

The rise of green technology

Canada is taking a leadership role as global companies look towards better environmental practices



The environment and climate change are growing global concerns, accompanied by warnings from scientists and activists and encouraging a major shift in corporate and social practices. Green technology has emerged as a strong force in the fight to regulate climate change and build globally based, environmentally sustainable solutions. Organizations are using IT to help reduce and track their carbon emissions and develop and support business models with a green focus.

Europe and Asia have recognized the value of alternative energy sources, and Canadian companies have recently made significant progress on green

research and development. Results so far include innovative methods of waste management and clean electricity production. Canadian firms are operating internationally using patented technologies to produce energy in a modern, sustainable and effective manner.

Information and Communication Technology (ICT) businesses lead by example through the promotion of corporate-sponsored environmental initiatives that are producing positive effects. Paperless transactions, virtual conferencing, motion sensitive lighting and intelligent thermostat control are employed with greater frequency in offices across the country. Not only have

these initiatives resulted in lower environmental impact but also in cost savings. Those organizations that preach innovation as a competitive advantage are leading the charge towards a shift in global practices.

Eco-conscious organizations are attracting employees who believe in environmental protection and are often flexible, adaptable and resourceful in ways that benefit the business.

The role technology plays in the green movement continues to gain momentum as the corporate world heeds scientists' predictions of the risk of increasing environmental degradation.



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Where Next Happens

Mother Nature calling

MTS Allstream and the greening of business



John MacDonald,
President, Enterprise
Solutions division

There are no simple solutions to the challenges of climate change—but transforming business communication practices may be one of the most effective steps.

Over the past several years, MTS Allstream has been named one of the 50 Best Corporate Citizens in Canada by *Corporate Knights* magazine and has earned the title of Canada's most environmentally responsible company in the telecommunications sector from *Report on Business* magazine. In December 2007, *Maclean's* magazine ranked MTS Allstream as one of the country's top two socially responsible telecommunications companies.

In 1992, long before climate change became a universally recognizable phrase, MTS Allstream adopted an environmental code of practice. That early commitment eventually evolved into the organization's Environmental Management System (EMS), a framework for positive change that's been widely recognized for its comprehensive effectiveness.

Nominated for Manitoba's Sustainable Development Award of Excellence several years in succession and recognized by the Federal Minister of Natural Resources for participation in the Office of Energy Efficiency's 'Energy Innovators' initiative to help reduce greenhouse gas emissions, the company's work in the environmental arena has been a key to being recognized as a top corporate citizen.

"There's a real commitment to the fundamentals here," says John MacDonald, President, Enterprise Solutions division. "Our entire organization is very committed, and we have challenged ourselves with the task of renewing and redoubling all our efforts in this area." For example, fuel efficiency has increased by as much as 10 per cent through education that supports more fuel-efficient driving habits on the job.



"While trying to accomplish even more internally," says MacDonald, "MTS Allstream is also committed to helping our customers achieve their own environmental goals."

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While virtual workplaces, meetings and conferences are not new, a convergence of public concern about climate change and technological innovation has recently sparked tremendous uptake of these telecom solutions. Today, a growing number of companies recognize that reducing employee travel and commuting times while increasing productivity is a key factor in streamlining business and environmental goals.

"It's about being plugged into people in all the different offices of a corporate structure. The ability to communicate clearly and quickly in real time is going to make the need for extensive travel less necessary. That will obvi-

ously have a very positive impact on the environment," MacDonald says.

As well as being cost effective and good for the environment, adoption of MTS Allstream's teleworking and videoconferencing technologies provides a significant business advantage.

"It can be more efficient, meaning you get to certain tasks or decisions earlier, because you don't have to arrange travel," says MacDonald. "Through live meetings and online collaboration, people can get together instantly to create, revise, update and exchange information. And they can also see who is available and what the best way to reach them is – that reduces time spent in trying to find required experts or decision-makers."

As we move forward, a deeper understanding of how business activities impact the environment will be a key concern for any organization. MTS Allstream is devoted to continuing its efforts to its own environmental goals, and to developing innovative telecommunications solutions that help their customers to lower their environmental footprint, now and for years to come.



