

## Clean-tech emerging as Canada's fastest-growing industry, outlier in economy

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Canada's clean-tech industry is growing faster than every other major sector of the economy according to a new report surveying companies from across the country, and MPs on both sides of the House say it's time for new federal policies to promote the industry at home and abroad.

The Canadian clean-tech sector grew by nine per cent in 2012 according to a recently released report by Analytica Advisors, an Ottawa-based consulting firm that has tracked the industry's growth since 2008. Clean-tech companies directly employed 41,000 people in Canada and generated \$11.3-billion in revenues in 2012, the baseline year for Analytica's 2014 report.

The findings are based on a survey of more than 700 primarily small and medium-sized companies, and show that the sector is an outlier in the Canadian economy. Industry Canada's own statistics for 2011-2012 show that the mining, oil and gas sector grew by a mere 0.3 per cent, compared to the clean-tech sector's nine per cent growth rate. The construction industry grew by 3.9 per cent over the same time period, while manufacturing grew by 1.9 per cent. The clean-tech industry has also emerged as a leading investor in research and development. In 2012, the industry invested \$1.14-billion in R&D, compared to the aerospace sector's \$1.33-billion in R&D investment in the same year. The sector's employment figures are beginning to rival those of the aerospace and oil and gas sectors.

"If you look at the sum of the investments and revenues of all these companies, we have a significant industry today. Given the growth in investments today, it will continue to be significant and can grow into an industry comparable in size to other significant industries, like aerospace for example," said Analytica president Céline Bak, whose firm advises federal departments and agencies on finance, trade and innovation policy.

Clean-tech exports are also more diversified than Canada's overall exports. More than half of the industry's revenues came from exports in 2012, and 42 per cent of all exports were to non-U.S. markets. Only 26 per cent of economy-wide Canadian exports went to non-U.S. markets in 2012, in comparison.

Despite the sector's robust growth, Ms. Bak said that companies continue to face a "perennial Canadian challenge" in convincing the domestic market to adopt clean technologies.

"Demand is always a little sluggish. It takes longer to sell in the Canadian marketplace than it does in other parts of the world," she said. "Not only are they low-carbon, bio-based, green, low energy. These are hardcore business solutions that happen to be really strong in terms of their environmental impacts, in many cases with a lower price."

Analytica projects that Canada's clean-tech sector could grow into a \$32-billion industry over the next decade, directly employing up to 120,000 by 2022, while a 2013 report by the Pembina Institute estimates that Canadian clean-tech could grow into a \$60-billion industry by 2020 with favourable federal policy measures to encourage deployment of clean technologies.

Findings call for new federal strategy, say MPs

Despite the recent findings by Analytica, clean-tech continues to be an overlooked industry compared to other Canadian industries. The federal government has invested millions in advertising and public relations campaigns to promote the

oilsands internationally in recent years, and the House Natural Resources Committee recently completed a study into “the cross-Canada benefits of developing the oil and gas industry.”

Other sectors have also been on the receiving end of much greater federal attention. The federal government has gone out of its way to adopt many of the recommendations included in former cabinet minister David Emerson’s 2012 aerospace industry review and OpenText chairman Tom Jenkins’ 2013 report on leveraging Canadian defence procurement.

Members of Parliament on both sides of the House told The Hill Times that the latest findings by Analytica confirm that Canada has a valuable economic asset in the burgeoning clean-tech sector, but are divided over what the government should be doing to make sure that the industry continues to grow and remain internationally competitive. Conservative MP Jay Aspin (Nipissing-Timiskaming, Ont.), chair of the all-party Clean-tech Caucus, said that the findings confirm that the sector has become a reliable source of economic growth in Canada.

“The message is, it’s a tremendous high-growth industry, not only in Canada but throughout the world,” Mr. Aspin said in an inter-view with The Hill Times. “You’re getting growth, productivity, and innovation. It has all of the ingredients of what our government espouses to be doing. It fits.”

Mr. Aspin, who previously worked as a trade adviser and participated in FedNor trade missions to Scandinavia before becoming a Member of Parliament, helped establish the University of Nipissing School of Business’ Bio-mass Innovation Centre in 2009.

