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No clean path to clean tech

A UVic business prof charts the bumpy road to market acceptance of clean technologies

Zietsma

by Peigi McGillivray

What's not to like about clean technology? Nearly all of us agree that we need clean, innovative alternatives and new ways of thinking to help us solve the world's climate change problems. And experts predict that countries that dominate in the clean tech sector will dominate in the world economy.

So it should be easy for entrepreneurs to bring clean technologies to market, right?

Not exactly, says Charlene Zietsma, a professor in the University of Victoria's Peter B. Gustavson School of Business. "To have their innovations accepted, entrepreneurs in the clean technology sector have to run a gauntlet of existing laws and regulations, powerful business interests, commitments to status quo technologies, and old habits and beliefs—forces that are very strong, and that create huge barriers for them."

For example, a BC entrepreneur with a device to conserve electricity may need to connect to the existing electricity grid. The provincial government has mandated that 50 per cent of new electricity demand be met through conservation by 2020, which should make it easier. However, to ensure the security of the grid, BC Hydro requires that new technology be proven elsewhere for three years before it can be attached to the grid.

"Clean technology entrepreneurs must not only be inventors and savvy business people," says Zietsma. "They also need to be politically astute to press for government policy changes, and skilled networkers to navigate the complex bureaucracies of utilities and government agencies."

Zietsma is an expert in social change and entrepreneurship. She has just completed the first year of a three-year project that combines these two research interests. "I'm trying to find out how clean technology can become established in a highly regulated world that is dominated by big players like governments and current energy providers, where well-established rules, technologies, attitudes and resources create barriers to change," says Zietsma.

Through in-depth interviews with more than 60 clean tech entrepreneurs in BC, Ontario and São Paulo, Brazil, Zietsma is finding out how they promote their technologies to others and how they form supportive networks to advance their products and services.

"I'd like to understand which strategies are most effective in attracting investors, and in changing industry conditions in favour of clean technology," she says.

Zietsma's project also analyzes 10 years of news media articles about clean technology, as well as field notes from industry conferences. The analysis will help Zietsma see what response has been to the different strategies entrepreneurs have used to advance their products and services.

Undergraduate and graduate students have been gathering data for the media survey, conducting interviews and recording notes at conferences. "Now it's time to dig into the data we've collected," she says.

The research helps UVic's young entrepreneurs succeed in the complex and fast-growing clean tech sector. "They need to think critically about the barriers they'll face when they launch new products and services," says Zietsma.

"The most rewarding part of this kind of research is that I can learn from the experience of so many entrepreneurs and bring that knowledge directly into the classroom—and feed it back to the entrepreneurs that are struggling to gain acceptance for their technologies."

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Clean technologies are products, services or processes that reduce negative ecological impacts and/or improve the productive and responsible use of natural resources.

The failure to adapt to climate change represents the highest global risk likely to affect humanity in the next decade, says the World Economic Forum. Clean tech entrepreneurs are needed to create products, services and processes to meet this challenge.

The global clean tech market is currently a $1-trillion opportunity that is expected to grow to $3 trillion by 2020. Canada's current share of the global clean tech market is $9 billion, or just under one per cent.

BC is one of the top clean tech research and development hubs in the world and is home to more than 1,000 clean tech companies.

UVic researchers were awarded more than $103 million in outside research grants and contracts in 2010/11—more than triple the amount achieved 10 years ago.

YouTube Meet Charlene Zietsma at *http://bit.ly/zietsma*