IT'S ABOUT

INNOVATIVE TELECOM SOLUTIONS THAT HELP THE ENVIRONMENT

Businesses today are faced with growing pressure to conduct their business in a more environmentally responsible manner. Increasingly, companies are realizing the importance of reducing their carbon footprint and understanding that going green just makes good business sense. That's why Allstream is committed to helping organizations achieve their environmental goals.

With a full suite of solutions that help businesses reduce employee travel and commuting times while increasing productivity, you can decrease your carbon footprint and make better use of your existing resources. Our Unified Communications portfolio and IT consulting services help you implement and utilize collaboration and mobility tools that help you achieve these objectives.

Employing an experienced and dedicated workforce, powerful technology, national presence and global connectivity, our world-class suite of telecom services and solutions help you be more environmentally responsible, increase productivity and lower costs.

Thousands of companies have already benefited from the Allstream difference. Call us today to find out how our solutions can help your business.



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Value from waste

Plasco Energy Group treats waste as an asset



Rod Bryden, President and CEO of Plasco Energy Group

In urban communities across Canada, the United States and Western Europe municipal solid waste is produced at the rate of three quarters of a ton per person, per year. About one third of that comes directly from a person's home and is picked-up at the curb-side, while more than half of it comes from institutions like hospitals, malls and office buildings, and industrial plants. Finally, the remaining 17 per cent is a result of construction and demolition waste.

The choices for managing municipal solid waste have been very limited: separation of recyclable components, composting or anaerobic digestion of separated organics, incineration, or land-fill of the remainder.

Recycling continues to be a desirable priority. However, separation of organics and incineration or burying the remainder is problematic both environmentally and economically.

A growing number of provinces in Canada now require that waste be treated as an asset of the community and managed to its best value. "To do this," explains Rod Bryden, President and CEO of Plasco Energy Group, a private Canadian waste conversion and energy generation company, "we must adhere to three important steps." First, waste must be managed in a way that eliminates as much negative environmental impact on land, water, and air as possible. Second, recycling must be maximized to the limits of feasibility. And third, the net economic value from residual waste must be maximized.

The third choice

"With the current global focus on greenhouse gas emissions and air contamination," says Bryden, "a meaningful economic and environmental value is to convert all solids to valuable prod-

ucts and all gases to clean energy to replace energy currently being created from fossil fuels."

For decades, scientists around the globe have been faced with the challenge of trying to create consistent and useful products from an unpredictable and variable waste stream. Since 1986, Plasco has operated research facilities in Canada and Spain attempting to do just that. In 2007, it opened its first 100-tonnes-per-day commercial scale demonstration plant in Ottawa. With a focus on transforming waste into saleable solid products, clean water and energy, while producing no emissions or contamination to water or land, Plasco has now developed the third choice in waste management—the only conversion system of its kind in the world.

How it works

The Plasco Conversion System is capable of breaking all waste down to its original, natural elements. "Everything that comes out of our system is transformed into usable products with commercial value," he says. "There is no waste or negative environmental implication."

The results are 30 per cent clean water, three to five per cent sulfur (fertilizer), five to 10 per cent chlorine (commercial salt) and 15 per cent vitrified solids (construction aggregate), with the rest made up of gas. The gas that is produced can be shipped off-site and blended into a natural gas pipeline or used onsite to operate internal combustion engines to make power. "For each ton of waste we get the power used in the conversion process and about 1.4 megawatts of saleable power—enough to run a household in Canada for 55 days," says Bryden.

A good neighbour

Their "unwelcome neighbour" characteristics usually result in locations far away from population centres, which therefore require long-distance transportation of waste and equally long-distance return transportation of any usable energy produced by the incinerator or recovered from the methane from landfills.

Unlike the current waste management options, Plasco is a neighbour that communities will welcome, says Bryden. The Plasco Conversion System operates in architecturally attractive plants with no stack, no emissions except engine exhaust, no noise and low truck traffic.

