

The Sarnia-Lambton Biohybrid Chemistry Cluster

2019



YOUR BIOHYBRID FUTURE IS HERE

Sarnia-Lambton, Ontario, Canada accelerates growth and increases profitability for enterprises in the biohybrid chemistry sector.

Discover why companies like NOVA Chemicals, Suncor Energy, Products, Origin Materials, ARLANXEO, Comet Bio, LCY Biosciences, and dozens of others are growing their businesses in Sarnia-Lambton.

SARNIA-LAMBTON'S BIOHYBRID ADVANTAGES

- A track record of collaborative innovation
- Established process infrastructure
- Outstanding access to markets
- Proximity to oil, natural gas, and bio-based feedstocks
- Strong government support
- A highly-skilled, reliable labour force

JUMP STARTING INNOVATION

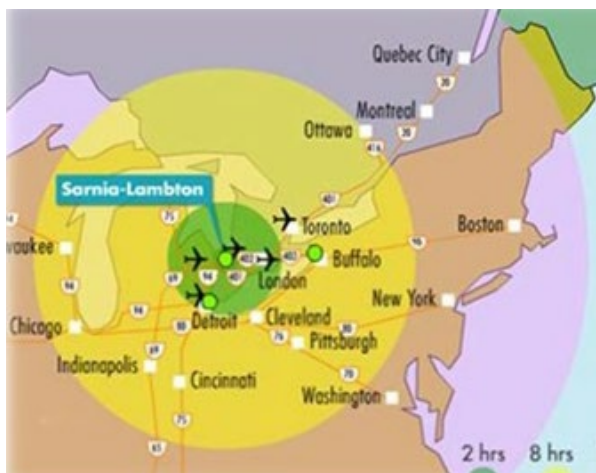
Based in Sarnia, Bioindustrial Innovation Canada (BIC) focuses on the commercialization of large-scale industrial biotechnology. BIC has facilities, including lab space, analytical services, over 6000 square feet of pilot plant space, a closed-in fermentation room, warehouse space, and a loading dock.



Sarnia Harbour, www.sarniaharbour.com



St. Clair River Deep Water Port



A PLACE FOR GROWING BUSINESSES

Sarnia-Lambton is a major North American petrochemical hub that produces petroleum and various petrochemical products, plastics, synthetic rubber, and other chemicals.

Many multinational companies are located here, including CF Industries, ARLANXEO, DuPont, Exxon-Mobil (through its Canadian affiliate, Imperial Oil), NOVA Chemicals, Plains Midstream, Royal Dutch Shell, Styrolution, and Suncor.



NOVA Chemicals

Sarnia-Lambton is also becoming recognized around the world as a centre for bioindustrial manufacturing and Research & Development.

The Sarnia-Lambton Biohybrid Chemistry Cluster includes companies at every stage, from bench scale to pilot plant to full-scale commercialization.

WHAT ARE THESE COMPANIES DOING?

- Suncor Energy Products operates the largest ethanol facility in Canada, producing over 400 million litres of fuel-grade ethanol per year. The plant uses 20% of the corn grown in Ontario.
- Woodland Biofuels operates a cellulosic ethanol demonstration plant at the BIC accelerator at the Western Sarnia-Lambton Research Park.
- Origin Materials operates its pilot plant at the Western Sarnia-Lambton Research Park and is currently constructing a commercial-demo facility at the Bio-Industrial Park Sarnia to produce bioplastics
- Comet Bio announced the location of its commercial scale biomass derived sugar facility in the TransAlta Bluewater Energy Park. The 60 million pound per year facility will produce dextrose sugar from corn stover once constructed.
- Announcements of new facilities to be built include Forge Hydrocarbons, Benefuel Inc. AChT, BIOX Corporation, Imtex Membranes, and NOVA Chemicals' 2.2 billion dollar expansion.

