

Developing a Sustainable Biohybrid Economy in Southern Ontario

BIOP 2008

November 5th, 2008

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Sarnia-Lambton Economic Partnership

Presentation Agenda

- Overview of Sarnia-Lambton
- Agriculture
- Petrochemical and Refining Complex
- Sustainable Biohybrid Development Strategy



Sarnia-Lambton Economic Partnership

- Private-Public Partnership – Formed in Fall 1994
- Provide strategic leadership and support to community-based economic development in Sarnia and Lambton County
- 80 Community Leaders – 16 Member Board
- Financial and Volunteer Support from major industries



Sarnia-Lambton

- Region of 129,000 strategically located in the centre of the Great Lakes Industrial Corridor
- One hour from Detroit, three hours from Toronto and Buffalo
- 140 million people, half the population of Canada and the United States, within a 800 kilometre radius or a day's trucking





Agriculture – A Key Economic Sector



Agriculture – A Key Economic Sector

- Annual farm revenues of \$370 million
- Second largest economic sector
- Traditional focus – commodity crops (soy beans, corn and wheat) and livestock
- Largest Ontario region for soy bean production
- Proactive effort to investigate opportunities adding value to the sector



Petrochemical & Refining Complex



- **Significant North American Petrochemical and Refining Centre**
- **Employment of 4,500 in 36 related facilities**
- **Significant producer of chemicals, plastics, synthetic rubber and variety of oil-based products for North American and off-shore markets**
- **Established multinationals include Air Products, BP, Cabot Carbon, Dow Chemical, DuPont, Exxon-Mobil, LANXESS, Nova Chemicals, Praxair, Royal Dutch Shell, Suncor Energy and Terra Nitrogen**



Photo courtesy of: www.pc.gc.ca/.../tch-cwh/images/10springs.jpg

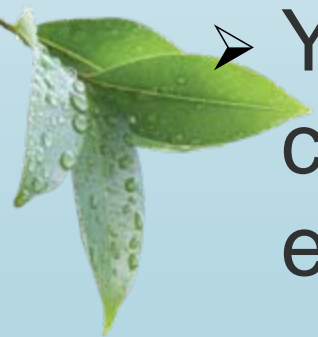
Petrochemical and Refining Complex

- Significant restructuring and rationalization over the past 25 years
- Sector remains a major pillar of the regional economy
- Recent period of significant Capital Investment – in excess of \$2 Billion
- Greatest activity since early 1980's



Economic Challenges in 2002

- Realization that petrochemical and refining sector would not have significant job creation in the long term
- No emerging high growth sectors in knowledge intensive industries
- Youth were not returning to the community after post-secondary education



Sustainable Economic Growth Strategy

- Regional effort to facilitate new sectors that have a logical relationship with the community's existing infrastructure
- Strategic Direction –
 - Bio-Economy
 - Agriculture
 - Refining & Chemicals
 - Cleantech
 - Development of External Energy Markets



Concept of the Biohybrid Economy

- Potential to replace or supplement materials currently based on hydrocarbons with those made from renewable resources – bio-fuels and renewable chemicals, bio-composites, textiles
- “**Biohybrid**” – merging the hydrocarbon based economy with the industrial bio-economy
- New uses for locally grown agricultural crops
- Local infrastructure – potential to support evolving processes and technologies



Supportive Infrastructure

- International expertise – process engineering and design and metal fabrication
- R&D assets
- Proven ability to build, maintain and operate pilot plants
- Regional agricultural sector – Potential source of raw materials



Strategic Regional Approach

- A collaborative and coordinated effort within Southern Ontario
 - Sarnia-Lambton Economic Partnership
 - Sustainable Chemistry Alliance
 - UWO Research Park – Sarnia-Lambton Campus
 - Bioindustrial Innovation Centre
 - Southwestern Ontario Bio-Products Innovation Network (SOBIN)
 - Bluewater Sustainability Initiative
 - Ontario BioAuto Council



Economic Partnership

- 2002 Strategic Plan – development of industrial bio-products, biofuels and renewable chemicals
- Evolved from working with Suncor Energy on the development of proposed grain ethanol facility
- Local agriculture sector was keen to participate
- **Challenge – With the exception of Suncor, the local chemical and refining companies were not at the table**



Sustainable Chemistry Alliance

- Evolved from the Ontario Chemistry Value Chain Initiative which was formed in 2002
- Industry Co-Chairs – Steve Bolt, Bernard West
- Initial focus was on advancing innovation in the Ontario chemistry sector
- Chemical industry involvement – companies and CCPA
- Recent strategic planning exercise has resulted in a newly established non-profit corporation based in Sarnia
- Focused on promotion of biomass and biohybrid opportunities with an emphasis on commercialization
- \$5 Million funding from federal Centres of Excellence for Commercialization and Research
- Recruitment of Founding President & C.E.O. underway



