

## Summer 2021 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Initiative (USI) is pleased to offer current UBC graduate students the opportunity to work on funded sustainability internship projects. Successful candidates work under the mentorship of a partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region.

- Visit the [Sustainability Scholars Program website](#) to learn [how the program works](#) and to [apply](#).
- Be sure to review the [application guide](#) to confirm your eligibility before applying.

**Applications close at midnight on Sunday January 31, 2021.**

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### Research project title

Research to understand the regulatory and technical contexts of electric vehicle-to-building bi-directional charging

### Project description

#### Overview:

Technologies are evolving and converging quickly presenting new opportunities to integrate previously separate sectors and evolve energy distribution in BC. Electric vehicle batteries have the potential to act as mobile energy storage units, charging during off-peak times and providing that energy to the house or building during the day to help manage peak demand and support load management. Therefore, as British Columbians continue to adopt EVs, and to further encourage EV adoption, CEA is seeking to answer the question ***“What, if anything, should local governments in BC do to enable residents and businesses to benefit from electric vehicle-to-building (V2B) power transfer.”*** Through literature reviews and interviews with subject-matter-experts, this project seeks to clarify technical requirements for V2B, regulation of requirements, benefits to residents/businesses and local governments, and the role of local governments in BC in supporting and enabling V2B charging.

#### Purpose of the Project:

Low carbon electrification of buildings and transportation is critical to reducing carbon emissions and addressing the climate crisis. This project will explore the opportunity for local governments to further support electrification of buildings and transportation by enabling EVs to be used as energy storage units that can help shift peak electrical demand and supply, help residents save costs, and contribute to a more secure and robust energy system.

#### Scope of Work:

- Jurisdictional scan of policies and regulations in BC to understand the regulatory and technical requirements of vehicle-to-building power transfer
- Brief review of publicly published BC Hydro 2020 Integrated Resource Planning presentations.
- Research technical and implementation aspects of V2B through interviews with industry technical experts at BC Hydro, BC Buildings Safety and Standards Branch and Fortis as well as approximately 3 short interviews with equipment suppliers
- Develop a draft template or a sample municipal policy/regulation that makes it easy for local governments to copy and paste to their situation.

# SUSTAINABILITY SCHOLARS PROGRAM

## Deliverables

The Scholar will deliver a

- A 3-7 page report outlining current state of V2B capable vehicles and equipment and technology trajectories including expected timing for mass availability of V2B in Canada and battery size trends
- Resident/business benefits of V2B under a variety of scenarios (different utility tariffs, etc.)
- A 2-4 page report summarizing the electrical requirements and cost ranges for installation of needed electrical infrastructure at time of build vs retrofits as well
- A 5-7 page overview of current municipal authority and approaches to V2B-readiness as well as the role of other entities / authorities such as BSSB and utilities
- A draft template (1-3 pages) for local governments to adapt to implement V2B ready requirements
- A final report, containing a summary of completed work with recommendations, complemented by a final presentation to key stakeholders.
- A final report [or Executive Summary] for the UBC Sustainability Scholars online project library.

## Time Commitment

- This project will take **250** hours to complete.
- This project must be completed between May 3 and August 13, 2021
- The Scholar is to complete hours at their discretion approximately 20 hours per week.

## Required/preferred Skills and Background

- Excellent research and writing skills
- Statistical analysis
- Strong analytical skills
- Ability to work independently
- Project management and organizational skills

Applications close **midnight Sunday January 31, 2021**

Apply here: [Click here to apply](#)

Contact Karen Taylor at [sustainability.scholars@ubc.ca](mailto:sustainability.scholars@ubc.ca) if you have questions

## Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 19. [Click here for details and to register.](#)

Below are some links to useful resources to help you with your resume and cover letter (there are many more online). Some of these resources also provide information on preparing for your interview.

<https://students.ubc.ca/career/career-resources/resumes-cover-letters-curricula-vitae>

<https://www.grad.ubc.ca/current-students/graduate-pathways-success>

<https://www.grad.ubc.ca/cover-letter-cv-resume-templates-ubc-career-services>