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Your Business Abroad

UBC technology draws phosphorus from raw sewage

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The old Yorkshire saying “where there’s muck, there’s brass” has been given a green twist by a Vancouver company that sells a technique to extract pure phosphorus from waste water.

The process employed by **Ostara Nutrient Recovery Technologies Inc.** was developed by the University of British Columbia’s civil engineering department in the late 1990s. The team used “a bacteria farm” to remove nutrients in raw sewage, leaving phosphorus as a byproduct. The mineral is essential to agricultural fertilizers, and with world stocks in decline, the push to find other sources is necessary and profitable.

President Phillip Abrary, who launched Ostara and commercialized the technology, credits the City of Edmonton for “taking the risk” to work with the company on its initial pilot project to test the viability of the technology in 2006. But it was Clean Water Services, a Portland, Ore.-based water resource management utility, that in June of 2009 opened the world’s first commercial plant using the nutrient recovery system. The interest in Ostara stemmed from a policy by Clean Water Services to be on the lookout for new technologies that address emerging economic and environmental concerns.

Mr. Abrary said the commercial attraction of the United States, over Ostara’s home country, was scale, and added that his approach is similar to many small Canadian companies looking to expand.

“The U.S. is just 10 times bigger than we are in Canada. If you have limited resources and you need a market, the U.S. is an amazing market to do business. It’s homogeneous, with the same language and similar laws from state to state.

“It is so north-south. Canada is so big that there are a lot of places in the U.S. that are closer than other Canadian cities. That’s why our first projects are in the U.S.”

Kristian Knibutat, the national leader of international deals practice at PricewaterhouseCoopers, said an increasing number of Canadian companies have been looking to expand beyond even the United States, in particular to emerging markets in Asia. This, he explained, was largely a result of the continuing stagnation of the U.S. economy.

“A lot of Canadian companies are sitting tight in the current economic climate,” Mr. Knibutat said. “There are

always going to be exceptions to that, like Ostara. If you have a disruptive technology (that unexpectedly displaces an established one), you can make a significant growth play because you are replacing something already in the market, or no one else occupies that particular market space."

The United States is a leader in embracing new technologies and Ostara, he said, has benefited. There are 20 pilot tests under way in the United States, and the latest commercial plant, in York, Pa., is due to open on Thursday. Another commercial plant in West Virginia opened in May.

Bill Gaffi, Clean Water's general manager, said 100 per cent of wastewater from an area serving 500,000 people is run through its Durham Advanced Wastewater Treatment Plant. He said 90 per cent of the phosphorus was removed for use in fertilizer – around 225,000 kilograms – in the first year.

What's more, the company has welcomed visitors from Moscow, South Korea, Australia, and elsewhere in the United States, all wanting to see Ostara's technology at work. "I've had visitors every few days," Mr. Gaffi said.

"The technology has ratcheted up the interest. It allows us to remove the phosphorus by a biological process rather than technological process ... A lot of our visitors are interested in reducing phosphorus levels in streams, and also avoiding future shortages."

No commercial plant currently exists in Canada, but Edmonton has expressed interest and the Greater Vancouver Regional District is carrying out a pilot test at a facility in Richmond. Ostara is also planning to extend into Europe, with three pilot projects in England and the Netherlands, and another in Asia.

"It's interesting in Europe. It's not just about treating wastewater and creating sustainable fertilizer, it's about finding a way to not waste their phosphorus, a precious resource," Mr. Abrary said. "It's all about a limited land mass, lots of people, and old cities and infrastructure."

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