

# Opinion: It's high time for Canada to invest in developing green technology



ALAN SHEPARD, SPECIAL TO MONTREAL GAZETTE

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Staff work to assemble solar panels at the Celestica Green Technology Centre of Excellence in Toronto, June 16, 2011. *AARON LYNETT / NATIONAL POST FILES*

In light of overwhelming scientific evidence and the recent COP21 agreements, green, clean tech is clearly the way forward — for our species and, therefore, our economy.

This is an economic watershed moment for our country. And right now our low dollar, largely due to our economy's overweighting in oil, prices our know-how attractively to boost international sales in a Canadian brave green wave.

But we have some ground to make up. Clean Energy Canada reports that the global market for clean energy technology and services was valued at \$790 billion Cdn in 2014, and is expected to reach \$1.8 trillion by 2022. Germany, China, the U.S. and others are already reaping benefits.

Canada's 2014 share? A mere \$7 billion — far below our G7 economy's weight. Since 2005, we have dropped from 14th to 19th in clean-tech exports. Our share of this rapidly growing pie is shrinking.

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The thing is, we already possess the right resources for this shift — world-class researchers and institutions, an entrepreneurial culture, an educated workforce. All three will attract talent and fuel this new economic direction.

In pledging \$300 million a year on clean tech innovation, Prime Minister Justin Trudeau is embracing the zeitgeist. Ideas abound for the right formula: updating infrastructures, pricing carbon and increasing funding for Sustainable Development Technology Canada (SDTC) will all be part of the plan.

But how can we invest smartly in each stage of innovation to realize such a major economic overhaul?

First, support basic and applied research. Solar, wind and hydro will all be important parts of the clean-energy mix, and making them cheaper is a priority. But green

technology will be a huge industry with countless applications. And right now, it's still wide open.

Synthetic biology, identified by the World Economic Forum as one of the top five emerging issues that will shape our future, is just one promising direction. At Concordia's Centre for Applied Synthetic Biology, the only one of its kind at a Canadian university, multi-disciplinary research is charting how we can turn toxic by-products from our pulp and paper industry into green biofuel.

Universities and colleges drive much of this technical research, but it's not the only kind we'll need. Psychology, the arts, and histories of community behaviour will inform our resilience and adaptation, too.

Second, support entrepreneurs. Good ideas can come from anywhere. Incubators, such as Concordia's District 3, bring innovators together. Then, mentors and networks steer students' and recent graduates' lightbulbs through a startup's crucial initial stages.

The guidance is there. The entrepreneurial culture that incentivizes bringing inventive solutions from lab to market? Not so much. Canada's clean tech accelerators, such as MaRS and Ecofuel, have investors ready to back promising business opportunities.

Challenge-driven innovation is one proven model. By collaborating with different industry and government players with an eye on outcomes, and by offering prizes at each stage of a start-up's development, an innovation challenge efficiently crowdsources expert knowledge to bring new solutions to market quickly. The success of XPRIZE in tackling everything from lunar landings to ocean exploration to carbon-emission transformation is impressive.

Third, support companies' scaling up. Trudeau's campaign pledge of \$100 million for organizations that foster clean technology firms, such as SDTC, is a good start. But the private sector needs to engage.

In 2014, Canadian venture capital firms invested \$1.9 billion in 379 startups. In the U.S., \$48.3-billion. More private and public funding for mid- to late-stage companies will slow the talent exodus to Silicon Valley and the U.S. acquisition of Canadian startups.

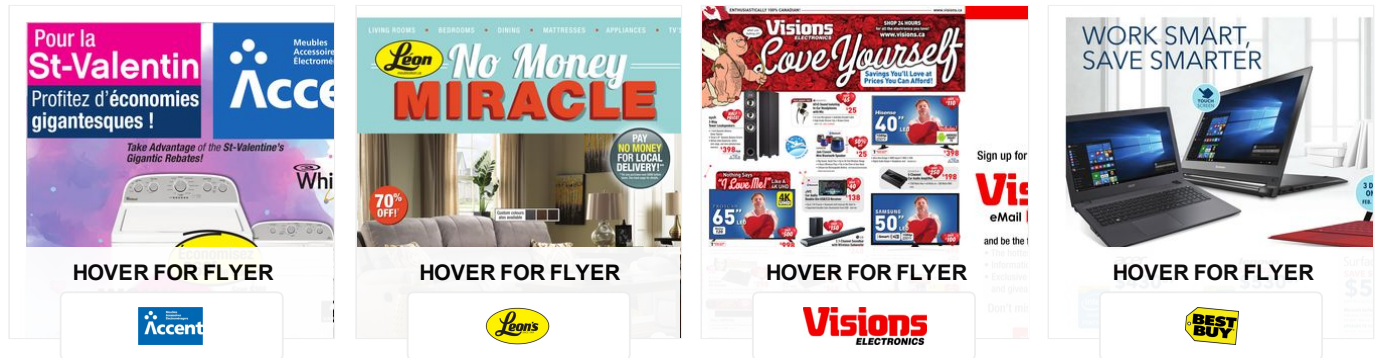
Tax credits for solar, wind and other clean-energy projects renewed by the U.S. Congress in December will cause more U.S. firms to enter the market. That legislation may help Canadian firms export, but as our dollar recovers, our advantage will evaporate. By strengthening Canadian innovation to stand on its own merits, we will make our economy more resilient.

Canada needs this green revolution. And with major private and public investment

now, we can do it.

*Alan Shepard is president of Concordia University.*

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Allsounds nice BUT Since 2006 I have researched and compiled a list of Green manufacturer around the world for Architects so they could design energy efficient buildings. Too expensive I was told. Why bother to use new technology as we could use the old ones without spending more time to familiarize ourselves with this new product.

Since then lightbulbs changed, solar panel development and usage changed, there is more wind turbines in use and research in alternate fuel has soared.

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