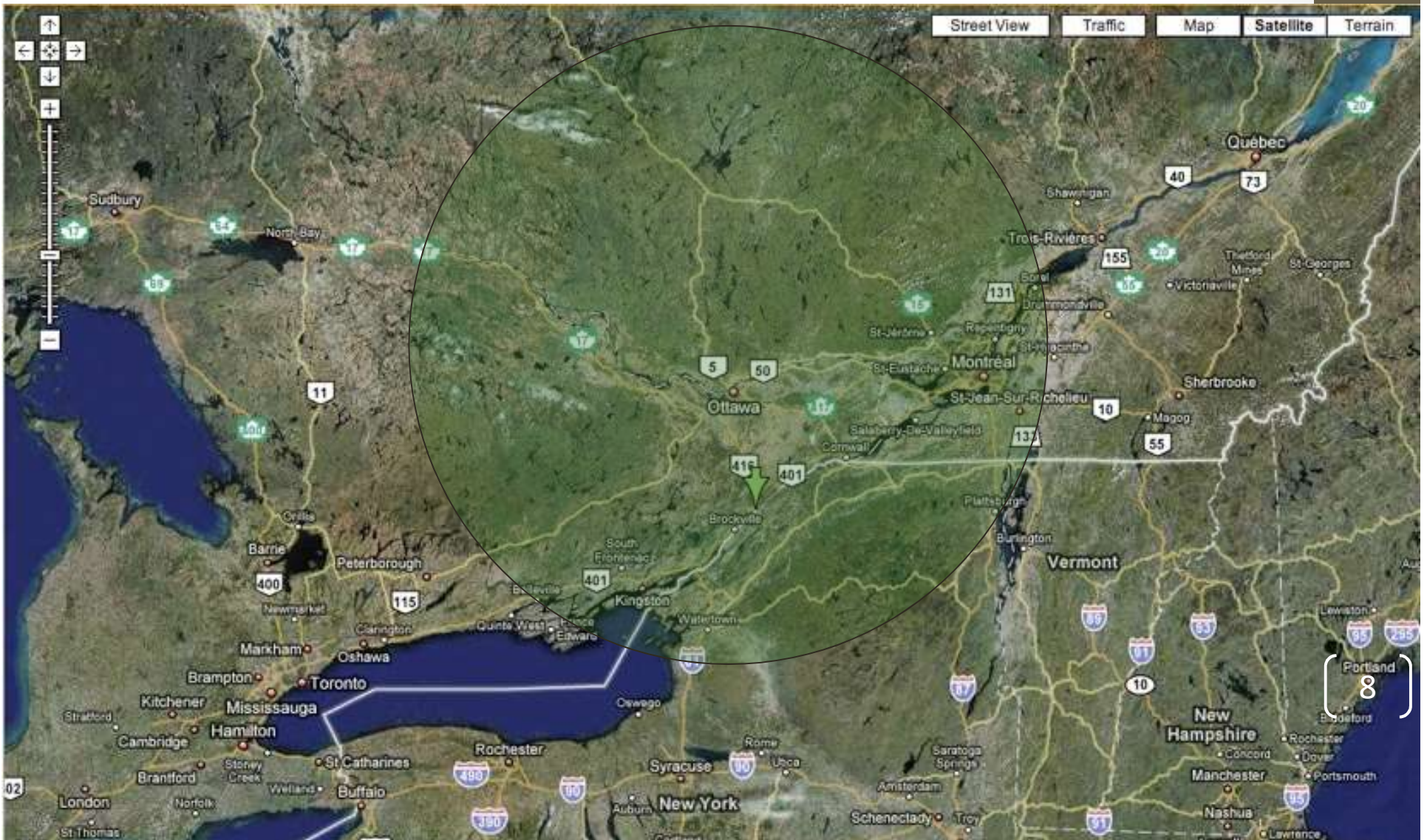


## Eastern Ontario Regional Network: an Eastern Ontario Wardens' Caucus achievement with Ontario, Federal and municipal funding.

- Support for innovation and economic growth and quality of life in rural Eastern Ontario
- Backbone in place months ahead of schedule
- And *capacity for moving those eFRI files at 100Mbps.*
- [www.eorn.ca](http://www.eorn.ca)



North America's most significant hard wood forest region: geographic advantage; 50 million people within a day's drive; "forest industry on the rebound" – FPAC Hardwood Great Lakes St. Lawrence Forests and 95 percent of Ontario Population are in southern Ontario. Lots of "big data" to be converted to useful inventory



# Ontario East Economic Development Commission promotes Eastern Ontario around the world as an investment opportunity

- Ontario East represents over 200 communities , with more than two million residents.
- Check out: [www.onteast.com](http://www.onteast.com)
- One of the key OEWC Board members is Craig Kelley from Renfrew County. We are proud so announce that he is also the newly elected chair of the OEEDC.
- Craig epitomizes the energy and expertise of the people of Ontario East.
- Newly elected chair Craig Kelley says “Forestry and added-value wood products represent an enormous opportunity in Eastern Ontario. As new technologies come online on a regular basis – synthetic automotive fibres , jet fuel, etc. – our forests are becoming a valuable commodity for our future needs. Our region has a defined strength in providing the world marketing with high-quality timber, harvested in sustainable forests by a very talented workforce. As the economy shifts to meet increased demand for wood and wood products – housing, furniture and so on – our region will be able to once again flourish.”



