(CASE STUDY)

Lystek

Southgate Organic Materials Recovery Centre Delivers Innovation and Sustainability

ABOUT

The Southgate Organics Materials Recovery Center (OMRC) offers a sustainable and reliable management option for Utilities in Ontario looking to establish a secure management program prioritizing resource recovery.

CHALLENGES

- Limited options for beneficial use of biosolids, particularly in winter or wet weather conditions for nearby towns and larger municipalities in the Greater Toronto Area and Golden Horseshoe Region
- Farms in the region transitioning from mixed animal and cropping operations to cash cropping, losing sources of nutrients and organic matter (manure)

SOLUTION

Lystek initiated development of the Southgate Organic Materials Recovery Centre (OMRC) in 2012. Designed, built, owned and operated by Lystek, the OMRC provides these benefits:

- A sustainable outlet for municipalities and residual generators to ensure beneficial use for biosolids
- Significant storage volumes on-site to provide a secure option for year-round biosolids and organics management
- Reliable and scalable technology to easily meet peak period demands with no process down time
- Production of a high-quality fertilizer product, providing a source of organic matter and cost-effective nutrients for local farmers

RESULT

- Creation of 25-30 full-time jobs for the community of Southgate to staff the OMRC and operate the LysteGro fertilizer program
- Produced and sold more than 1,300,000 m^3 of LysteGro fertilizer produced from biosolids and organic residuals.
- Application of LysteGro to more than 100,000 ac of local farmland
- More than 30 municipal and private generators serviced

Southgate Organic Materials Recovery Centre (OMRC) Dundalk, ON

Southgate wanted to become an environmental leader by embracing green technologies and innovative, sustainable organics management solutions.

KEY METRICS

Lystek OMRC Annual Capacity: 150,000 tonnes

Lystek THP Module Size: 3 x LY10 (4.0 dry tonnes / hr)

Lystek THP Processing Footprint: 3,800 sq ft.

Feedstock: Digested and undigested Municipal biosolids, anaerobically digested organic waste products, organic-based liquid materials and processed food-grade wastes

Project Delivery Model: Design, Build, Own, Operate

Commissioned: 2013

Prior to the year 2000, the Town of Dundalk, now the Township of Southgate, purchased approximately 150 acres of land on the edge of town, immediately adjacent to the Municipality's own sewage lagoons. The Town had the vision to create an Eco Park in this area with supporting infrastructure to help diversify the local economy and attract new green businesses to the area.

In 2010, Lystek was scaling up its patented thermal hydrolysis technology (Lystek THP) after demonstrations at the City of Guelph's WWTP. The company was evaluating the need for biosolids processing and management solutions across Ontario and saw the perfect fit between the Southgate Eco Park, the proximity to utilities needing biosolids management solutions, and a receptive agricultural community with depleted soils.

In 2011 Lystek purchased a lot in the Eco Parkway, and after extensive community engagement and environmental review by the Ministry of the Environment, Lystek was given approval to move forward with construction of the OMRC in October 2012. The OMRC was constructed with the capacity to accept 150,000 wet tonnes of third-party biosolids and organic residuals between 1% and 35% solids. Upon reception, the material is conveyed to one of three Lystek THP reactors, where it is converted to LysteGro, a fertilizer regulated under the Federal Fertilizers Act by the Canadian Food Inspection Agency. The facility can store approximately 95,000 m^3 of fertilizer over the winter months, until it is hauled and subsurface injected to local farms. The OMRC also features a QA/QC and research and development laboratory where both incoming feedstock and the final product, LysteGro, is continually analyzed and sent to third-party laboratories to ensure compliance with regulatory guidelines.

Like many proposals for biosolids management facilities, this OMRC faced some community opposition during Further, this regional facility has resulted in notable economic benefits for the host municipality and local businesses. "The OMRC has had a very positive impact on our community," confirms former Mayor, Brian Milne.

Since the Southgate OMRC became operational in 2013, the regional facility has grown to provide biosolids management and resource recovery services for over 30 generators across Southern and Central Ontario. For municipalities with objectives of beneficial use for their organic residuals, winter can be challenging with limited options due to wet and/or snow covered ground, and inadequate storage space. The OMRC is able to accept residuals year round, store the fertilizer over the winter months, and land apply from spring to fall.

A major success has been the development of a strong regional market for the liquid fertilizer product, which is regulated under the Federal Fertilizers Act by the Canadian Food Inspection Agency (CFIA). Since the OMRC opened, over 1,300,000 m^3 of fertilizer has been successfully produced, managed, and sold. Growing demand for this biosolids-based fertilizer has resulted in product prices increasing 300%. This has also led to farmers adopting innovative practices, such as variable rate application, strategic placement of the product relative to the planted seed, and side dressing into established corn, which all maximize product value and enhance nutrient use and agro-environmental stewardship.

About Lystek

Lystek International, is the leading provider of advanced, thermal hydrolysis solutions in North America, servicing over 60 Utilities globally. Lystek is a full-service company offering design-build and technology supply and installation services, worry-free regional processing solutions, and comprehensive **LysteGro** sales and management services. **Lystek THP®** is proven across a range of small, medium, and large communities. We work with public and private sector clients to enhance operations, reduce GHG emissions, and recover valuable nutrients and carbon from biosolids and organic feedstocks through the production of increased renewable biogas with **LysteMize®** and **LysteGro®** Class A quality biosolids fertilizers.

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