

# Refining real-time sustainability

SEPTEMBER 30, 2014



UBC has made significant measures to increase energy efficiency in its buildings, including upgrading lighting and heating and cooling systems.

**Photograph by:** Handout, Handout

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**BC Hydro's Power Smart Partner program works with some of B.C.'s largest organizations to implement energy efficient initiatives and create a culture of conservation. Over the next few months, the important work being accomplished by some of our partners will be featured in this space. The conversation will encompass innovation, challenges, and rewards.**

**This month, the focus is on how advanced educational institutions can make changes with incredibly long term benefits.**

**"The Advanced Education sector offers Power Smart a unique opportunity to work on specific ways to implement energy savings projects on campuses throughout B.C., and to help facilitate a 'living lab' learning environment to engage students, faculty, and staff on the subject of energy conservation," says Ron Mastromonaco, B.C. Hydro Senior Key Account Manager for the Advanced Education sector.**

**For a list of available Power Smart Partner offers and incentives, visit [bchydro.com/partners](http://bchydro.com/partners)**

Orion Henderson spent more than a decade working as an engineer in the pharmaceutical industry, but came to realize it wasn't his true calling in life.

"I wasn't going home and reading about pharmaceutical production, let's put it that way!" he says with a smile. "I was reading everything I could get my hands on about pollution and environmental issues and sustainability." During a 2002 road trip from Vancouver to Honduras, he saw a lot of slash and burn agriculture, and how energy poverty was affecting people; it cemented his commitment to getting involved in some aspect of sustainability.

He obtained a master's degree in environmental technology in order to better align his professional life and his personal beliefs, and started working at UBC in 2007. He now serves as the director of energy planning and innovation for energy and water services at the university.

Over the years, he has been involved in ambitious projects, such as UBC's EcoTrek initiative, which involved significant retrofits to major buildings on the Point Grey campus. The measures included changing out light bulbs and light fixtures to incorporate more energy efficient technology, and setting up closed loop heating and cooling systems to reduce energy loss. The success of the \$40 million dollar program provided compelling evidence for UBC to pursue other initiatives.

Now the university is implementing a climate action plan, involving a complete elimination of corporate greenhouse gases by 2050. The initial target is to reduce GHGs by 33% by the end of 2015.

Achieving the initial target involves three major projects: converting building heating from steam energy to hot water, which is more efficient; a renewable bioenergy facility which functions as a living laboratory; and optimizing the performance of individual buildings, to ensure they are as efficient as possible.

"It's not about trying to 'buy' our way to sustainability by throwing money at the issue," Henderson states candidly. "It's about smart business practices - reducing carbon and energy costs by bringing in incentives and grants."

He also points out that - relative to corporations - the university is uniquely positioned to take on projects with a far longer payback schedule. With UBC's control over both residential and institutional developments, Henderson says the campus serves as a test bed for sustainability.

Hugh Warren, chair of the Facilities Management Committee of the Canadian Association of University Business Officers, says there is constant pressure for institutions to reduce operating costs. Since maintenance and labour are relatively fixed expenses, utilities are an area where significant reductions in expense can be achieved.

"You have to be creative once the 'low-hanging fruit' - like lighting - is taken care of," Warren points out. "You have to explore alternative energy sources, heat recovery, and more efficient buildings."

He agrees that universities serve well as learning environments about energy efficiency. Retrofitted buildings can be incorporated directly into student research, allowing them to evaluate results, new technology, and even ways in which older technology can be improved - and potentially guiding students into career paths they may not have previously considered.

Warren says it is very important for universities to have staff dedicated to staying current on what is new in the world of energy efficiency, so that they can incorporate it in the way that would serve individual institutions best. He also believes financial incentives like the ones offered by BC Hydro to implement new measures and technologies would be valuable on a national scale.

Henderson says although direct measurements can show when energy efficiency projects are successful, it can be more difficult to quantify the impact of changes in behaviour. He says participation in the BC Hydro Workplace Conservation Awareness program is helping UBC quantify these impacts.

"I feel a personal satisfaction in engaging students, staff, and faculty in conversations around sustainable choices in transportation, waste disposal, and reducing consumption of energy and water," he explains. "It's about helping everyone realize we can have mutually beneficial goals."

Henderson believes there is a common misconception that individuals can't make a difference, but he says people have to change their thinking - as individuals, they can influence their own energy bills and also influence everyone they interact with. They can trigger significant ripple effects within a larger group.

It's a practice he's living by example every day.

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