Industry Canada's Atlantic newsletter

Fall 2005

Atlanticonnection

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Future Fuel

Wind turbines capture energy at the Atlantic Wind Test Site in North Cape, PEI.

PEI wind turbine photos courtesy of Hydrogenics Corporation.

Environmentally-friendly printing process

Industry Canada Industrie Canada

Canada

Claire LePage

A Message from the Regional Executive Director

Welcome to the second issue of *Atlantic Connection* – Industry Canada's Atlantic newsletter.

We launched the newsletter last spring in order to introduce ourselves, and to show how Atlantic Canadians and businesses throughout the region are benefiting every day from what we do.

Our goal in telling the stories of the people with whom we work is to create an awareness of the many programs and services we deliver, and how they come together to achieve the Government of Canada's goal of a better quality of life for Canadians.

As it turns out, we have many more to tell.

In this issue you'll once again find stories on how Industry Canada has touched Atlantic Canadians, from helping a well-loved local community radio station back onto the air, to contributing to the growth of an impressive young Newfoundland technology company, to helping position Canada as a world leader in energy research and development through a cutting-edge project in PEI.

From the simple bounds of earth to the more sublime mysteries of space, by investing in local people, ideas and innovations, the work Industry Canada does in Atlantic Canada filters past maritime borders to benefit the rest of the nation and in many cases, the world beyond.

I hope you'll enjoy these stories as much as the first collection, and help us once again celebrate the success our department shares with Atlantic Canadians.

Claire LePage
Regional Executive Director
Industry Canada

Future Fuel

Skyrocketing oil prices, uncertain fossil fuel reserves, and the push to ratify the Kyoto Accord has intensified the global search for sustainable, renewable sources of energy.

With the highest electricity rates of any province or territory in Canada, Prince Edward Island relies almost completely on imported energy from fossil fuels, so it's no surprise that the PEI government has committed to finding their own alternative.

This spring, PEI joined up with Industry Canada's Technology Partnerships Canada program and other like-minded organizations to bring home what could well be the ideal solution, in the form of the world's first Wind-Hydrogen Village—a project they hope will show the globe how wind energy and hydrogen technologies can work together to produce clean and sustainable energy.

PEI's interest in wind energy started back in 1980 with the establishment of the Atlantic Wind Test Site. Located at the tip of a remote wind-blown cliff on PEI's North Cape, Canada's only national wind energy laboratory has since become the country's premier research and development centre for wind energy.

The site supplies the province with 0.5% of its total electricity, but the province wants a better return. But the wind doesn't blow on demand. So how do you harness it? Clearly some help was in order.

Enter Hydrogenics Corporation and their hydrogen fuel cell technology.

"This is what hydrogen does that's wonderful. You can be making hydrogen when the wind is blowing and then use that power when the wind has stopped," says Jane Dalziel, Director of Communications and Government Relations for Hydrogenics Corporation.

When hydrogen energy is released, the only emission is water. Combine that with the zero-emission wind power used to create it, and what you have is the ultimate clean, renewable energy solution.

Once running, the Wind-Hydrogen Village project will provide supplementary power to the North Cape Interpretive Centre Complex, the Atlantic Wind Test Site (AWTS), plus other homes and buildings in the North Cape area. Also as part of the initiative, the newly installed hydrogen systems will provide refueling for hydrogen-powered vehicles, for example a shuttle bus running between Charlottetown and AWTS.

Not only will the project help wean PEI from its dependence on fossil fuels, it's also expected to boost tourism, economic development and environmental sustainability, and position PEI as a leader in wind hydrogen research and development.

Add the PEI project to the Hydrogen Village in Toronto and the Hydrogen Highway in BC, Dalziel says, and Canada now has initiatives across the country that position it as a world leader.

"We're telling the world we're doing it, not just talking about it," she says.

www.hydrogenics.com
www.tpc-ptc.ic.gc.ca

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- **Canadian Intellectual Property Office**
- **Competition Bureau**
- **Industry Sector**
- **Information Highway Applications Branch**
- **Measurement Canada**
- **Office of the Superintendent of Bankruptcy Canada**
- **Operations Sector**
- **Spectrum, Information Technologies and Telecommunications**
- **Technology Partnerships Canada**

Portfolio Partners

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- **Business Development Bank of Canada**
- **Canadian Space Agency**
- **Canadian Tourism Commission**
- **Competition Tribunal**
- **Copyright Board Canada**
- **Enterprise Cape Breton Corporation**
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Newfoundland Nexus

A manager of a forest fire protection agency takes a wireless pen out of his pocket, scans an electronic user badge and a series of electronic tags attached to various pieces of fire fighting equipment, and creates a digital inventory report of a new shipping activity. At the same time, in another province, a supervisor managing equipment for an out of control forest fire gets a wireless report of the event and a notification that the requested backup equipment is on route.