EVERYTHING IS IN PLACE

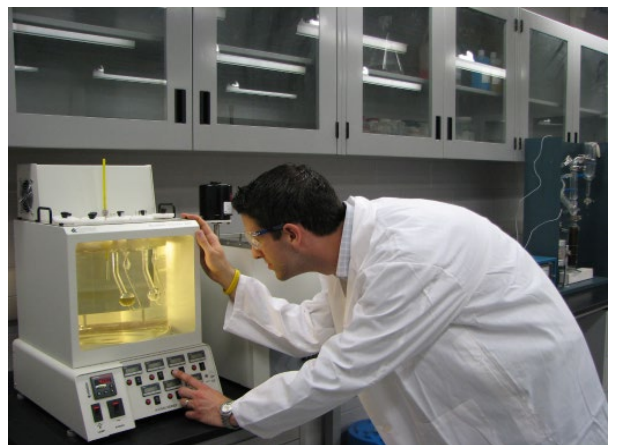
SARNIA-LAMBTON HAS EVERYTHING YOU NEED TO GROW YOUR BIOHYBRID COMPANY

- A culture of collaborative innovation based on recognition of the area's natural fit for merging hydrocarbon-based and industrial bio-based economies.
- Established process infrastructure ideally suited to emerging bio-based industries, supported by an industrial base of more than 80 local firms with expertise from plant concept, construction, full operation, and maintenance.
- Outstanding access to markets via road, rail, and a deep seas port. More than half of United States' GDP is produced within 10 trucking hours of Sarnia-Lambton.
- Proximity to oil, natural gas, and bio-based feedstocks including pipelines from Western Canada, Eastern Canada, and the United States. These include substantial quantities of soybeans, wheat, corn, agricultural residues, sugar beets, and related biomass.
- Strong government support including a competitive corporate tax environment, incentives and grants, and the BIC accelerator facility at the Western Sarnia-Lambton Research Park.
- A highly skilled, reliable labour force including more than 5000 tradespeople.

SOWING THE SEEDS OF INNOVATION

In Sarnia-Lambton, these organizations speed the development of emerging biohybrid firms and provide the resources and skilled workers that established firms require.

Bioindustrial Innovation Canada (BIC) helps companies turn sustainable feedstocks, such as agricultural and forestry by-products and wastes, into energy and value-added chemicals for applications ranging from construction to automotive parts. BIC has created North America's first bioindustrial laboratories and shared pilot plant facilities for gasification, pyrolysis, fermentation, and bio-conversion; key technologies in converting agricultural and forestry by-products into fuels, chemicals, products, and materials.



Lab at Bioindustrial Innovation Canada, Bowman Centre,
at Western Sarnia-Lambton Research Park.
www.binCanada.com

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The Western Sarnia-Lambton Research Park

is a joint venture of Western University, the County of Lambton, and the City of Sarnia. Research Park staff will work with you to assess your innovation needs, access various resources, and unlock the potential in your business, product, service, process, or idea. The Park's focus is on key industrial sectors in the region, and innovation opportunities in alternative energies, advanced materials, and environmental process and biotechnologies. The Park is a conduit to innovation, connecting industry to knowledge, talent, and resources. Through the Park, you can access world class scientists and developers, leading-edge research, equipment and commercialization resources. In 2016, Western Research Parks was awarded the Outstanding Research Park Award by the Association of University Research Parks.



Western Sarnia-Lambton Research Park
www.sarnialambtonresearchpark.ca

Lambton College offers training and research that supports the biohybrid chemistry and energy sector. The Centre of Excellence in Energy and Bioindustrial Technologies provides training in leading edge process technologies and applications. The Advanced Materials Engineering Research Lab is a state of the art facility for students and manufacturers researching polymer and biodegradable materials and advanced manufacturing technologies. The Applied Research and Innovation Program works with partners to develop working models, with services including proof of principle testing, marketing, business planning, and market research. In 2018, Lambton College was ranked as the top research college in Canada.



Student Project at Lambton College
www.lambtoncollege.ca

SOWING THE SEEDS OF INNOVATION



VANDEBURGT FARMS

Agricultural producers are a strategic partner in the Biohybrid Chemistry Cluster. With over 500,000 acres of cultivated land, Lambton County is a leading Ontario producer of soybeans, winter wheat, and corn, as well as related agricultural by-products and wastes. The region is a one-day drive to 1.6 billion bushels of corn and 621 million bushels of soybeans.

