

Summer 2024 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub is pleased to offer current UBC graduate students the opportunity to work on sustainability internship projects. Successful candidates work under the guidance of a mentor from the partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region. These opportunities are paid. The pay rate for the summer 2024 program is \$27.50/hour or \$6,875 for a 250-hour project.

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

Applications close at midnight on Sunday January 28, 2024.

Project title: Identification and Preliminary Analysis of Potential Solar Photovoltaic (PV) Sites in the CRD Corporate Portfolio

Project Background & Overview:

In 2021 the Capital Regional District (CRD) renewed the [Climate Action Strategy](#) that reflects Board priorities and provides clarity on the role the CRD can play as a leader in climate action over the next five years.

Under Goal 4 (Low-Carbon and Resilient Buildings and Infrastructure), the CRD has identified the action of “evaluating the business case for installing renewable power at corporate sites, including water and wastewater locations.” Completion of this task will aid in the CRD reaching its GHG reduction targets, provide an opportunity for offset operational utility expenses, and identify solar PV opportunities which could be implemented to increase building resiliency.

This project takes the CRD one step closer to reaching the 2030 target of a 45% reduction in GHG emissions, and the 2050 target of achieving net-zero emissions. The CRD will likely further explore on-site renewable energy generation in late 2020s/early 2030s, with the exception of sites that require additional electrical capacity that may occur earlier.

Project description

The purpose of this project is to identify and prioritize CRD facilities for potential solar photovoltaic (PV) opportunities and understand the impact to the BC Hydro grid if these installations are pursued.

In particular, we aim to understand what sites are feasible for renewable power based on their physical location in the region, and what corporate sites are nearing maximum electrical capacity and may be an opportunity for a solar-battery storage solution.

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Project scope

1. Complete a best practice review of modeling PV solar installations using solar potential maps, weather data, and satellite imagery. Identify data sources and tools that can be leveraged for the CRD region, including [Photovoltaic Potential and Solar Resource Maps of Canada \(arcgis.com\)](#), and [City of Victoria | Solar Rooftop Calculator](#).
2. Rank the CRD corporate sites based on amount of solar insolation, from highest to lowest.
3. For the top 50 sites, estimate solar generation (kW) capacity using high-level engineering estimates.
 - a. Mapping tools will be used to estimate available rooftop area.
 - b. Categorise CRD corporate sites based on: Roof-top vs ground mount solar; and kilowatts. Sites with less than 50kW will not be analyzed any further
4. Based on the final list of sites resulting from the previous step and using provided BC Hydro interval data, categorize the sites based on their peak demand
 - a. 0-25% of available capacity
 - b. 25-50% of available capacity
 - c. 50-75% of available capacity
 - d. 75% + of available capacity
5. Identify the top 10 sites to deploy solar PV installations.
6. Determine the impact to the BC Hydro grid if all the top 10 sites were installed. Analysis should be done on hourly basis over a 12-month period to provide an understanding of time-of-day and time of year generation.
7. Time permitting: Conduct a shade analysis using available LiDAR data through the [LidarBC \(gov.bc.ca\)](#) website, and using either mathematical or computational tools (such as [SunCalc.org](#)) for 10 sites.

Deliverables

- A final report containing a summary of the work completed.
- Excel-based table of all identified CRD corporate sites, with at a minimum a column for each:
 - Estimated usable area
 - Roof-top / ground mount
 - 50kW – 100kW / 100kW+
 - Peak Demand
- Time permitting: Shade Analysis for a select top 10 site, included in the final report.
- A final report for the online public-facing [Scholars Project Library](#).

Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2024
- The Scholars is to complete their hours between 9 am and 5 pm, Monday to Friday, approximately 17 to 20 hours per week.

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Required/preferred Skills and Background

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Strong analytical skills
- Strong technical and drafting skills
- GIS training or experience
- Comfortable working with large/complex data sets
- Familiarity with or interest in solar PV, an asset

Applications close **midnight Sunday January 28, 2024**

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

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 23, 2024.
[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>