# The hardwoods of Eastern Ontario: significant resource for Ontario

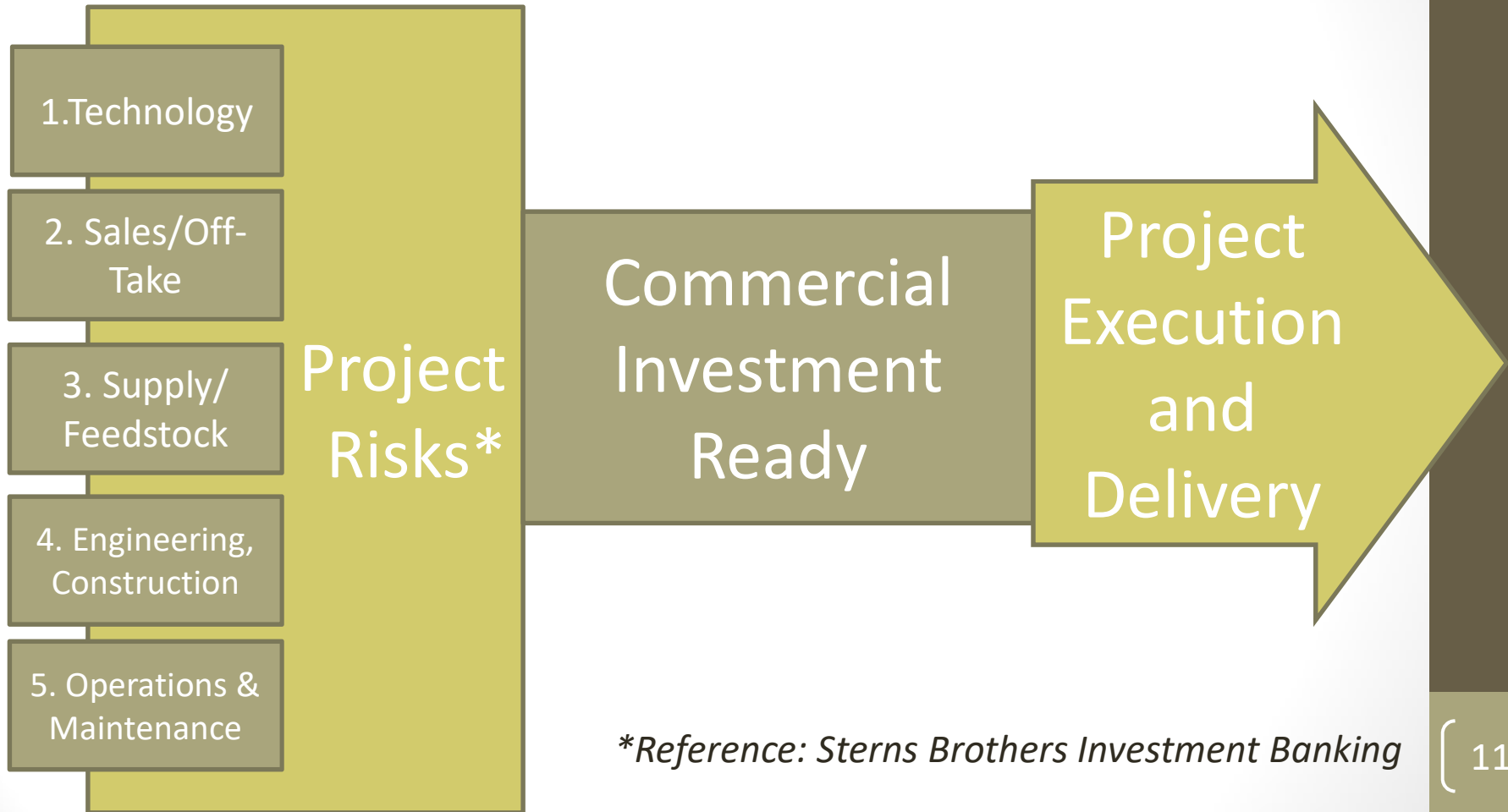


**Ontario Wood**

The natural choice



# Using Connectivity and Deep Sectorial Experience to Mitigate Top 5 Risks



*\*Reference: Sterns Brothers Investment Banking*



# EOMF; furthering sustainable forestry in sustainable rural communities; with 600 partners in rural Eastern Ontario for 20 years



At EOMF AGM , in Limerick Forest in rural Leeds & Grenville June 2012

# Eastern Ontario Model Forest

## EOMF – a founding partner of OEWC

- Key member of Canadian Model Forest Network
- Funded currently by Canadian Forest Service under Forest Communities Program
- Includes Eastern Ontario where most of Canada's best hardwoods grow
- Key link to sustainable forest resources, First Nations and regional heritage
- Over 600 well established partnerships
- Sharing great knowledge of the forestry industries of Eastern Ontario and beyond
- Leadership over past 20 years – recognition of leadership – December 12<sup>th</sup> at Forestry Seminar
- Knowledge base/research along the entire value chain
- Experts in short rotation woody crops (willow and poplar); trials at Ferguson Forest Centre
- Manages a highly successful Forest Stewardship Council (FSC) Certificate program
- Based on Chapter 11 of Agenda 21 and Statement of Forest Principles 1992
- Pioneers in effort to build enhanced Forest Resource Inventory necessary for efficient, effective and environmentally sound sustainable forestry and sustainable rural communities in Eastern Ontario
- [www.eomf.on.ca](http://www.eomf.on.ca)



Brian Barkley, Henry Lickers , Sandra Lawn and Ray Fortune receive honour on December 12, 2012

# EOMF Forest Certification Program

- Project started as a pilot in 2000
- Goal was to recruit 15-20 owners and achieve FSC certification
- Created a CWG to provide guidance and direction
- Achieved certification in January 2003 – 2500ha
- Currently 9 Community Forests representing 43,500 ha
- 156 private forest owners representing 9,500 ha
- Program currently manages over 53,000 ha or 137,000 acres
- First FSC certified Maple Syrup producers in Canada





# Ottawa Valley *sustainable* forest industries:

- 1 million metric tonnes of pulp wood available – with little market currently – great potential for innovative uses
- In Renfrew county alone a \$294,000,000 business
- [www.OttawaValleyWood.com](http://www.OttawaValleyWood.com)
- Ontario needs to raise the Feed- In-Tariff for biomass to even 20 cents
- See video “Green Jobs in Ontario” on [www.eomf.on.ca](http://www.eomf.on.ca) or at <http://www.youtube.com/watch?v=PnMRIhIPj04>
- [http://www.youtube.com/watch?NR=1&v=9He\\_c3HUadY](http://www.youtube.com/watch?NR=1&v=9He_c3HUadY)
- Wood is nature’s stroke of pure genius and “the world’s most environmental friendly raw resource.”





# Edwardsburgh/Cardinal: a founding partner

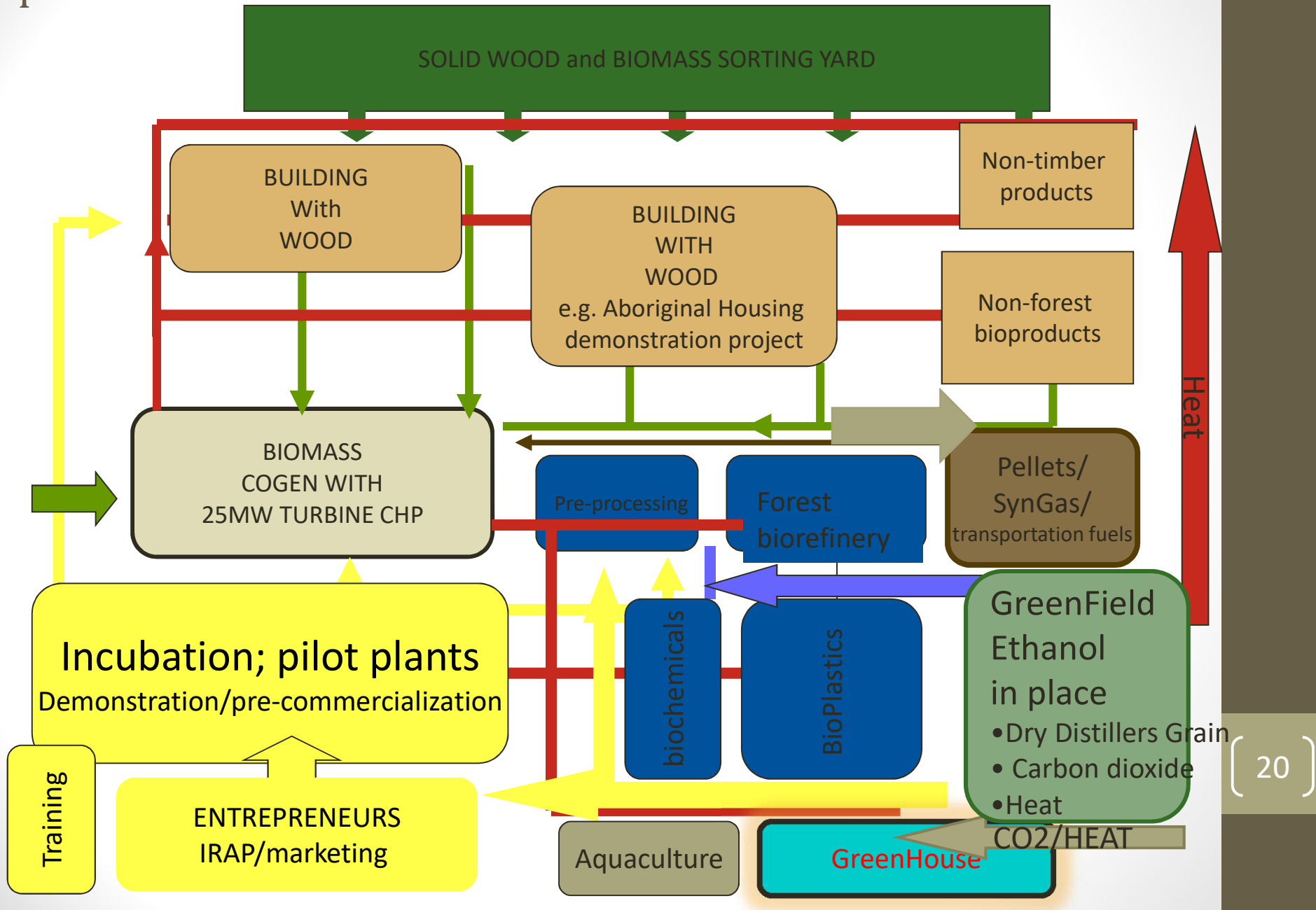


- Community capacity: local strength
- Owners of Port of Johnstown  
[www.portofprescott.com](http://www.portofprescott.com)
- Owners of Edwardsburgh/Cardinal Industrial Park
- [www.edwardsburghcardinal.ca](http://www.edwardsburghcardinal.ca)
- Beautiful historic rural community
- On the shores of the world's greatest supply of fresh water
- Route to the heartland of North America and Europe
- In the midst of the most significant hardwood forests in North America
- Economic Development