ABOUT THE SARNIA-LAMBTON ECONOMIC PARTNERSHIP

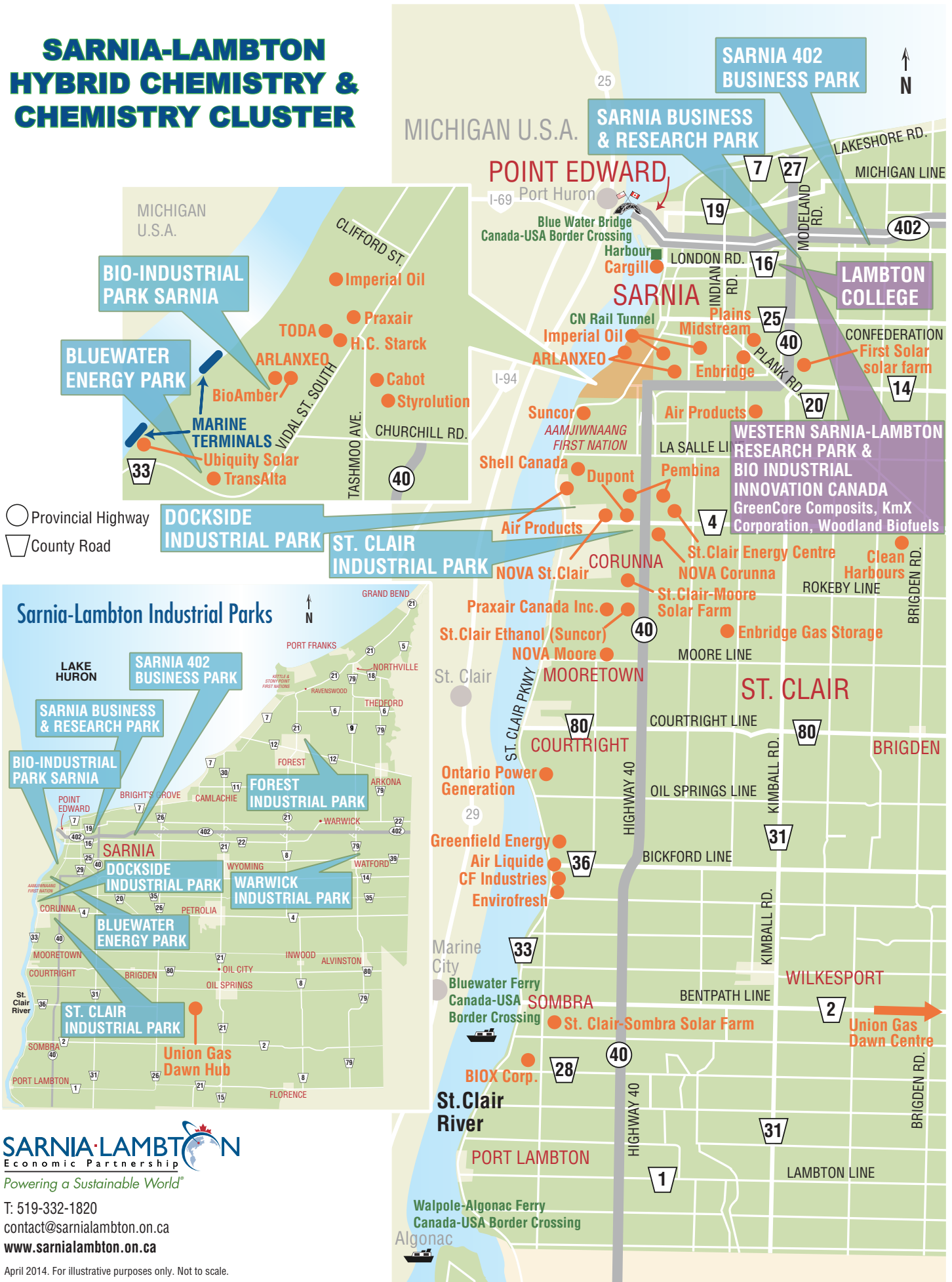
Our Core Services are:

Strategic Economic Planning for the Community - We provide comprehensive research, analysis, and planning in identified strategic economic sectors for development, attraction, and revitalization activity. We provide support to municipal economic development planning initiatives that build community capacity, improve economic receptivity and readiness, and attract investment and jobs.

Entrepreneurship and Small Business Support - We support and nurture entrepreneurs and small business owners with counselling, business support services, and educational programs. We foster growth, development, and retention in Lambton County's business and industrial sectors through knowledge transfer, relationship development, and the facilitation of strategic alliances and partnerships.

Site Selection Services - We aid in identifying greenfield, brownfield, or partner sites for the development of new facilities and the expansion or relocation of existing businesses. The Sarnia-Lambton Economic Partnership was recently named a Top 10 Economic Development Group in Canada by Site Selection Magazine.

SARNIA-LAMBTON HYBRID CHEMISTRY & CHEMISTRY CLUSTER



○ Provincial Highway
□ County Road

SARNIA-LAMBTON
Economic Partnership

Powering a Sustainable World®
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April 2014. For illustrative purposes only. Not to scale.

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