



July 6, 2011

To Whom It May Concern:

Bioindustrial Innovation Centre, Sarnia, ON

The Research Park in Sarnia-Lambton is host to the Bioindustrial Innovation Centre (BIC) , housed in the Bowman Centre for Technology Development, formerly our Bldg 1010. The BIC is funded under the federal Centres of Excellence for Commercialization and Research program. The Centre's mandate is to assist in the commercialization of technologies for the conversion of biomass to chemicals and fuels. Part of the funding for the Centre has also been applied to the formation of the Sustainable Chemistry Alliance, an industry-led investment entity to assist new companies with capital to exploit new biomass and green chemistry technologies.

The BIC provides facilities for tenant companies to site their developing technologies and test them at the 10-1000 kg/h scale of processing. As a "technology hotel", the facility provides access to:

- Six laboratories with attached offices, fully services with utilities and mobile laboratory benches, so that companies can lay out a lab to suit their space arrangement needs. Each lab is already equipped with a fumehood and sink, with room for an additional hood.
- Low-bay (12.5' ceiling) and high-bay (25' ceiling) pilot plant space, supplied with water, RO deionized water, steam, natural gas, compressed air, chilled glycol and vacuum, and a drain waste diversion system to control undesirable spills
- A fully equipped Shared Service Laboratory with analytical equipment to provide biomass compositional analyses as well as the full suite of ASTM test methods for biofuels.
- Scientific and commercialization experts in the fields of chemical and mechanical engineering, chemistry and business management, to mentor startup companies
- Conference and support spaces, including large loading docks and a warehouse.
- Test plots of sustainable crops such as *Miscanthus* grasses, coppice-grown poplar and willow varieties and native grasses or shrubs

I N N O V A T I N G W I T H I N D U S T R Y

The BIC is already working with companies in a wide spectrum of technologies, including biomass combustion, gasification, pyrolysis and advanced continuous separations. The Centre is working with a project spectrum made up roughly as follows:

- 50 % chemicals derived from biomasses and industrial paper or wood byproducts
- 35 % fuels derived from biomass by fermentation or thermochemical means
- 15 % on biological process alternatives to chemical reagents or catalysis
- 10 % new bioprocessing technologies, such as membrane or ion exchange separations
- 5 % other sustainable technologies such as hydrogen processing, solar power, etc.

The facilities for the BIC were renovated on the site of the former Canadian headquarters of Dow Chemical Co., at a cost of \$6.0 MM through Ontario Innovation Development Fund and in-house funding. As well, the Research Park built a LEED gold level-certified (Leadership in Energy and Environmental Design) building to house tenants formerly in the Bowman facility, to make room for BIC tenants and associated activities. The Research Park has invested about \$50 MM in sustainable building space, of which the BIC is a part.

The BIC also funds work at the nearby Lambton College to exploit its unique materials processing capabilities to develop new biomass treatment technologies for industrial clients.

The Bioindustrial Innovation Centre is a strong example of investment in technologies that will slowly replace the existing petrochemical industry of Lambton County, the site of the first commercial oil well in North America, with a new industry based on sustainable harvesting and processing of agricultural, forestry and industrial biomass residues and byproducts.

Sincerely,



John J. Kabel, M.A.Sc.
Pilot Plant & Commercialization Manager