"It really is a little bit of a wonder technology... it definitely has all the potential to become the norm."
– Mark Gillingham

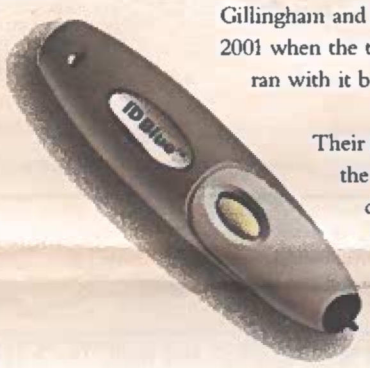
Sound like an advanced, futuristic system? No. It is just one of the uses for a rapidly emerging technology.

Say hello to RFID, or radio frequency identification – the hottest thing in data capture technology, poised to replace its lowly cousin, the ubiquitous bar code, in many applications globally. It's not a household term yet, but it's a several billion dollar industry within the global technology sector and growing fast.

"The great thing about RFID technology is that it is truly pervasive among pretty much any type of business you can think of," says Cathexis Innovations Vice President of Sales, Mark Gillingham. "It really is a little bit of a wonder technology when it comes to its applications, and it definitely has all the potential to become the norm."

Unlike the static bar code, an RFID tag is comprised of an antenna and a tiny computer chip that can store significant amounts of information that is read via radio waves with an RFID scanner (reader/writer). It's the ultimate, mobile tracking device.

Gillingham and his three partners started their Newfoundland RFID company in 2001 when the technology was still under the radar. They recognized its potential and ran with it before many of their competitors even got into the market.



Their focus to date has been on mobile technologies – scanners that read the tags and the accompanying software that allows global computing devices like Pocket PCs, laptops and Smartphones to send the data collected from the tags to backend IT systems. Their flagship product, IDBlue™, is the World's first Bluetooth® enabled RFID pen reader.

Cathexis won the 2005 Young Entrepreneur Award for Best Newfoundland Business; earned the prestigious Microsoft Gold Certified Partner title; their products are being used in 15 countries; and they're the only technology company with a presence at Memorial University's INCO Innovation Centre opening this year.

Not bad for four young Engineering graduates with no previous business experience.

Photo: Courtesy Cathexis.

The Cathexis team. Average age: 28. From left to right: Steve Taylor, President; Colin Power, VP Product Development; Mark Gillingham, VP Sales; Mark Simms, CTO.

Now just a few courses away from his MBA, Gillingham admits that learning the business end of things wasn't easy. But they pulled from role models and mentors both in Newfoundland and abroad, and found help with elements like contacts and marketing from business development organizations like Industry Canada and the Genesis Centre.

"The best of Cathexis is yet to come" he says, "and we're going to have a pretty bright future."

www.cathexis.com

C@Ptivated by Science

When Holly DeRoche joined the fundraising drive for a Community Access Program (C@P) site in Afton, PEI, she didn't know in five years she'd be searching for ancient waterways on Mars or predicting natural disasters in the wake of the Southeast Asian tsunami.

"It was really cool seeing how much work we did to monitor the environment and help protect people."
– Holly DeRoche

Recently, DeRoche completed a four-month placement at the Canadian Space Agency in Montreal through her co-op program at UPEI, where she studies Physics and Engineering. Five years off and on with the C@P site helped her gain the fundamental computer skills she needed to run with the exciting opportunity.

Photo: Courtesy Holly DeRoche

Holly Deroche and her Talisman Energy colleagues look at geological charts during DeRoche's co-op work term in Aberdeen, Scotland last summer.

Afton's C@P site got off the ground with two computers. Five years later there are eight, along with digital cameras, copiers, and an abundance of computer software. It's the only place to access high-speed internet in the community 20 minutes from Charlottetown.

Without a computer at home, the site became an educational experience for DeRoche. After all, how would she teach people to build webpages or navigate advanced computer programs if she wasn't well versed in the language herself?

At the Space Agency, she helped design a computer program that transforms radio wave data into an image of the Earth's structure. Scientists could soon use the technology to determine if Mars has water below its surface, establishing whether or not the planet could actually sustain living organisms.

DeRoche says work at the Space Agency isn't always out of this world, however. After the tsunami she used similar technology to create before and after imaging that could be used to help predict future natural disasters. She also worked on a project monitoring the changing structure of Labrador ice due to global warming.

"It was really cool seeing how much work we did to monitor the environment and help protect people," DeRoche says. "We've developed so many things other people are using. I saw them working on the second part of the Canada Arm, which they just used in space."

DeRoche spent the summer at the National Research Council's Atomic Energy of Canada site in Chalk River, Ontario, working with the Neutron Beam Program, but plans to go back to help out at the Afton C@P site while attending UPEI again this fall. She still says "we" when talking about the centre, and despite the visions of Mars and melting polar ice caps in her head, the Afton site is still close to her heart.

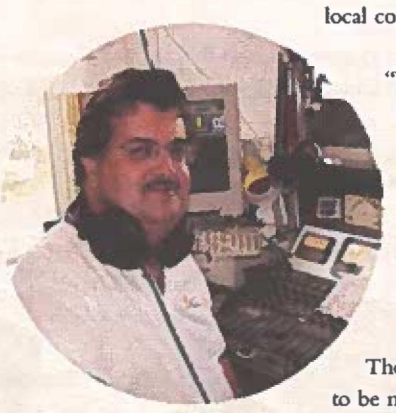
www.space.gc.ca **www.nrc-cnrc.gc.ca**

The Canadian Space Agency and National Research Council Canada are Industry Canada Portfolio Partners, and the Community Access Program is delivered by Industry Canada on a national level.

