



Bioreactor

HISTORY

In 1980, faced with the ever-increasing cost of waste disposal and the lack of a landfill site, a few forward-thinking people in the Sorel-Tracy area set out on a quest to find a waste-management solution. Their investigation soon took them across Europe in search of recycling and reclamation methods. A technology based on a bioreactor to produce compost from municipal waste was recognized immediately as a cutting-edge solution and led to the creation of Conporec. The funding required to set up the new plant was made possible by a contract to supply services to most of the municipalities in the Bas-Richelieu regional county municipality. The Conporec plant went into operation in 1993.

With the application of this technology—of which Conporec has sole ownership (patented in several countries)—the Company made a contractual commitment not to dispose of more than 30% of the waste in a landfill site; it would recover or reclaim fully 70% of it. Today, after 10 years of operation, the plant is still reaching its **target 70% reclamation rate** and produces commercial-grade compost as a reclaimed product.

As with all Organization for Economic Cooperation and Development (OECD) nations, Canada—and, by extension Québec—have reclamation targets that require them to achieve 65% diversion from landfill by 2008. To date, the Bas-Richelieu region is the only one to have reached—and even exceeded—that target, thanks to the use of Conporec's technology.

AREAS OF ACTIVITY

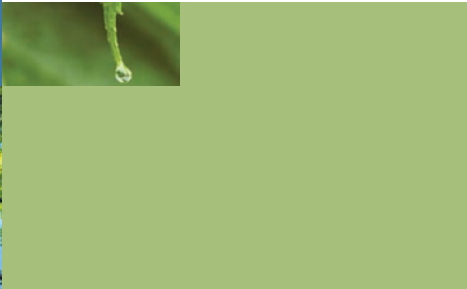
Based on its vision of transforming waste materials into true resources, Conporec has used the results of its research and development activities to adapt and improve its process over the past 10 years.

Conporec holds all rights to the process and is an expert in this field. Given its cost-effectiveness, the process is a serious competitor in the field of integrated waste management. As a result, the Company is able to provide comprehensive solutions to communities that are concerned about sustainable development. It is the only solution currently on the market that can process and convert large volumes of household wastes into a reclaimed product. The Company's plants have a minimum capacity of approximately 10,000 tonnes/year; however, the technology has no set limits in terms of maximum capacity.

Regardless of the business model and type of partnership with the public, Conporec can build and operate such plants anywhere in the world.

MIXED SOLID WASTE COMPOSTING TECHNOLOGY

The **bioreactor** is the key element of the Conporec process. Waste materials are kept in the bioreactor for three days to ensure homogeneity. The organic matter is subjected to a semi-continuous accelerated composting process. Unlike other composting technologies, the Conporec process does not grind, shred or crush the waste materials; this makes it



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possible to recover the recyclable materials and to improve the quality of the compost obtained.

The organic matter is separated from the non-organic matter mechanically. The former is then transported to the **maturation building** where it is placed in windrows. Forced aeration and regular turning of the windrows enable the compost to reach the degree of maturation and to acquire the physicochemical properties required for marketing.

The non-organic matter is transported to a **sorting area** where the recyclable products (metals and construction/demolition materials) are recovered.

The Conporec process is entirely aerobic and does not produce any biogases. It can also be used in any processes involving CO₂-transaction credits under the Kyoto protocol. Conporec's approach makes it possible to comply with the 4R-D (reduce, re-use, recycle, reclaim, then dispose) philosophy.

POSSIBLE APPLICATIONS OF THE TECHNOLOGY

Compositing of putrescible matter is one of the challenges currently facing public authorities. All OECD countries will have to apply such techniques in order to reach their reclamation targets. The Conporec approach guarantees success and provides residents with a flexible user and eco-friendly way of managing their waste materials responsibly.

The Conporec technology combines remarkable performance in terms of reclamation levels and cost-effectiveness and the result is a marketable reclaimed product. This approach

to integrated waste management and reclamation by composting can be applied in any regional community that is concerned about sustainable development and is seeking to manage its waste responsibly.

Conporec's process is flexible; it can be adapted to a one-, two-(recyclable/other wastes) or three-stream (putrescible) collection method, and even to a dry/wet collection method. Regardless of the method adopted by a community, the Conporec technology reclaims the organic matter effectively and systematically, even if the waste products were not properly sorted at the source

The composting process also allows for the reclamation of several types of organic waste from the industrial/commercial/institutional sector, including municipal and industrial sludge.