Strategy complete

- MOU in place with OEWC
- 10,000 acres of poplar, north of Highway 401 and owned by the Province

# A bio-based cluster (eco-industrial model) is underway with much promise for the future



# Siting of new wharf; GreenField in background



# GreenField Ethanol, an early anchor, off to strong start; active partner

- 230 million litres of ethanol per year; now at over 120% of capacity; 52 permanent jobs;
  - 22 million bushels of corn mostly from regional farmers
  - By-products: heat, carbon dioxide and dry distillers grain
  - \$180 million dollar construction cost
  - Current research on cellulosic ethanol from corn cobs centred at Chatham
  - Essential support to corn producers (we just need to find a good use for the cobs – and they are out there!)
- “We have a particular interest in the R&D and demonstration aspect. This Centre [OEWC] is ideally positioned to bridge the gap between scientific and technological discoveries and subsequent commercialization of the innovative utilization of forest and agricultural feed stocks and associated products.”
  - Railway siding in place
  - Co-operating with greenhouse feasibility study. Queen’s TEAM at work – “on the right track” - expert
  - Active and welcome partner “we actively seek to support the OEWC and anything that would be of synergistic benefit between us.” Darrel Veres, Mgr., September 12, 2011
  - 10,000 acres of provincially owned 35 year old poplar forest close by



# 2011/12 GreenHouse TEAM\* prepared the way for entrepreneurs; many thanks to Queen's

- literature/research/best practices review
- technology options
- heat and power options
- carbon dioxide mitigation technology
- Stock and products search
- marketing plan and land requirements
- Utilities and energy needs
- growth medium
- fertilization
- water needs
- labour costs (up to 30 jobs)
- management and
- five year budget (pro forma)
- co-operation with GreenField
- Presentation well received on April 16<sup>th</sup>
- Local Food movement
- next step: finding entrepreneur(s) – and we have at least one working hard on their business plan
- Good support from OMAFRA representative



# GreenHouse project at GreenField

- Proponent: Ontario East Wood Centre; TEAM (Technology, Engineering & Management) from Queen's funded by Ontario Centres of Excellence and Prescott & District Chamber of Commerce
- Technologically, scientifically advanced ideas
- Jobs/economic development potential; multi-billion dollar business in central Ontario – why not here?
- Sequestering some of 500 tonnes/day of carbon dioxide and excess heat from GreenField Ethanol, benefit to GreenField
- Suntech in Manotick a proponent
- Presentation made April 16, 2012 at South Edwardsburgh Community Centre in Johnstown well attended
- Value proposition fits changing culture of food, nutrition and energy and carbon sequestering



Port of Prescott ; GRAIN IN BY SHIP....80,000 Tonnes

Three ships equal 2,000 Truckloads

\$34 million improvements make port more attractive to value-added products



# Housing is a touchstone issue

- In 2010, in **Rationale For the Utilization of Local Labour and Local Materials to Improve Housing Conditions in First Nation Communities**, **Bradley Henry of the Canadian Forest Service** lays it out for all of us.
- When you improve housing you increase health benefits, academic performance of children and youth, reduce use of the justice system, and improve mental and physical health
- There must be a strategic investment made at the national provincial and community level – base it on local lumber, local labour
- Housing is complex touchstone issue requiring a team effort – national, provincial and community collaboration and strategic action

FCP & First Nations in British Columbia – active partners

- The Nuu-chah-nulth Central Region Management Board (CRMB) and Ecotrust Canada launched Clayoquot Forest Communities – including:
  - Ahousaht, Hesquiaht, Toquaht, Ucluelet and Tla-o-qui-aht
  - Resources North Association - Lheidli T'enneh First Nation
  - and Saik'uz First Nation
- Daniel Arbour, MA Ecotrust Canada and Chair of the Canadian Model Forest Network



# First Nations Housing projects across Canada?

**Building the case for using local  
lumber, local labour**



**Cardinal House – good example**

- 1400 sq. feet; \$120,000
- Principles of modularity, prefabrication and mass production
- Can be shipped easily, higher quality finishes, assembled with minimum training
- More sympathetic to cultural and environmental needs of First Nations People

# Building on traditions and skills with solid wood over the centuries



Richard David, master basket maker visits Limerick Forest (FSC certified) where building is constructed of local wood

Ferguson Forest Centre going strong – [www.seedlingnursery.com](http://www.seedlingnursery.com) Key to sustainability of forests; fast-growing hybrid test sites at Ferguson Forest Centre successful; crop for lower class lands, preventing erosion; potential energy crop. 10,000 acre 35 year old hybrid poplar plantation (provincially owned) sits idle in nearby Edwardsburgh/Cardinal.



Sandra Lawn and Ed Pachell at Annual Woodlot Owners Conference, 2012



Dr. Peter Hall, Ed Pachell and visitors from SUNY Syracuse with baled wood

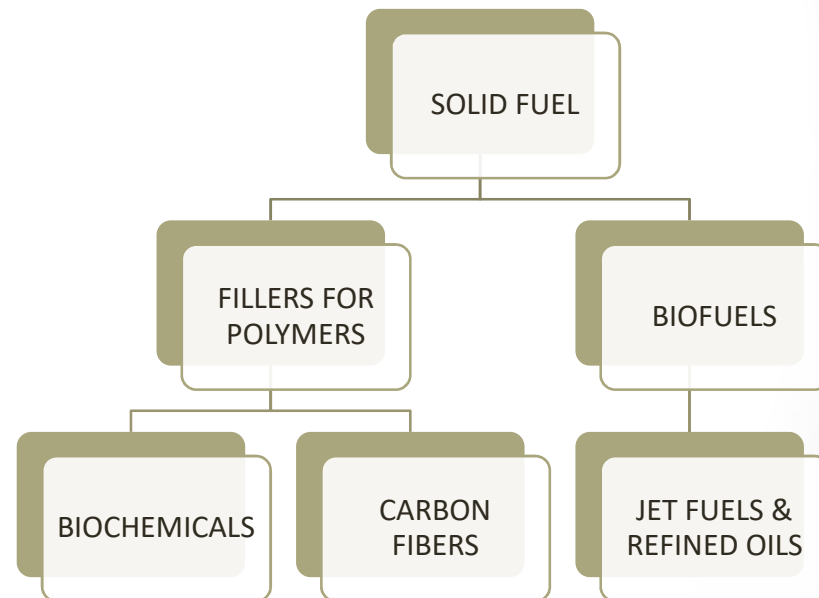
# Microalgal production – innovation at work around the world

- Dr. Christopher Q. Lan, Associate Professor and Researcher at University of Ottawa visited
- Letter of support exchanged
- Seeking \$1 million EcoEnergy grant
- Great news at first, LOI was selected for submission of a full proposal.
- Application declined but
- Still hard at work
- Now turning his attention to use of algae for waste water treatment
- Microalgal Ethanol Production in Canadian Conditions
- Algae need carbon dioxide to grow



