

Special

Sustainable development

With global opportunities for clean technologies growing exponentially, Canadian companies, financiers, entrepreneurs, post-secondary institutions and more are tapping into the emerging cleantech market.

Clean technologies

As the world moves toward a more sustainable future, global business opportunities for clean technologies are growing exponentially. Canadian companies are setting the pace for innovation, and entrepreneurs, financiers and governments are increasingly recognizing the economic growth and diversification potential.

While commodity suppliers previously competed purely on price and quantity, there is an increasing premium for the smart, efficient consumption of resources. With more diverse natural resources than any other nation on the planet, Canada is uniquely positioned to help shape an emerging dialogue around resource efficiency, diversifying our manufacturing mix and foreign markets penetration in the process.

"The global cleantech market stands at an astonishing \$4 trillion," says Vicky Sharpe, president and CEO of Sustainable Development Technology Canada (SDTC). "Canada is poised to take its share of that market. Today, more than ever, we must continue to support and grow our globally competitive companies."

Nicholas Sonntag, president of Westport HD Europe and Asia, has an informed viewpoint on the international potential for Canada's clean technologies. Westport has been active in China for about 10 years, with its Cummins Westport joint venture, which sold about 3,000 natural gas engines to the city of Beijing prior to the Olympics.

After a lengthy research process, Westport partnered with Weichai Power, the largest

BY THE NUMBERS

Cleantech delivers jobs and economic growth
Canada's cleantech industry currently employs

44,000 people.

That number could shoot up to 75,000 by 2015 and 126,000 by 2020.

The cleantech industry showed remarkable resilience during the 2007 to 2009 recession, with average revenue growth of

45 per cent

over the two-year period.

The world's cleantech industry is pegged at

\$4 trillion

per year.

96 per cent

of Canada's cleantech companies view themselves as competing globally.

Source: Analytica 2011 Report on the Cleantech Industry

ONLINE?

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engine manufacturer in China, in a joint venture that also includes a Hong Kong company. Their focus is the design and manufacture of natural gas engines, using Westport's innovative and proprietary high-pressure direct injection technology. With these technologies, says Mr. Sonntag, natural gas engines operate just like diesel in terms of power and efficiency.

In a second joint venture in China, Westport manufactures liquid natural gas cryogenic tanks. "Liquid natural gas is minus 170 degrees Celsius, so it must be contained in a cryogenic vessel, which is like a massive thermos. Our joint venture manufactures tanks for our trucks in China, and also for our partners in the United States and Canada, through the Kenworth and Peterbilt brands sold in North America and Australia."

With more than 1.3 billion people, the demand for clean technology in China is vast. "The Chinese are very focused on identifying technologies that clean their air and water and reduce their emissions; everything that contaminates the environments and ultimately reduces their economic potential or affects the health of their people," says Mr. Sonntag.

Tapping into this emerging opportunity requires knowledge capital as well as technology. Canada's post-secondary institutions also have an important role to play, in both the innovation and adoption of clean technologies. While institutions such as the University of Waterloo are renowned for creating tech innovators, others such as Royal Roads University in Victoria, are

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Technology Canada

increasingly being recognized for graduating students with the knowledge required to leverage the potential of clean technologies across the industrial spectrum.

"In our view, sustainability is a social science issue as well as a technological issue," says Royal Roads University VP Academic and Provost Steve Grundy. "In many cases, sustainable technologies already exist, but are not widely applied."

From its launch in 1995, therefore, Royal Roads has ingrained sustainability into all of its programs, he says. "Many universities now offer a sustainable MBA program. But we approached it from the opposite direction – from the beginning, we felt it was essential to embed sustainability into all our programs, including our Bachelor of Commerce and MBA programs."

As a result, he says, by the time students graduate, "they can see the bigger picture – they understand sustainability."

Internationally, Royal Roads is also leading the way with its Master of Arts in Environment and Management in partnership with Tianjin University of Technology, China's first environmental management program at the graduate level.

ABOUT SDTC

Sustainable Development Technology Canada (SDTC) is an arm's-length not-for-profit corporation, created by the Government of Canada, that has received \$1.05 billion as part of the government's commitment to create a healthy environment and a high quality of life for all Canadians. SDTC operates two funds aimed at the development

and demonstration of innovative technological solutions. The \$590-million SD Tech Fund™ supports projects that address climate change, air quality, clean water and clean soil. The \$500-million NextGen Biofuels Fund™ supports the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation renewable fuels. SDTC operates as a not-for-profit corporation and has been working with the public and private sectors, including industry, academia, non-governmental organizations (NGOs), the financial community and all levels of government, to achieve this mandate.



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TECHNOLOGY CANADA™

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COMMUNITY DEVELOPMENT

Building sustainable cities

Economic pressures as well as social and environmental aspirations are encouraging cities to adopt innovative technologies and business models in an effort to enhance sustainability.

Cities are large consumers of goods and services, but they are often accused of draining and wasting resources from the regions on which they depend for survival. Is it possible to arrest or even reverse that process, while at the same time making cities

more accommodating to the people who live in them? The answer is yes, according to one of Canada's leading researchers in sustainable community development.

"We have the knowledge and we have the science," says Dr. Ann Dale, research chair, Sustainable Development at Royal Roads University in British Columbia. "We also know that sustainable cities are something the public wants. What we now need is long-term political and social

leadership, as well as integrated planning linked to policy- and decision-making."

She adds that there is no shortage of initiatives and good ideas; what cities need most is a political and social environment that allows them to flourish.

Advances are being made. We have the technology to make new buildings carbon neutral or even restorative, thanks in part to initiatives like Toronto's Green Roof Bylaw, a policy change that
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Clean technologies are creating a greener, more competitive Canadian economy.



BRINGING CLEAN TECHNOLOGIES TO MARKET



SDTC is open for Statements of Interest from February 22nd to April 18th, 2012.



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