With Plasco's system, waste will be dealt with where it is created and electricity can be generated where it is needed. "Many communities are anxious to deal with their own waste and to conserve their valuable energy. We give them the opportunity to do so," says Bryden.

VALUE OUTPUTS FROM EACH TON OF WASTE PROCESSED:



ELECTRICITY
- 1.4MWh



POTABLE QUALITY WATER
- 300L



COMMERCIAL SALT
- 5 to 10kg



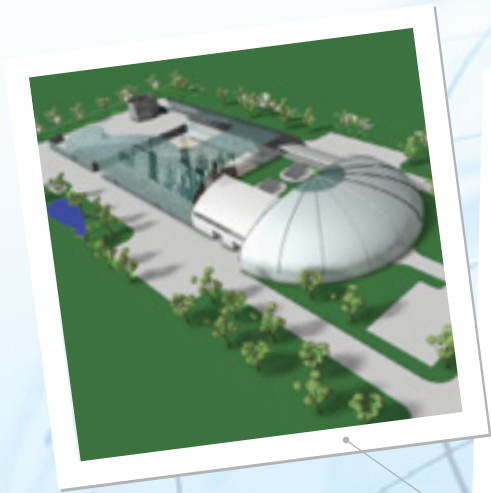
CONSTRUCTION AGGREGATE - 150kg



SULFUR AGRICULTURAL FERTILIZER - 5kg



Is garbage going to waste?



Los Angeles
200
Tonnes Per Day

Ottawa
100
Tonnes Per Day

Some things are very difficult to recycle. That's where we come in.

We convert more than 99% of post-recycled garbage into green energy and other useful products while substantially eliminating the impact of garbage on our environment.

We recycle leftover garbage so it won't end up in landfills or incinerators.

PlascoEnergy completes your community's recycling options so you don't let garbage go to waste.

plascoenergygroup.com

PLASCO ENERGY GROUP 1000 Innovation Drive, Suite 400 Ottawa, ON, Canada K2K 3E7 Tel. 613.591.9438

Your roof: wanted for business

You might not have considered your roof space to be an investment asset, but a few modifications can bring you a new, shimmering blue finish along with pay cheques in the mailbox for the next 25 years as you sell the electricity generated by your very own solar power system. This may sound like a futuristic notion, but you might be surprised to learn that this is already possible in some parts of the world, and even more surprised to learn it is already possible in Ontario. Of course, you do have to purchase the solar power system, but with the Ontario Power Authority's new guaranteed feed-in tariff for solar electricity, this technology is already becoming economic on commercial buildings, giving you the opportunity to assist with climate change in a significant way.

Starting in late 2008, a company called Sustainable Energy Technologies (TSX-V: STG) will be rolling out a complete solution for installing solar power on buildings. The solution offers competitive advantages that make solar



Solar panels used at the University of Toronto

power systems scalable, "enabling you to get more power in a wider range of circumstances, even in less-than-perfect conditions," says Aryn Strand, Business Development Manager. "This technology makes solar power universal and easy to install. We envision it as a future main-



stream building product that you can pick up at Home Depot," says Strand.

In 2006, Sustainable Energy Technologies launched its first commercial product in Spain where government incentives have accelerated the adoption of renewable energy. Greece is also currently undergoing a major shift toward the generation and use of renewable energy and Sustainable Energy Technologies is a first mover in this market as well.

Sustainable Energy Technologies is a leader in developing and manufacturing power conversion products for the rapidly growing renewable energy industry. "Our patented technologies are used to connect energy sources (e.g. solar power, wind power or fuel cells) to electricity grids, making it possible to sell power to utility companies or use it in your own home or business," explains Strand. The building power solution is the latest development for the company, with distribution plans in all major markets around the world.

One of the primary reasons why solar energy is such a valuable source

of clean electricity is because it provides the most amount of usable energy during the grid's peak times. "On a hot sunny afternoon when everyone has their air conditioner cranked up the grid needs to supply the maximum amount of power," Strand says. "That's when solar power systems are producing at their highest capacity." It also brings electricity generation to the point of use, cutting down the need to expand expensive transmission and distribution systems.