Radiant Seaside

When an ice storm in the winter of 2004 tore down Seaside-FM's broadcast tower, not only the 30 dedicated volunteers at the not-for-profit radio station were disappointed.

Many Halifax area residents had became hooked on Eastern Passage radio station, CFEP 94.7, since its sporadic beginnings in 1998 broadcasting information about local community events notices. Their public clearly wanted more.



Seaside-FM Station Manager Wayne Harrett.

"We started getting letters and signed petitions and phone calls from people asking us to stay on the air year round," says Wayne Harrett, Station Manager. "We play easy listening music and all our hosts are live. We cater to a mature adult audience and our listeners love that we remind them of old fashioned radio."

In August 2002 they officially went on the air as a full-time community-based radio station.

Then the ice storm hit. Finding a location for a new tower turned out to be more daunting than expected, and that's when they contacted Industry Canada's Spectrum Management Office in Dartmouth.

The Spectrum office handles the technical end of pretty much any communications device that uses radio frequencies to transmit over the air. They coordinate anything from television stations to cellular phones to simple two-way radio devices like walkie-talkies.

When the folks at Seaside-FM spoke with Richard Arnold, they had found their man. Arnold, a veteran of the Spectrum office, had developed on behalf of the office a database of towers in Nova Scotia, something Industry Canada doesn't normally do at a national level.

"It was the case that we had the background and knowledge to help them," says Arnold.

In short order, he was able to find an appropriate tower and, through the database, make contact with the company that owned it to see if they were interested in assisting Seaside FM in securing a new site for their antenna.

Soon, Seaside FM was making use of the cellular tower, which is within eyesight of the station. With the added power of a brand new antenna, the station has greatly increased its coverage area and has no plans to be silenced again any time soon.

"People still want us to expand our area," Harrett says, "Because we're the only station playing this kind of music in this market."

Since 2002, the station has acquired 1.5% of the Halifax Regional Municipality audience.

Seaside-FM has been nominated twice for the East Coast Radio Station of the Year, and although the CBC won it both times, Harrett is nevertheless honoured to be nominated along with such a big organization.

"Not bad for a little 50-watt station," he adds.

www.seasidefm.com

The Technology of Teaching

Distance education used to mean a tedious process of students and teachers shuttling papers back and forth through the mail. The internet has since spawned e-learning—a huge, sophisticated industry that offers higher education to anyone with internet access and the desire to learn, regardless of where they live.

In an effort to reach geographically dispersed Atlantic francophone learners, Industry Canada and its partners have joined forces with area colleges and universities to develop distance training courses that target the French-speaking community.

A pilot program announced in April with the Université de Moncton (U de M), for example, will offer 25 new distance training courses in French, in priority niches such as business administration, law, information management and forestry

Photos: Courtesy of GTA.

GTA Director Joanne Roy (seated centre in purple jacket), with all but four of her e-learning tea

Founded in 1963, U de M has long played a prominent role in training Atlantic Canada's Acadian and Francophone communities. In 1999 U de M increased its focus on distance education, investing $5.7 million to equip its three campuses with the infrastructure needed to integrate technology in learning and teaching, funded in part by the Dion Plan for Official Languages.

Pedagogical Project Manager Anne Daigle, (right), and Dany Benoit, Senior Project Manager (left), going over a final project on a telemeeting with one of their clients.

That's when the Groupe des technologies de l'apprentissage (GTA - formerly IDITAE) was born. With a mandate of self-sufficiency, the group of 18 multi-disciplinary professional development experts housed at the university has become one of the biggest e-learning teams in North American universities and is making an international e-learning splash.

"It's an innovative business model within the university, and it's working very well," says Joanne Roy, the group's Managing Director, of their unusual relationship in which the group pays for its own salaries and specialized equipment through the products and services they develop and sell to the private and public sectors here and in other provinces.

The first goal of the e-learning group's programs is to reach the Acadian population in Atlantic Canada, but they're also delving beyond those boundaries – the international francophone market is virtually untapped.

A short law program they developed with two universities in France, for example, yielded phenomenal results. Seventy-eight students per year across thirteen countries including Switzerland, Haiti and Morocco are enrolled, gaining access to top professors in three universities.

"The main point of this is to be able to reach the learner wherever they are," says Roy. "They can access the content, have an excellent learning experience, meet all of their objectives, and have certification at the end of it. To be able to access it at a distance is a real advantage."

The GTA recently won the Conseil économique du Nouveau-Brunswick's 2005 Aboiteaux Award - Research and Development for a workflow enhancement tool they are developing as a result of their own research into e-learning... something they aim to commercialize and offer to the e-learning industry. "This is a great initiative," says Roy. "I think that in Atlantic Canada we need to think more outside the box as we're doing here... to showcase this more, and realise our potential."

clic.umoncton.ca