

It May be Easy Being 'GREEN' After all

Canada's first 'green' research network/Internet hosted in Calgary

BY T.L. DUDAR

A progressive 'green' research initiative, the GreenStar Network Project, with support from local, provincial and national partners began implementing the first 'green' powered Internet network. The GreenStar Network Project will enable compact-sized data centres to access alternative 'clean' energy sources and will facilitate the research necessary to identify the viability of future green-powered networks by collecting data measurements on the reduction of greenhouse gas (GHS) emissions in comparison to those that arise from existing information and technology (ICT) services.

As part of this network, the installation of a Calgary-based solar-powered node began early this year and will soon provide researchers with a database centre powered by the rays of the sun – that's right, the sun. To date, research teams within universities use large centralized data processing systems and networks to host their information. Such centres consume vast amounts of energy to supply power to facilitate the exchange and retention of information across the network and also to maintain the equipment at optimal operational temperatures. This project may provide an alternative as to how energy is supplied for data centres.

The Alastair Ross Technology Centre (ARTC) was chosen as the location host for the solar-powered data centre. A natural fit for the project, the ARTC building – located in the Research Park at the University of Calgary – has operated as an office, laboratory and social space for Calgary's growing and incubating technology sector for the past 20 years. It has avidly supported numerous environmental research projects such as hosting a wind turbine that tested inverter technology and houses the Alberta EcoRoof. It has implemented environmental initiatives that support the daily operations of the facility like retrofitting its grounds with xeriscaping (naturalization) – using plants and materials that are indigenous to the area, uses all natural environmentally-safe cleaning products, installed environmentally-safe carpeting, and has received both the BOMA "Go Green" certification and "The Office Building of the Year" awards. The ARTC hosts a multitude of technology, innovation and research companies and it is no surprise that it also supports its clients by providing them with the opportunity to partner on some research projects such as the GreenStar Network Project.

This project is part of a pan-Canadian initiative, an alliance of Canadian IT companies, universities and government agencies, funded by CANARIE, Canada's ultra high-speed advanced research and innovation network, and supported

by Cybera, an Alberta-based, not-for-profit organization that spurs and supports innovation that will advance the economic well-being of all Albertans. The project is building a pan-Canadian Internet network with distributed datacenter nodes providing energy to the network via natural alternative energy sources such as wind and solar power.

"Using Mother Nature as an energy source has its challenges. There are many factors that need consideration such as inclement weather conditions and securing reliable backup resources," says Patrick Mann, Cybera's chief technology officer. "Cybera is excited to help advance research in this area and we look forward to helping deliver better results and more effective green-powered products."

"We are embarking upon a new frontier for powering IT with alternative energy resources. Cybera is proud to be a part of the GreenStar Network initiative through our support of the installation, configuration and maintenance of the Calgary solar-powered node. Contributing to projects such as this, where we are developing sustainable and energy-smart infrastructure, has the potential to provide a multitude of benefits for all Canadians," says Robin Winsor, Cybera president and CEO.

"We can never know the potential of certain initiatives until we develop, create and implement it," says Dave MacKillop, Manager, ARTC. "At ARTC, it is about supporting the development of projects to manage and minimize our environmental impact by providing resources for research projects. We are happy to partner with companies or research teams that may need a building to host their environmental initiatives."

The solar-node cabinet will be fitted on the rooftop of the ARTC where visitors will notice the compact unit, no larger than the size of a standard refrigerator, and a display model of the solar panel that supports it. The unit will be supported by eight solar panels each producing over 230 watts of energy, located on an upper northern roof to maximize its exposure to the sun. The node officially launches in June and those interested in viewing the first solar-powered data processing network node are welcome to visit the ARTC. As summer approaches, may the sun shine on those solar panels!

For more information on the Calgary solar-powered database node, please contact Jana Makar, Cybera, at jana.makar@cybera.ca or 403.210.5489.

For more information on the resources available at the ARTC, please contact David MacKillop, Manager, ARTC, at dmackillop@calgarytechnologies.com or 403.284.6422.