## Advancing project: New York based energy company epitomizes challenge of high energy costs in Ontario

- a NY-based energy company that will be producing renewable biomass fuels for the North American Industrial Thermal Boiler and Coal-fired Power Plant markets. Business plan complete; support from federal and provincial officials showed promise.
- The Company planned to construct a Torrefied Biomass Pilot Plant: in Ontario, at a cost of \$7-million dollars: \$5.85-million in equipment, \$650,000 of soft costs and \$500,000 in financing costs and reserve funds. This is not a pellet plant. (A large pellet plant is proposed for the Town of Prescott by Protocol Biomass of 27 St. Clair Avenue, Toronto, but this plant isn't involved with the OEWC)
- Over the next two years, the second phase would see the construction of commercial scale plant, at an estimated total cost of approximately \$20-million to service the increasing demand for renewable energy products in the Ontario, Quebec and U.S. markets.
- The Company will act as a holding company for each project that will consist of a separate corporation
- a Canadian corporation has been formed
- working closely with OEWC
- well received by the Township of Edwardsburgh/Cardinal
- Great potential for production of polymers
- Actively seeking financial support; **but great challenge is higher cost of power than in Northern New York (e.g. 6.3 to 11.8 cents compared to just over 2 cents per kwh in NYS) – what is to be done?**



## Fundamental need: an enhanced Southern Ontario Forest/Natural Resources Inventory

- Good data is dramatically out of date in Great Lakes-St. Lawrence Forests
- Southern Ontario is **where 94.6 % of Ontario lives and where approx. 41,000 people work in the forestry/wood related sectors**
- Enhanced Forest Resource Inventory Program (eFRI) began in 2005 - on Crown Forests
- eFRI is essential for current, timely and effective:
  - forest management planning
  - wood supply analysis
  - habitat analysis
  - provincial reporting
  - business development
  - land use planning and environmental protection
  - protection of surface water, forest cover, groundwater flux zones and
  - assessment of climate change effect.\*
- Ontario needs to get this done and bring this knowledge to the table



Southern Ontario (the mixed wood plains ecozone) showed a trend to fewer, smaller, and more fragmented forests ibid p 26

\*Ontario Ministry of Natural Resources. 2012, State of Ontario's Forests, Toronto: Queen's Printer for Ontario. 73p.

# From the U.S. Forest Service: Trees and human health, January 16, 2013

- Worth noting, and fitting with our focus on economics and sustainability: “Evidence is increasing from multiple scientific fields that exposure to the natural environment can improve human health. In a new study by the U.S. Forest Service, the presence of trees was associated with human health.”
- <http://www.fs.fed.us/pnw/news/2013/01/tree-human-health.shtml>
- And 95% of Ontario lives in southern Ontario!



# Queen's support for OEWC

- Queen's Business Consulting assisted with Wood Science Innovation Business Plan
- Business Law Consulting helped establish incorporation
- We were a Moneison Centre (School of business) Knowledge in Society project
- Four interdisciplinary TEAM projects so far – including research into production of furfural, housing components to Asia etc.
- Two (Chemical Engineering) CHEE 470 courses based on OEWC
- CHEE 310 course based on OEWC
- Hosting meetings e.g. with Ecole Polytechnique and SUNY professors
- Conference on a Low Carbon Future for Eastern Ontario; highlighting OEWC
- Encouragement and support; active involvement on the Board and as advisors (e.g. VP Dr. Steve Liss, Dr. James McLellan, head of Chemical Engineering, Dr. Warren Mabee and David Mody of CHEE
- New TEAM projects were being developed for 2012/13, cost has now risen to \$2000 for not-for-profit; three proposals: bio refinery related, forest inventory and fast growing hybrids will be proposed for 2013; private local companies also participating and preparing for 2013 call for proposals



# On-going work; Dimethyl Ether Project of Calgary proponent



- Fourth-year Chemical Engineering students from Queen's presented results of CHEE 470
- New project started
- Proposed location of plant is Ontario East Wood Centre & Eco-Industrial Park – considered ideal
- “I have learned more in this course than in any other”
- Funded by Calgary proponent, EOMF in-kind and two private donors
- Temporarily on hold



Standing ovation for popular, hardworking leader

# University of Toronto Faculty of Forestry

- U of Toronto Eastern Ontario biomass NSERC; project complete
- Dr. Sally Krigstin - involved with OEWC from beginning
- Dr. Sandy Smith, former Dean and on the OEWC Board of Directors
- Dr. Tat Smith – involved since the beginning
- Professor Mohini Sain (now Dean of Forestry) “Involve us wherever you will find our expertise fits.” March 8, 2012
  - Bio-plastic research and development
  - Cellulose based micro and nano composite technology
  - Industrial biomaterials and Bio composites Manufacturing
  - Biomass Technology – value added utilization of residual biomass
  - Keenly aware of the importance and challenge of commercialization
  - Met with OEWC Board April 16, 2012; keen on pursuing commercialization

## University of Toronto Forestry Service



# Colleges – valuable collaboration

La Cité collégiale, Ottawa – signed memorandum of understanding on February 10, 2010 in areas such as construction (aboriginal housing), architecture, forest technology, biotechnology, exterior design and environment as programs that can be involved. They also have an international project pertaining to workers mobility including students with institutions from France and Finland. We were pleased to welcome Jukka Asp from Finland on October 4, 2010 and architect Turkki and engineering student from Finland for work placement in June/July 2011

St. Lawrence College, Brockville campus - signed MOU; especially supportive re training and stationary engineering, applied technology, business planning and other related programs

Algonquin College, Ottawa and Pembroke, Ontario – Applied Research and Innovation Director – MOU seeking relationship in variety of areas including involvement of Forestry Technician students in Pembroke and applied technology with respect to forest related initiatives; September 18, 2010 visit to Black Walnut plantation – collaborative project; new centre for the trades and new campus in Pembroke.

Loyalist College at Belleville – MOU now in place; special interest from Bancroft campus – strong lumbering area; FPI/EOMF seminar in Bancroft February 15, 2011



# Prefeasibility study completed



*Ontario East Wood Centre & ECO-INDUSTRIAL PARK - Biomass Cogen Plant*

# Incorporation of the OEWC & EIP for the benefit of all of Eastern Ontario; objects are:

1. The development of forest and biomass based and innovation-inspired cluster[s] of industrial, business and demonstration projects in an ecologically sound environment
2. A platform for scientific collaboration, business development, demonstration, piloting, commercialization, exporting and marketing of a wide array of innovative value-added wood and biomass products, including but not limited to: solid wood building components, biochemicals and bioenergy
3. Assistance to the forest industry in creating uses for underutilized, lower value wood in Eastern Ontario and the region and
4. Participation in the restructuring of the forest industry of the Great Lakes/St. Lawrence forest for the benefit of rural communities and in partnership with a variety of other organizations, academic institutions, individuals and agencies with compatible goals.



# Board of Directors; diverse and experienced

- Alastair Baird, Manager of Renfrew County Economic Development Department
- Brian Barkley, RPF: president of Canadian Model Forest Network, Interim chair of the board
- Ray Bonenberg; retired MNR Director of Southern Region, President Ontario Maple Syrup Producers
- Tony Bull (founding director), retired Parks Canada director, VP EOMF
- Dr. Michel Caron, La Cité collégiale
- Larry Dishaw (founding director) former mayor
- Greg Gooch, P. Eng. MBA
- Deputy Mayor John Hunter, Township of Edwardsburgh/Cardinal
- Geri Kamenz: Chair of Ontario Farm Products Marketing Commission, area farmer
- Craig Kelley: Community Development Officer Renfrew County
- Sandra S. Lawn BSc, MPA: Project Leader, (founding director)
- Dave Lemkay: Executive Director, Renfrew Industrial Commission
- Henry Lickers, Environmental Officer, Mohawk Council of Akwesasne (until April 2012)
- Jason Linkewich, B. Com, FCMA: Vice President – Fibre Supply Strategy, Tembec
- Dr. Steven Liss: Vice Principal (Research) Queen's University
- Dennis Senik, P. Eng., MBA
- Dr. Sandy Smith: former Dean of Faculty of Forestry at University of Toronto
- Dr. Ed White: Professor Emeritus, State University of NY Environmental Science and Forestry

