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# Success Stories - A Rising Star

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## Ostara Nutrient Recovery Technologies Inc.

### Vancouver, British Columbia

*New water treatment technology addresses global environmental and food production challenges while saving municipalities millions of dollars*

When a company experiences 50 to 100% growth annually for several years running, calling it a success story may seem an understatement—but that's exactly what Ostara Nutrient Recovery Technologies Inc. has become.

Ostara designs, builds and sells water treatment systems that remove phosphorus and nitrogen from municipal wastewater and transform them into a revenue-generating, environmentally friendly fertilizer known as Crystal Green®—a process that is good for the planet, good for agriculture and saves money for municipalities.

## Backing a winner

There would be no Ostara without the brainpower, research and hard work of its founders. But it's also true to say there might be no Ostara without the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP), which provided funding for an initial market analysis that concluded the company was viable.

Ostara's core technology was created at the University of British Columbia (UBC). Its founders licensed and developed the technology, marketed as the Pearl® Nutrient Recovery Process, from UBC in 2005, obtaining an exclusive worldwide license. In 2006, after the market analysis had been completed, Ostara operated its first successful pilot plant in Edmonton. Within two years, the company scaled up the technology by a factor of 100, and constructed and commissioned a full-scale demonstration reactor in 2007 at Edmonton's wastewater treatment plant.

Building on this success, Ostara then built nutrient recovery facilities at three U.S. municipalities. The firm will also build the first Canadian commercial plant in Saskatoon and will start construction on its first project in London, UK in spring 2012.

The global market for Ostara holds enormous potential because the beneficiaries of its technology are numerous. The world environment is one, since excess phosphorus and nitrogen released into waterways from wastewater streams and from fertilizer leaching and runoff can slowly kill lakes and rivers by promoting algae growth that depletes the water's oxygen supply. Cities stand to benefit too: municipalities save money in treatment and maintenance costs, and receive revenue from the sale of Crystal Green which helps pay back the capital cost of the facility within 3-5 years.

Also, despite the harm it can do lakes and rivers, phosphorus is a critical resource for the world's food supply. Crystal Green is made from the only renewable source of this nutrient—wastewater—and because of its slow-release properties, all nutrients remain in the soil, eliminating runoff.

## Milestones

Ostara has benefited from no fewer than seven NRC-IRAP projects over the years; there have been two market analyses, three research and development (R&D) projects, one Youth project and a trade mission to China. At least three Industrial Technology Advisors (ITAs) have worked with Ostara through the years.

"The initial investing round, which attracted nearly $2 million in seed financing, was done nearly entirely on the back of the original market study funded by NRC-IRAP."

Ahren Britton
co-founder, chief technology officer, Ostara Nutrient Recovery Technologies Inc.

Co-founder and chief technology officer Ahren Britton says while all seven projects have been extremely beneficial to the firm's development, three have made the biggest difference. The company wouldn't exist today without the original market study, he points out. And the first NRC-IRAP-funded R&D project, which studied the Edmonton demonstration reactor, was significant because, as he says, "we didn't have a product until that project was completed—so it goes to the core of the company."


**Ostara's Pearl Nutrient Recovery Process transforms municipal wastewater into Crystal Green.**

Finally, the firm's latest NRC-IRAP project has resulted in four separate patent applications, including the technology that is now driving the majority of sales: the Pearl 2000 reactor, a scaled-up version of the firm's original Pearl 500.

"A significant amount of our project revenue is based on the technology that was developed during that NRC-IRAP project," says Britton.

## NRC-IRAP's involvement pays off

Since NRC-IRAP's initial involvement with Ostara:

- Revenues have grown 50-100% every year since 2009;
- The company has hired 34 people;
- The firm has become, and remains, the strongest player in its market;
- It has attracted private investors, drawing nearly $2 million in seed financing with its first NRC-IRAP-funded market study.

Peter Fetissoff, the ITA for Ostara since 2006, agrees that NRC-IRAP has played a vital role in its success. "NRC-IRAP has provided financial assistance, market and technical knowledge, exposure and project structure."

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