UWO Research Park – Sarnia-Lambton Campus

- Former Dow Canada Corporate Office acquired by City of Sarnia and County of Lambton in 2003
- Community Development Corporation established to govern the Park
- Agreement with University of Western Ontario to manage and develop the site as a research park
- Executive Director and dedicated staff in place
- Focus on industrial bio-product opportunities



Bioindustrial Innovation Centre

- Located at UWO Research Park in Sarnia
- \$25 million from Ontario and Canadian governments – infrastructure and operational funding
- Centre supports the development of the bio-hybrid chemical sector
- Focus on commercialization
- Joel Adams and Don Hewson – key in development of centre



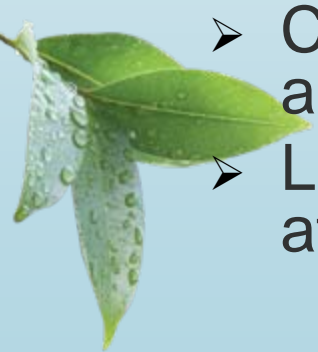
Southwestern Bioproducts Innovation Network SOBIN

- Joint initiative – Economic Partnership, Chatham-Kent, Windsor-Essex, University of Windsor, Lambton College, Ridgetown College and St. Clair College
- Funding from Ontario Ministry of Research and Innovation along with member organizations
- Facilitate development of regional bio-products cluster
- Working agreement with UWO Research Park



Bluewater Sustainability Initiative

- Partnership – industry, business, education and local government
- Vision – Sarnia-Lambton to be recognized globally as a hybrid, green community
- **Key Participants – local industries – LANXESS, Nova and Suncor**
- Focus on identifying and implementing sustainability initiatives
- Core Strategy Areas – biohybrid development , alternative energy, environmental and education
- Lobby senior levels of government to support activities at the UWO Research Park



Ontario BioAuto Council

- Council is positioning Ontario to meet the demand for sustainable, bio-based products
- Linkages between the automotive and agriculture sectors
- Primary focus – biomaterials – flexible bio-base foams and woodfibre composites
- \$5 Million funding from Provincial government to supports biomaterials ventures and commercialization
- Craig Crawford, President and CEO



Time Line of Events

➤ 2002

Ontario Chemistry Value Chain Initiative is launched
SLEP Strategic Plan focuses on industrial bioproducts and renewables

➤ 2003

Ontario Biotechnology Cluster Program – Funding of regional innovation network (RIN) business plans – impetus for development of SOBIN

Community Development Corporation purchases Dow Corporate Centre and MOU signed with UWO to develop the site as a research park



Time Line of Events

➤ **2004**

ICF Consulting – Business plan for creation of SOBIN

➤ **2005**

Ontario government announces operational funding for provincial RIN's – SOBIN hires Executive Director – Matt McLean

➤ **2006**

Ontario BioAuto Council is formed

Bluewater Sustainability Initiative is launched and concept of the “Biohybrid Economy” is adopted by the Sarnia-Lambton community

Suncor's St. Clair Ethanol plant is commissioned

UWO Research Park – Work begins on concept of Bioindustrial Innovation Centre



Time Line of Events

➤ 2007

Ontario announces \$5 million funding for BioAuto Council

Ontario announces \$10 million for Bioindustrial Innovation Centre

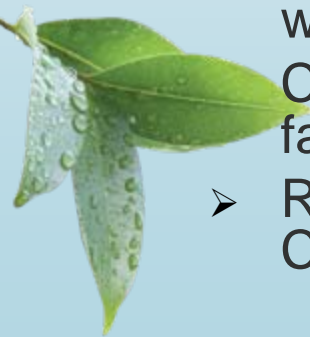
➤ 2008

Bioindustrial Innovation Centre awarded \$15 million through Canadian Centres of Excellence for Commercialization and Research Program

Ontario Chemistry Value Chain Initiative undertakes strategic plan which leads to transformation to Sustainable Chemistry Alliance

Construction begins on expansion of Suncor's St. Clair Ethanol facility

- Recruitment of Founding President and C.E.O. For Sustainable Chemistry Alliance.



Contributing Factors – Progress to Date

- Coordinated and collaborative effort of all parties involved
- Direct linkages across all organizations
- Alignment with senior government policies and programs
- Ongoing liaison with senior governments
- Industry is at the table and an active participant
- Continuity of staff within organizations
- **THE PEOPLE FACTOR** – Driven and Dedicated



Thank You – Merci

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