# Special Advisors

- Mark Angelini, Ontario wood export expert
- Dr. Tom Amidon, New York SUNY, Environmental Science and Forestry
- Doug Cleary, agriculture
- Ministry of Economic development and Innovation, U.S. office – working with possible new company of great promise
- Denny Doyle, Glenn McDougall and Rick Clayton of Doyletech, Ottawa
- Bill Goodfellow RFP , Ottawa
- Dr. Peter Hall, retired Natural Resources Canada
- Patrick Huot, P.Eng., Industry Canada
- Craig Kelley, President of the Ontario East Economic Development Commission – 2013-2014
- Dr. Sally Krigstin (U of T)
- Dr. Warren Mabee, Queen's
- Ian Manson, Economist, MNR
- Michelle Maybee P. Eng., Ontario Wood Works
- Jim McCready, forester, Pres. EOMF
- Dr. Murray McLaughlin, Sustainable Chemistry Alliance
- David Mody, P. Eng., Queen's
- Tom Richardson, forest industry – Lanark
- Jamie Stephens, UBC/Queen's
- Dr. Paul Stuart, École Polytechnique
- Al Sprague, P.Eng., retired CASCO
- Dr. Geoff Whitfield: retired chief scientist DuPont Canada
- Dr. Susan Wood-Bohm: former Director of Research, Queen's now Alberta Innovates and many others



# Building adaptive capacity

Dr. Murray McLaughlin, Dr. Mohini Sain U of T, Gérald Beaulieu of FPI, engineers from GreenField, Hon. Donna Cansfield, former Minister of Natural Resources at the Port, friendly Asian chap at OECD, Gord Brown MP, Steve Clark, MPP, tree planting at the Port, Michelle Maybee P. Eng. of Ontario Wood Works, Councillor Morrell, Queen's students, even a chap from North Bay interested in shipping pellets to Europe dropped in via his helicopter!



# Some Supportive Initiatives

- EOMF is Lead for Canadian Model Forest Network National Initiative on Bio-Energy
- Forest Biomass Discovery initiative with Queen's, MNR & EOMF
- Southern Ontario Operational Biomass, Trial with Feric etc. some time ago – now seeking interest of FPI
- SUNY fast-growing Plantations trials at Ferguson Forest Centre
- Mohawk Community of Akwesasne, Forest Management Strategy
- University of Guelph-Kemptville, Campus, bio-oil for maple producers, biomass initiative under discussion
- Documentation of Domtar's Short Rotation Forest Commercial Harvest
- New biomass study at U of T began in Summer 2012
- Dennis Senick of Doyletech (and hardworking OEWB board member) speaking on "Economics of Technology" at Ontario East Municipal Conference, in Kingston on September 12, 2012; training workshop prepared for economic development officers and others
- CRIBE (Centre for Research in the bio-economy - \$25 million fund for projects focused on the north but now reaching out to industry in the south.



Mohawk Council

FPIinnovations  
FERIC



of Akwesasne



CANADIAN  
MODEL FOREST  
NETWORK  
RÉSEAU  
CANADIEN DE  
FORÊTS MODÈLES



University of Toronto  
Forestry Service



Natural Resources Canada / Ressources naturelles Canada  
Canadian Forest Service



National Research Council Canada / Conseil national de recherches Canada  
Industrial Research Assistance Program



# Wide array of programs – federal and provincial – fragmentation a challenge for a grass roots initiative

- 47 provincial programs in nine different ministries
- Provincial Eastern Ontario Development Fund funding in place, not for start-ups so far
- Grenville Community Futures Development Corporation most effective to date with EODP program
- some of the Commercializing and Innovation FedDev Programs
  - Southern Ontario Development Program
  - NRC Canada Industrial Research Assistance Program
  - Business Development Bank of Canada
  - Applied Research and Commercialization Initiative
  - Technology Development Program
  - Scientists and engineers in business
  - Investing in business Innovation
  - Prosperity Initiative (turned us down on March 2, 2012 after five month wait) – disappointing to say the least; need professional assistance



# Finnish *sisu* sets an example

- Finnish architect visits here thanks to La Cité
- Engineering student from Finland
- Finish delegation to EOMF
- Canada-Finland Bioenergy Seminar in Toronto March 5, 2012
- Konrad Yakabuski in his challenging article “It ain’t pretty”\* hit the nail on the head “Canada may have beat Finland to take this year's world hockey championship in May, but clearly the Finns are whomping our butts where it really counts: in meeting the challenges of globalization... there is little evidence that a true paradigm shift ...has taken hold [in Canada.]



\*in November 29, 2007 Globe & Mail

# Finding the path to jobs and growth (cont'd.)

This co-evolution shifts the relative **importance** and **composition** of the three components of *value creation*.



- Supply Chain
- Technology Platform
- Value Proposition

- Success is **systemic**, demanding the full realignment of all three as market penetration increases.

## 1. Value Proposition

- Functionality; Price; Compatibility; and, Ease-of-Use

## 2. Technology

- The know-how to transform 'nuts & bolts' into products & services

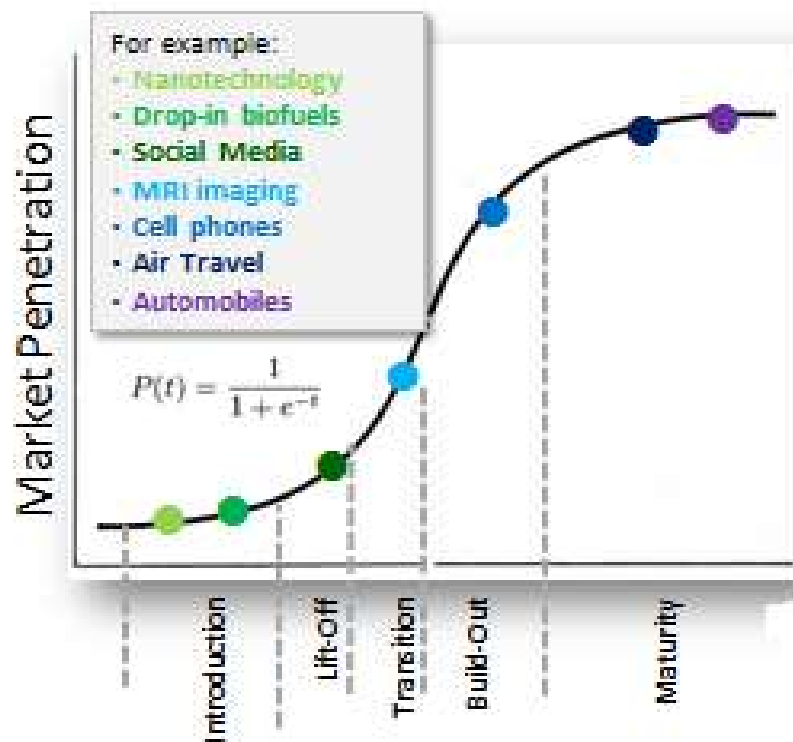
## 3. Industrial Supply Chain

- The structures & practices to *create, produce, operate* and *support* product and service applications.

# Finding the path to jobs and growth (cont'd.)

The value components develop in a highly consistent pattern, *driven* by growing market penetration, e.g. **Value Proposition:**

## The Well-Worn Path



○ *Introduction:* new functionality carries the day

*Lift-Off:* demands lower price & basic functionality

*Transition:* wants begin to overtake needs.