He agreed that the government should have a clean-tech strategy, not unlike strategies in place for the aerospace and fossil fuel sectors, but he doesn’t support the government using regulations or procurement to encourage clean-tech deployment.

“Not so much regulation, [and] the industry is growing so rapidly, I look at procurement policies as a forced market. This is an open market,” said Mr. Aspin, adding that the government should instead focus on policies that promote financing and trade op-portunities for the sector.

The federal government has been financing the development and demonstration of clean technologies in Canada since 2002 through Sustainable Development Technology Canada. Over the last decade the federally funded non-profit has invested nearly \$600-million into 246 projects aimed at reducing other industries’ pollution and waste. SDTC’s funding has leveraged an additional \$1.6-billion in industry funding for clean-tech projects.

“[SDTC] has done a heck of a job in providing capital for infant [companies] in the clean technology space to take hold and get started,” said Mr. Aspin. “Should we be focusing on it as a priority sector in the future? I think the answer is yes. ... At some point in time, we’re going to hit a tipping point where this will be a hot sector that people will be aware of and it will be a priority sector.”

Green Party leader Elizabeth May (Saanich-Gulf Islands, B.C.), also a member of the all-party Clean-tech Caucus, praised the work that SDTC has done to help Canadian companies reach commercialization, but said the federal government should be doing more to encourage clean-tech deployment through regulations, market instruments, and tax incentives.

“There’s no real recognition on the part of the Harper Conservatives that this should be a priority area for us to invest time and energy and policy instruments to get into a really significant growth position. We’re just treading water,” she told The Hill Times. “One of the best things we could do is bring in a carbon price that’s economy-wide. That will absolutely stimulate measures that are dedicated to energy saving and conservation.”

## Firms urge government to use procurement power

Hydrogenics is one of the many companies to participate in the Analytica survey. The Mississauga-based company has been developing hydrogen fuel cells and generators for vehicles and large-scale energy storage for major utilities. The company currently exports 90 per cent of its output, with 80 per cent of its exports going to non-U.S. markets in Europe and Asia.

Daryl Wilson, Hydrogenics' president and CEO, said that proving the feasibility of his company's technology has been one of the biggest obstacles that it's managed to overcome in recent years.

"The world wasn't ready for us, they didn't need us," Mr. Wilson told The Hill Times. "What's happened is the clean energy revolution has progressed now to the point where there's a strongly felt need for technology like ours, especially in areas where the renewable energy penetration is high." One of Hydrogenics' biggest customers is Germany, where wind and solar energy accounts for more than 10 per cent of the country's power generation.

Mr. Wilson said that his company has benefited from the support of SDTC, as well as Ontario's Ministry of Economic Development and Innovation. To date, Hydrogenics has received more than \$4-million in financing for two projects through SDTC. Still, he said, being able to demonstrate his company's technology on a large scale remains a challenge.

"A critical hurdle for a company like ours is to have reference sites where we can show other international customers that we're already doing what we do in a very successful way, at home. That's been a challenge for Canadian companies. One catalyst for that is government procurement," said Mr. Wilson.

Not all companies profiled by Analytica have succeeded in securing government support, however. One company, Vancouver-based Fenix Energy, has given up on pursuing government partnerships and is working with commercial landholder Cadillac Fairview to retrofit existing building stock with its patented geothermal heating and cooling system.

The company's trademarked Network Energy System enables buildings to store heat deep underground and share it with neighbouring buildings throughout urban centres. The system has the potential to reduce energy consumption in commercial-scale buildings by 85 per cent, said Fenix president and CEO Edward Smith.

"We asked the B.C. government for a pilot project to prove this, we asked the city of Vancouver for a pilot project. No one was interested," said Mr. Smith. "Once we've proven this with Cadillac Fairview, we'll probably just be concentrating on the private sector."

The company has not received funding through SDTC, but has used the federal Scientific Research and Experimental Development tax credit and Accelerated Capital Cost Allowance. Mr. Smith said that the company is now looking to U.S. investors for financing.

"We'll move to New York City tomorrow and have this be an American company if we get investment there. If that's happening to me, I bet that's happening to a whole bunch of other people too," he said.

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