"As an active player in the world's leading markets we are currently preparing for major growth here in Canada," says Strand. The Government of Ontario's feed-in tariff legislation is expected to jump start the solar power industry in that province. "We would love to see more provinces get on-board," says Strand. "There is no reason not to have solar panels on the rooftop of every building."

Sustainable Energy Technologies is a publicly traded company with common shares listed on the TSX Venture exchange under the symbol STG.V.

Greening from within

Bell Canada works towards a low-carbon future



Stéphane Boisvert,
President,
Bell Enterprise Group

In an attempt to respond to the world's overwhelming concern for issues impacting the environment, including global warming, Bell has developed and deployed a Climate Protection Strategy which aims to engage employees, customers, suppliers, governments and NGOs in efforts to achieve what they call a low-carbon future. This

holistic strategy aims to "green" Bell's internal practices, but as Marc Duchesne, Bell's Director of Corporate Responsibility and Environment, says, "The benefits really kick in when we can affect change within our customers.

"Regardless of how much CO₂ we emit within our own operations—which of course we are focused on reducing—the big picture is how ICT can deliver improved energy efficiencies through either travel substitution or virtualization solutions," says Duchesne.

An example of this can be seen through Bell's *Smart Meeting Guide*. The program was developed in 2007 in an attempt to reduce Bell's dependency on business travel and encourage more energy-efficient means of meeting. "We realized that this guide not only worked internally but also made a whole lot of sense for our customers," says Duchesne. To promote alternate communications technologies including audio, video and Web conferencing, Bell launched the *Smart Meeting Guide* publicly through its Conferencing Division. It also developed an online calculator which allows customers to see how much greenhouse gas emissions are eliminated when using conferencing solutions from Bell as opposed to conducting in-person meetings.

"We offer a full breadth of ICT solutions and professional services to help customers better understand and

improve their usage of technology and reduce greenhouse gas emissions," says Stéphane Boisvert, President, Bell Enterprise Group.

A great example of how Bell provides technology and services that help reduce environmental impact is energy conservation in residences and business. The Energy Conservation Solution allows businesses and individuals to control their own lights, outlets, thermostats, appliances, hot water tanks and air conditioning. Load controllers are installed for each electrical device and a mini-computer gives clients virtual access to each device via their computer, BlackBerry/mobile phone or Interactive Voice Response (IVR) system. "In the summer this system allows you to turn up your thermostat a few degrees during peak-times, saving you money and energy, and then turn it down again an hour before you return home from work," explains Boisvert.

For Bell, there is great importance in leading by example. "We live and breathe our commitment to building a more sustainable future," explains Boisvert. An example of Bell's internal environmental commitment is the Everyday Kyoto awareness campaign, which was launched in 2004 and engages employees in the fight against climate change through a series of 23 activities employees can commit to at work, at home and while commuting.

Also, Bell is strongly committed to building better workplaces, explains Boisvert. Three Bell campuses—Montreal, Toronto and Calgary—are currently being built as LEED certified buildings with state-of-the-art collaborative work environments and ICT applications throughout.

"Our primary focus is on sustainable communities," says Duchesne. "In the communities we serve, Bell is the enabler of smart buildings, intelligent transport systems, travel minimizing

and virtual office solutions, as well as energy optimization services."

Not only does Bell offer technologies to help improve corporate and consumer sustainability, but it also offers end-of-life take-back programs which have already diverted more than 492,058 mobile phones from landfill and recycled more than 80 metric tons of batteries and accessories. As part of its Mobile Take-back program, Bell donates \$1 for each unit collected to help WWF-Canada fight climate change.

Finally, the partnership between Bell and WWF-Canada also aims to better document the potential of telecom-



communications products and services to reduce energy consumption.

"The real challenge is to change the attitudes, behaviours, policies and investments to ensure we maximize the opportunities ICT offers for a low-carbon economy," explains Julia Langer, Director of the Global Threats Program with WWF-Canada.