*Build-Out:* segmentation emphasizes the role of marketing and distribution; technology becomes a supporting actor

*Maturity:* for jaded users, value proposition becomes just the ticket of admission

# Accelerate and Improve Rate of Successful Commercialization

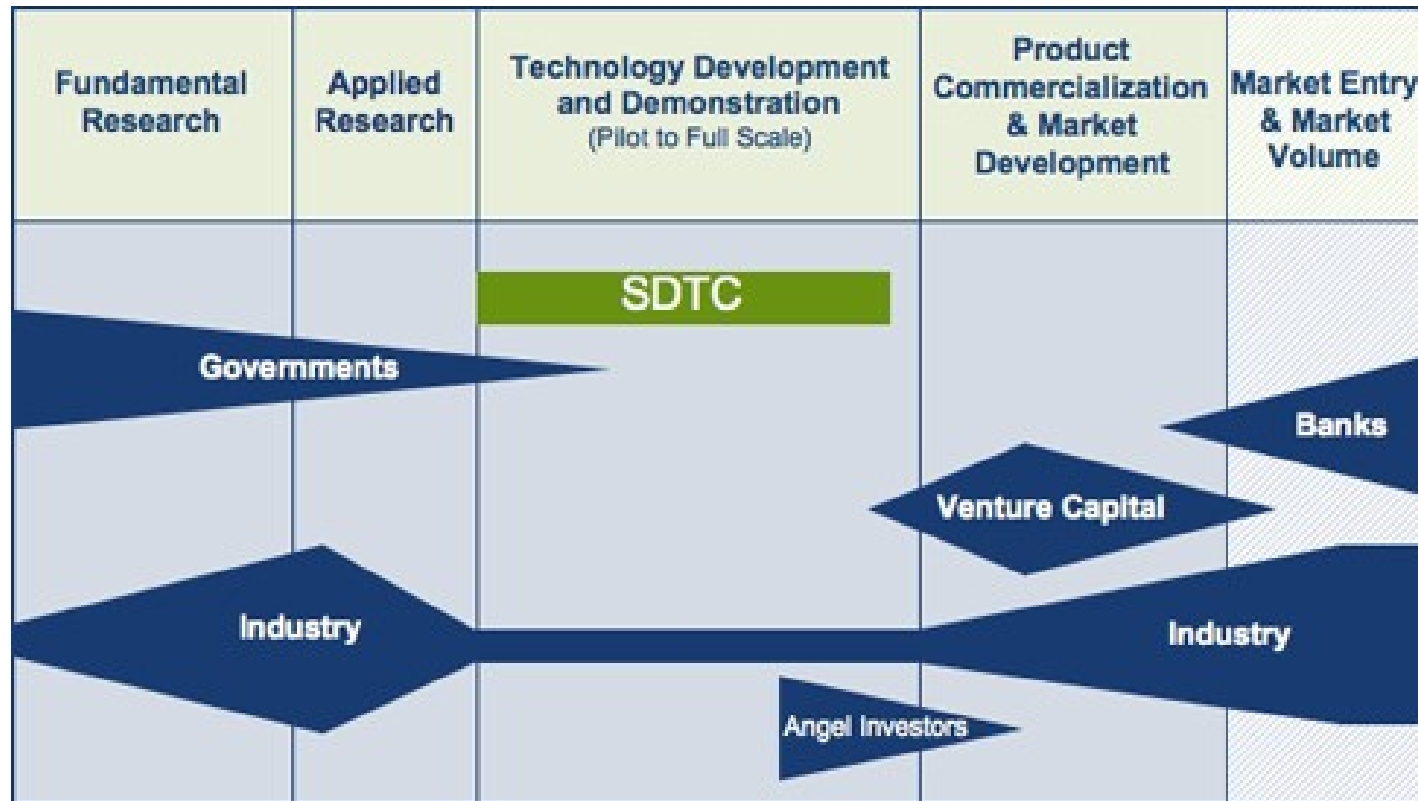
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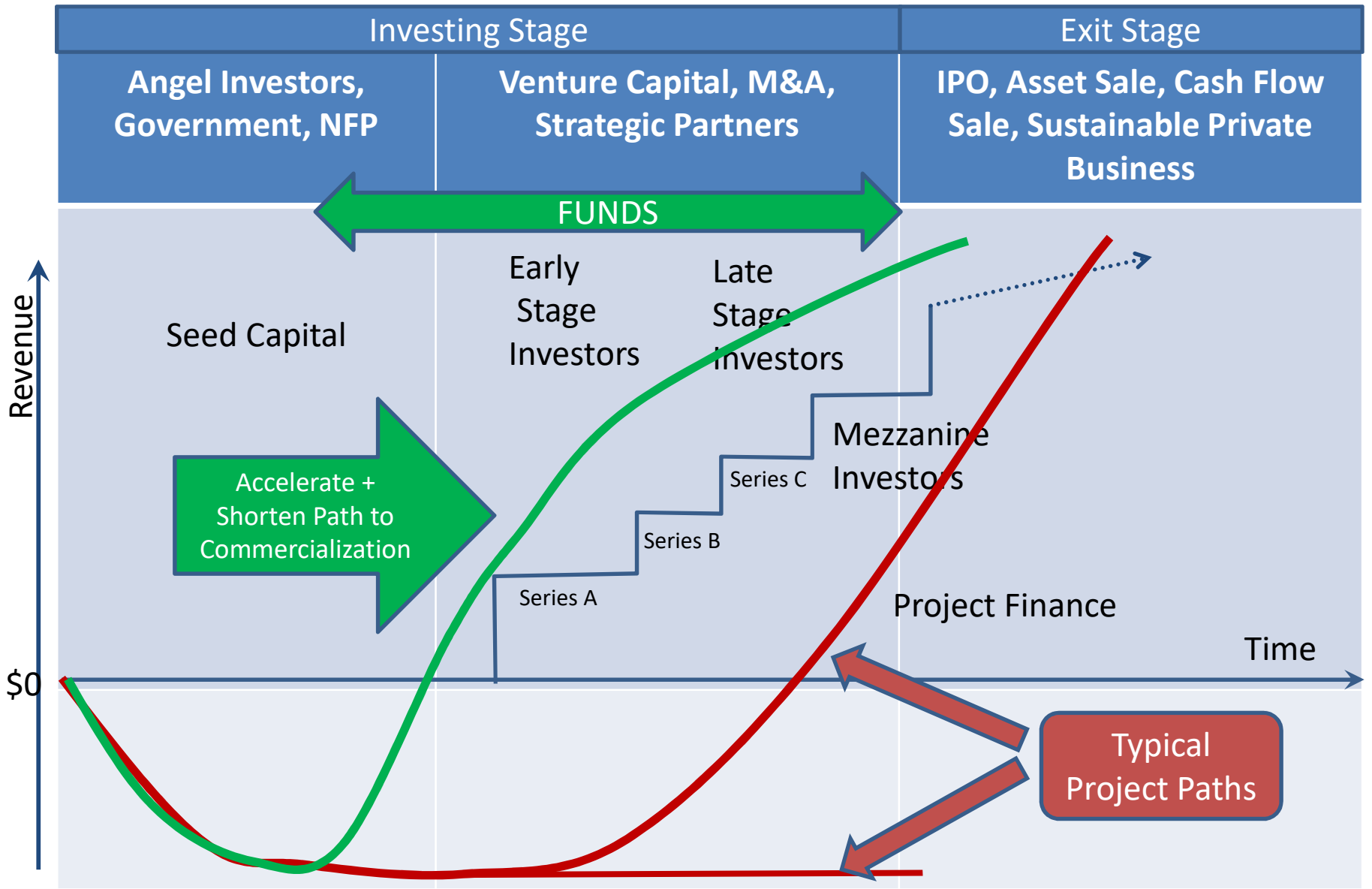
1. Early Stage Financing
2. Connectivity
3. Readily accessible critical skills
4. Risk Mitigation
5. "Street Creds"



Delivering  
Commercialization by  
Bridging Gaps of  
"Death Valley"

