



Green WIL: A Case Study of Scalable Solutions for Canada's Green Skills Gap

AT A GLANCE

PARTNERS: Queen's University

REGIONS: Kingston, Ontario; Canada-wide

INDUSTRIES: Green economy, including multiple industries

WIL TYPES: Industry projects, Bootcamp leading to certificate, Internships, Entrepreneurships

TYPE OF LEARNING: Curricular & Co-curricular

THEMES: Green Skills, Equity, Diversity, and Inclusion in Sustainability

SUMMARY: This case study explores how the Queen's University Venture Creation, Experiential Learning & Net Zero Training (QVENT) program addresses the green skills needs of Canadian employers through curricular and co-curricular WIL across diverse disciplines. QVENT bypassed the usual challenges of program creation by efficiently using cross-institution collaboration and existing resources, as well as external partnerships with leading green employers.



Context

Canada's clean economy shift will impact millions of jobs,¹ with estimates suggesting 13-20% will be jobs in occupations that don't yet exist.² Yet, many post-secondary graduates lack the green skills needed to apply their expertise in the clean economy. Outside of environmental science and sustainability-focused STEM programs, climate and sustainability content is largely absent from higher education curricula.³ Addressing this gap requires cross-institutional efforts to integrate green skills across all disciplines, equipping more students for green careers.

1 Tobin, Steven, et al. "Sustainable Jobs for Economic Growth." Future Skills Centre, September 2024.

2 Guldemann, Colin and Naomi Powell. "Green Collar Jobs: The Skills Revolution Canada Needs to Reach Net Zero." RBC Economics and Thought Leadership, February 2022.

3 Onyido, Tochukwu Ben C., et al. "Embedding Sustainability in University Work Experience Placements: A De Montfort University Model." Education + Training 64, no. 8/9 (January 2022): 1037-59.

To meet this challenge, BHER partnered with the Smith School of Business to develop the **Queen's University Venture Creation, Experiential Learning & Net Zero Training (QVENT)** program. This cross-institutional, multidisciplinary initiative equips students with the skills, knowledge, and networks to lead Canada's transition to a net-zero economy.

The QVENT program embeds green skills training and professional networking into existing programs at Queen's University. Rather than launching a new standalone initiative, the project leveraged existing resources across multiple departments to scale a wide range of curricular and co-curricular work-integrated learning (WIL) opportunities, including industry projects and internships.

This efficient, collaborative model successfully helped students from diverse disciplines—business, arts and science, humanities, and applied sciences—develop foundational green skills. As a result, QVENT strengthened local talent pipelines while providing employers, including Canada's climate leaders, with work-ready graduates equipped for the net-zero transition.



STUDENT EXPERIENCE

BHER's partnership with QVENT delivered over 2,000 WILs across four different streams in two years (2023-24).

STREAM 1

Students tackle real-world challenges through course-embedded green industry projects submitted by industry or community partners.

STREAM 2

Students complete a 20-hour bootcamp and earn a Certificate in Leading Sustainable Change for a Net-Zero Economy.

STREAM 3

Students are supported in launching their own ventures focused on green business solutions.

STREAM 4

Students complete green skills-focused internships.



VALUE OF THE MODEL

1 QVENT STRENGTHENS GREEN TALENT PIPELINES BY DEVELOPING A DIVERSE TALENT POOL AND BY CONNECTING STUDENTS AND EMPLOYERS WITH SIMILAR COMMITMENTS TO SUSTAINABILITY.

The QVENT program provides green companies with a gender-balanced, diverse, and inter-disciplinary talent pool. Of the pilot cohort of 1,498 students,

- 51% identified as **women or non-binary**
- 44% identified as **visible minorities**
- 20% identified as **international students**

Additionally, QVENT's WIL opportunities also create a talent pool of students who have self-selected to take real action in the green economy. Employers who want to attract this kind of talent are able to connect with students early in their career paths and align their academic learning with company goals, while raising their corporate brand awareness among this student population.



Our relationship with Queen's has ramped up significantly in the last three years. Queen's is a priority because of their mining program, but we've had great success hiring students from all disciplines.
– HR leader at Teck

Examples include Teck Resources Ltd, a BHER member and one of Canada's largest mining companies, and GHGSat, a globally recognized Canadian company providing high-resolution satellite data on emissions to governments, investors, and regulators. Both employers provide significant WIL opportunities to QVENT students because they see a strong return on investment from the program.



For us, it's crucial to maintain a set of new skills coming along. Students should teach us new tricks and get the value that they deserve out of an internship like this. It's not hard to sell the value of internships to the executive team, who are very aware that we could be getting our next big idea from an intern from Queen's."
– HR leader at GHGSat

2 | QVENT EMPOWERS POST-SECONDARY LEADERS TO BREAK DOWN SILOS AND ADVANCE CLIMATE LITERACY AND GREEN SKILLS THROUGH CROSS-INSTITUTIONAL COLLABORATION.

A [2024 report](#) by BHER for the Future Skills Centre found that post-secondary institutions face three major challenges when trying to integrate green skills: a lack of agility, a lack of resources, and a need to customize solutions for each school.