# Bridging the gap in commercialization (SDTC\*)- accelerating and shortening the walk through “the valley of death”

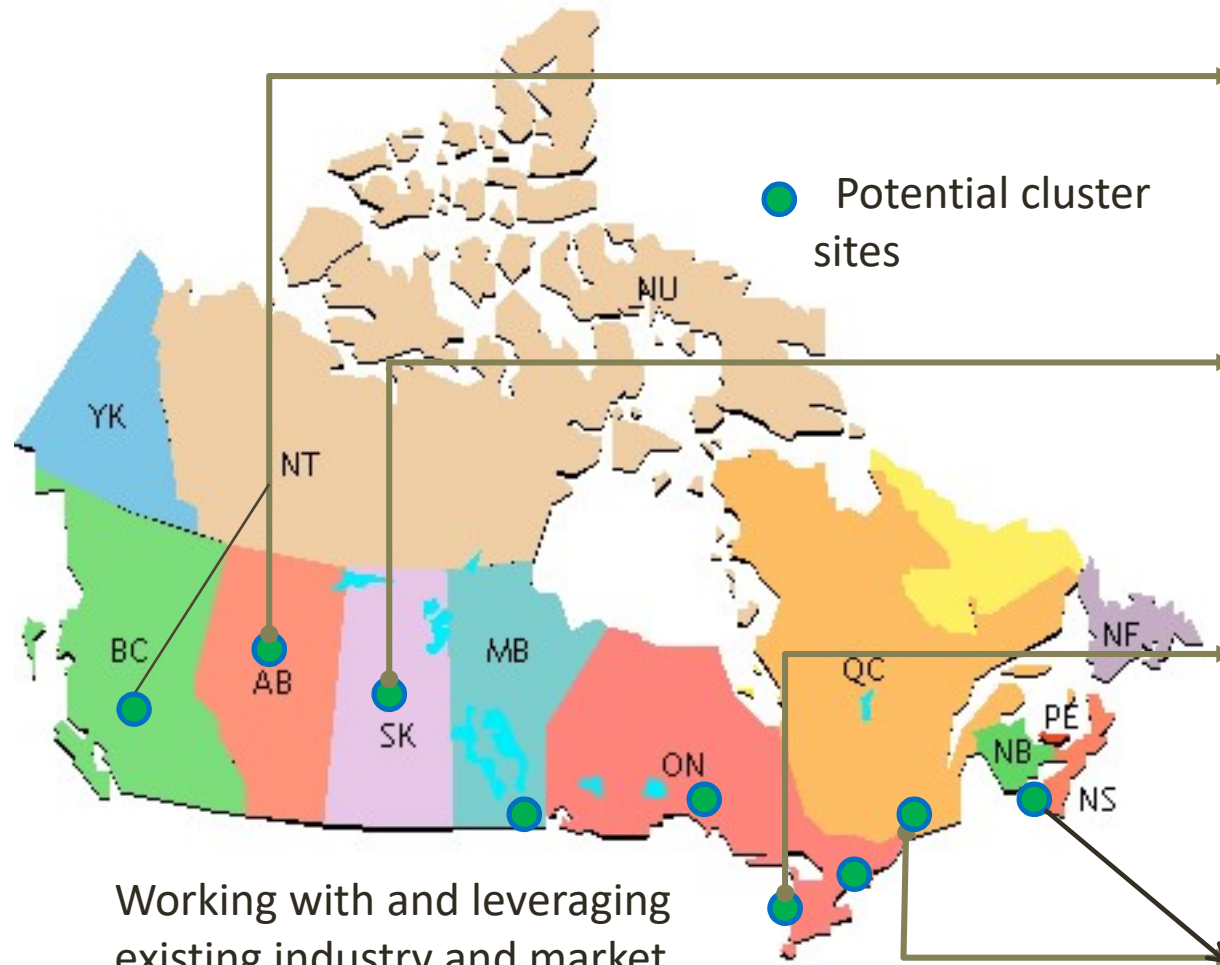




Courtesy Murray McLaughlin

# Creating BioHybrid Clusters Across Canada

Converging Fossil and Renewable to a Sustainable Industry



## Alberta and BC

- CO2 Capture + Conversion
- Upgrading and Energy Infrastructure
- Agri and Forest Biomass

## Saskatoon

- Internationally Renown Agricultural Reputation
- Potash Mining and Energy Infrastructure
- Agri Biomass

## Sarnia and Ontario

- **First BioHybrid Cluster**
- Petrochemical, Energy, Manufacturing Infrastructure
- Close to Markets
- Agri and Forest Biomass

## Quebec and Atlantic

- Abundant Hydro Power
- Energy, Manufacturing Infrastructure
- Close to Markets
- Forest Biomass

Working with and leveraging existing industry and market infrastructure

# “The forest products sector ...

is now a future oriented business that is brimming with opportunity. It is now hiring and offering solid careers for those who care about their future, the environment and their quality of life,” said David Lindsay, President and CEO of FPAC, speaking at Annual Paper Week in Montreal, February 6, 2013

David Lindsay is a former Deputy Minister of Natural Resources, Energy and Northern Development, Mines and Forestry and familiar with our initiative. We expect some of his optimism to spill into Eastern Ontario, the heart of Canada’s hardwood forests and a beautiful place!



Mississippi Mills photo by SSLawn

## *“Connecting the Dots in the Value Chain”* Strategic Directions set on November 26, 2012 with:

- Brian Barkley RPF, OEWC Board, Co-chair, presenter
- Ray Bonenberg, OEWC Board, Co-chair
- Tony Bull, EOMF, presenter
- Hugh Cameron, advisor
- Connor Cleary, Clearydale Farms
- Doug Cleary, Clearydale Farms, advisor
- Larry Dishaw, OEWC Board
- Dennis Dmytrow, Cardinal Power of Canada
- Greg Gooch, OEWC Board
- Bill Goodfellow, Forester
- Dr. Peter Hall, EOMF
- Deputy Mayor John Hunter
- Craig Kelley, Ottawa Valley Economic Development – agriculture and forestry sector, presenter
- Sandra Lawn, OEWC Board. Lawrence Levere, South Nation Conservation Authority
- Michelle Mabee, Ontario Wood Works (presenter)
- Katalijn MacAfee, Canadian Forest Service (presenter)
- Dr. Frank Maine, presenter, inventor
- Eva Maine (observer)
- Dennis Senik, OEWC Board
- Mayor Bill Sloan
- Ann Weir, Manager of Economic Development of United Counties of Leeds & Grenville

# 1) Working with Potential Players

- *“Stoke the fires, keep the irons hot”*
- Implement the MOUs
  - Work to get prospects “Township Ready”
  - Continued collaboration with the anchor-GreenField
- Build cluster, critical mass – work to attract other players to the cluster concept in other locations
- Key support for biomass producers: from forest and field
- Ongoing effort to achieve our original objects
- High Priority is economic development based on sustainable forestry and sustainable rural communities - it’s what we are all about!

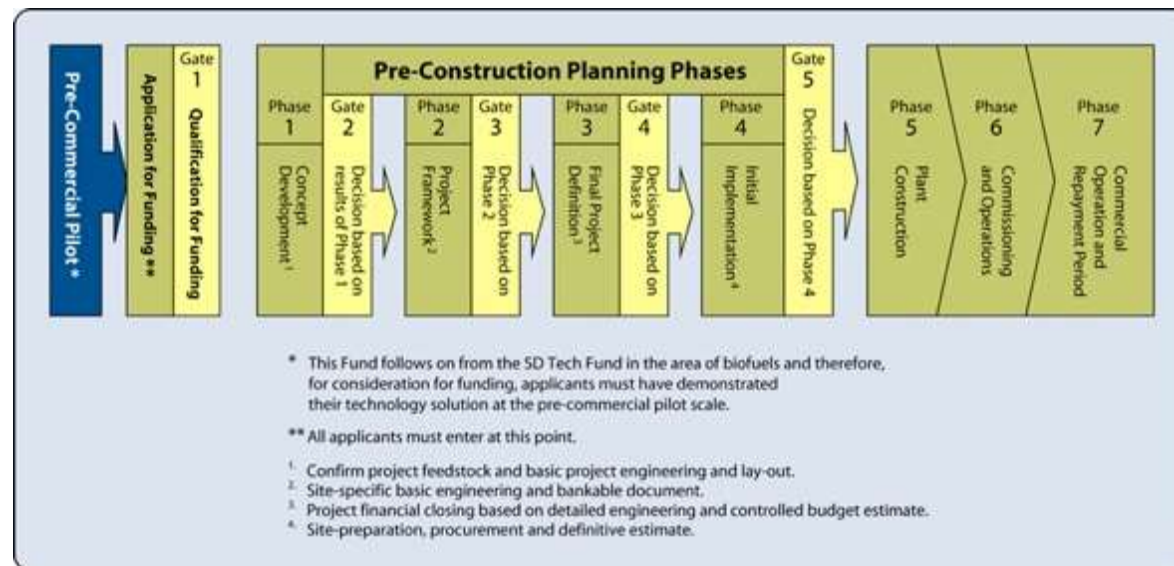


## 2) Knowledge & Information

- Continue to press for better forest information
  - Need bigger and fuller picture all resources for example enhanced Forest Resource Inventory is fundamental – seek support from Deputy Minister of MNR – expected to visit us in January 2013
- Information specific to OEWC region of interest
- Support info for the bio economy – for example the Eastern Ontario Warden’s Caucus is successful collaborative that gets things done
- Queen’s TEAM continues to be important partner and capacity builder; need to ensure we can meet their new financial requirements

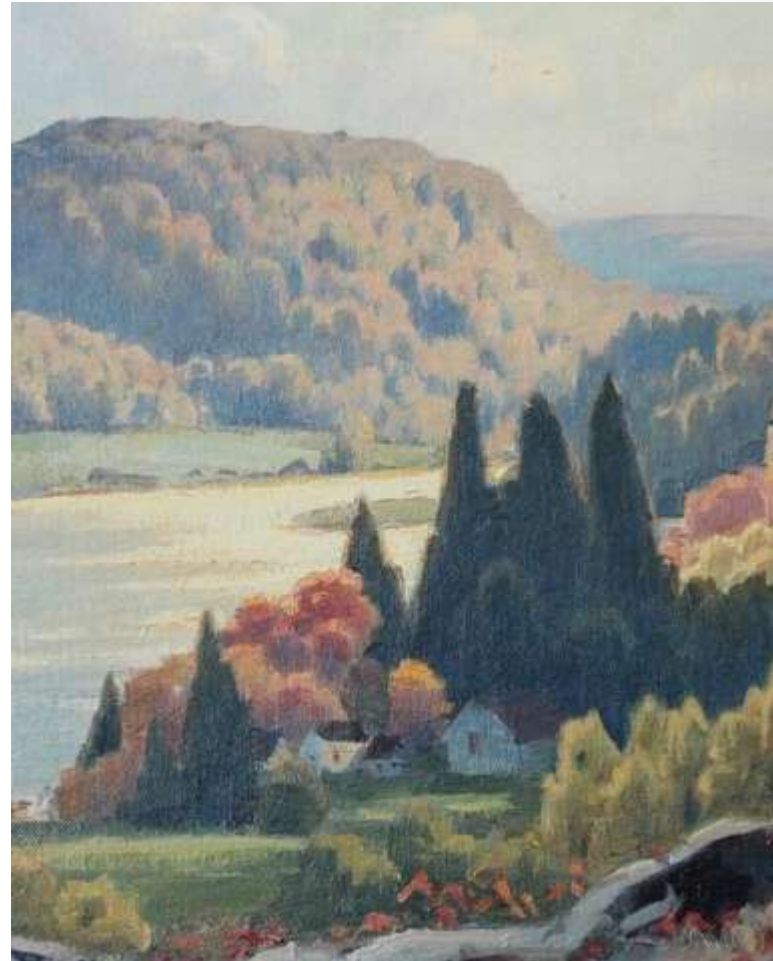
# 3) Barriers to Investment

- Issue of navigating the maze - need a knowledgeable navigator
- Issue of capital pool access in Canada
- Observations made and need to be shared with those who influence and affect program design
- Experienced investors need to guide this and we are fortunate to have some of these folks on our Board
- Pool of entrepreneurial mentors to guide and advise new potential players – we have a good group now but it needs to be expanded



## 4) OEWC Networking based on Haudinsaunee Naturalized Knowledge System: including

- “Everything is connected to everything else”
- “Knowledge is powerful but only when it is shared”
- “Cooperation is the way to survive”
- Collaborate and support
- Enable the cluster, encourage innovation



## 5) Tangible Support & Resources needed

- “strengthen the shoestring”
- Continue to engage with the EOMF and many others who have a mandate *and responsibility* to participate and support
- Engage MNR Deputy in a meaningful way
- Look at federal positioning –need for demonstrations and examples – need multiple approaches; this is complex
- Work with recommended parties, governments, businesses and new associates such as Wood Works



## Fundamentals: EARTH SUMMIT AGENDA 21; The United Nations Programme of action for Sustainable Development—are we succeeding in Canada?

- In Canada in 1992 we took the “Programme for Action” as it pertained to forests seriously\* – the Canadian Model Forest Network, including the Eastern Ontario Model Forest were established. Now two decades of collaboration and cooperation has brought us to 2013.
- \* Earth Summit Agenda 21; The United Nations Programme of Action From Rio, p 88-97
- A reread of the UN Statement of Forest Principles and Section 2; Chapter 11 “Combating deforestation” is encouraging on the one hand and still a disappointment on the other! Priorities listed included management-related activities, data and information, and co-operation and coordination, capacity building, increased recognition of the social, economic and ecological value of trees, forests and forest lands.
- The value of a natural resources GIS-based inventory of natural resources would provide essential wise decision-making in the Great Lakes St. Lawrence Forest- a priority for 2013.

# Fundamentals from the Statement of Forest Principles of the United Nations 1992

- Canadian, Ontario and local governments, private and public sector members recognize (even in 2013) that:
  - “forests are essential to economic development and the maintenance of all forms of life”
  - “A holistic and balanced approach to environment and development is essential”
- “responsibility for forest management, conservation and sustainable development should be pursued at the appropriate level of government”
- “Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. These needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other forest products.”

# Economic Impact from 2008 Doyletech report to OEWC

- The OEWC will catalyze the flow of resources necessary to build a cluster
  - A growing stream as the clusters mature
  - The major resources are:
    - **Technology:** developed to benefit the entire value chain; and, attracted from outside.
    - **People:** key people will be easier to hire.
    - **Money:** a critical mass of companies attracts the attention of both public (e.g., IRAP) and private (e.g., angels, Venture Capital) money.
    - **Business Know-How:** builds on interaction with other Eastern Ontario companies, mentors, etc.
    - **Facilities:** bringing flexibility and ease of expansion.

## Economic development within a sustainable framework – in summary

- Innovation: exploring new products and procedures, markets, trends and partnerships
- Build on regional strengths: e.g. extensive forest resource of high quality throughout Eastern Ontario, experienced labour force, Port of Prescott (to be called Port of Johnstown in 2014), County of Renfrew, geographic advantage (railway, highways, international bridges, proximity of large markets) existing clusters of significant industries (Dupont, Dyno-Nobel, Invista, Ensyn Technologies Inc., Evonic Industries and CASCO and Cardinal Power), industrial support, agricultural opportunity, five universities and four colleges
- Forestry expertise; see [www.OttawaValleyWood.com](http://www.OttawaValleyWood.com) and [www.eomf.on.ca](http://www.eomf.on.ca)
- Demonstrating and commercializing new products in demand in a new world (not easy)
- Collaboration: between the multitude jurisdictions, agencies, ministries, departments, municipalities (not easy either!)
- Cluster based – eco-industrial approach – by-product of one becomes feedstock of the other
- and working together with all of the Eastern Ontario stakeholders – we will do this!!

# Summary of Key Actions for OEWC in 2013

- With national and provincial encouragement, working with and supporting the players of significance where we are already engaged
- Knowledge and information gathering and sharing – at conferences, meetings, seminars, webinars, universities
- Breaking down Barriers to Investment and Innovation at all levels; this is major challenge but we are well positioned
- OEWC continued networking and researching
- Achievement of a workable, full natural resources inventory
- Achieving support (tangible) and resources



**Ontario East Wood Centre  
& ECO-INDUSTRIAL PARK**

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