The QVENT program overcomes these challenges by empowering leaders across Queen's to build green skills-related opportunities on the back of existing program infrastructure. The development and delivery of QVENT's four streams are the result of the joint effort of several offices across campus, including:

- The **Experiential Learning Team** and the **Centre for Entrepreneurship, Innovation and Social Impact (CEISI)** at the Smith School of Business
- The **Experiential Learning Hub**, Student Affairs
- The **Dunin-Deshpande Queen's Innovation Centre (DDQIC)** at the Office of the Provost and Vice-Principal (Academic)
- The **Experiential Learning & Programming Team** at the Faculty of Arts and Science
- The **Faculty of Engineering and Applied Science**

QVENT empowers staff, senior administrators, and faculty leaders passionate and knowledgeable about green skills to help design, execute, and champion the program. It also has mechanisms in place to ensure sustainable resourcing, with staff dedicated to coordinating and managing this level of collaboration and to supporting industry partners.

The program also folds previously existing cross-institutional efforts into its stream offerings. For example, existing courses with applied learning components are leveraged for Stream 1. By supporting existing faculty commitments to applied learning, the program was able to garner a high level of faculty engagement.



3 | QVENT BOOSTS QUEEN'S STUDENTS' GREEN SKILLS, PREPARING THEM FOR CANADA'S GREEN WORKFORCE.

The term “green skills” refers to the knowledge, abilities, and technical and human skills required to advance sustainable outcomes and transition to a low-carbon economy. Climate literacy is a crucial foundation for green skills training, and both technical and human skills are required to design, produce, and manage low-carbon projects.

Preliminary survey data suggests that the QVENT program is preparing students with all of the components of green skills, from human skills to foundational sustainability knowledge. In a survey of 176 QVENT pilot student.

- **77%** said they had improved somewhat or a lot in **problem-solving skills**, while **75%** reported improvement in **communication skills**.
- **79%** agreed with the statement: **“participating in a work-integrated learning opportunity helped me better prepare for the workforce.”**

Students also strengthened their ability to prepare for and seize opportunities related to climate and sustainability problems.

- **81%** felt that they had improved somewhat or a lot in their **ability to design and implement actions to support sustainability goals**.
- **78%** reported improvement in their ability to **compare and negotiate values related to sustainability**, and **76%** reported improvement in their ability to **think holistically about factors that contribute to a sustainability problem**.

Beyond survey data, student achievements also demonstrate the impact of the diverse skill-building opportunities available through QVENT. In the green venture creation stream (Stream 3), several students secured seed funding for early-stage green business ideas developed in the program, such as:

- **X-8 Circular Fashion Club** – An online thrifting experience using AI-powered fashion design to repurpose vintage garments with on-demand graphic printing.

- **YieldFly** – A sustainable agriculture solution for vertically farming black soldier flies for use in animal feed and organic fertilizer.
- **Cognitech AI Solutions** – An AI-enabled leak detection system for municipal water infrastructure that reduces costs and water loss, and increases resource efficiency.
- **Renovation Scout** – An app that guides homeowners through green renovations, offering project planning, code compliance checks, insurance and safety alerts, green rebate information, and more.



Key Takeaways

FOR EMPLOYERS

- **Diversify your work-integrated learning (WIL) opportunities to strengthen your talent pipeline.** Green employers can benefit from offering a mix of different WIL opportunities to reach diverse students and address different needs. The QVENT streams include short-term industry projects, more traditionally structured work experiences, and longer placements (12 or more months). Lighter touch, short-term projects are a good way to introduce students to your company's climate commitments without needing as many resources as hosting traditional work placements, while 12-16 month internships reduce onboarding time and maximize productivity.
- **Expand your green talent pipeline by recruiting from across all disciplines.** Many students outside of environmental science and traditional STEM programs have the skills and passion to contribute to sustainability. Ask post-secondary industry outreach staff about any opportunities similar to QVENT that will allow you to engage business, humanities, arts, and other students in sustainability-focused WIL. Broadening your recruitment strategy ensures access to diverse perspectives and skills critical to advancing your organization's sustainability goals.
- **Consider the value of non-internship WIL opportunities for building brand awareness.** Short-term industry projects are a practical, cost-effective way for employers to engage diverse talent, tap into fresh ideas for business solutions, and showcase your sustainability initiatives to students interested in green careers.



FOR EDUCATORS

- **Commit resources to enabling cross-institutional leadership on green skills.** Faculty members and staff need leadership and resourcing support to advance green skills-related projects. QVENT is a model for empowering staff and faculty from across units to advance green WIL opportunities in alignment with each program's needs without reinventing the wheel. This distributed approach is an effective way to achieve the breadth of curricular integration required for Canada's green skills challenges.
- **Take advantage of existing strengths instead of building from scratch.** QVENT is also a model for how post-secondaries can leverage their existing resources while tailoring their approach to their institution. It's more efficient to build green-skills related training on top of existing WIL initiatives. Whatever the types of WIL currently offered at your institution may be, assess whether they can be expanded to align with your region's clean economy needs.
- **Allocate time and resources to relationship building.** This model is highly effective to implement but requires significant time investment to build internal relationships across units, and external relationships with industry climate leaders. Remember to allocate time for relationship building upfront, as the success of this approach depends on high levels of internal and external collaboration.



CONTINUE THE CONVERSATION

Interested in learning more about how your organization can get involved with QVENT, or how your post-secondary institution can set up a similar program? Connect with us at wilpartnerships@bher.ca

Check out more resources at <https://bher.ca/resources>