

## Summer 2022 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 30, 2022.**

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### **Project Title: Identify and assess options for end-of-life disposal/reuse of electric bus batteries**

#### **Project description**

Transportation accounts for over 35% of greenhouse gas (GHG) emissions in Metro Vancouver. As one of the region's largest consumers of diesel fuel and operator of a fleet of heavy-duty vehicles, TransLink plays an important role in reducing emissions in our own operations. In October 2018, TransLink adopted ambitious GHG reduction targets (reduce GHG emissions by 80% & use only renewable energy in all operations by 2050). To this end, TransLink is transitioning its bus fleet to battery electric vehicles under its Low Carbon Fleet Transition Plan and will start replacing most of its retiring fleet with battery electric buses after 2024. TransLink already manages end-of-life processes for buses, engines, and diesel hybrid bus batteries. However, the characteristics and volume of batteries will change dramatically as TransLink scales up its battery electric bus fleet.

While battery electric buses reduce GHG emissions during their use phase when compared to diesel buses, the production and disposal of their batteries has significant environmental impacts. Battery disposal also bears costs and operational risks for fleet operators. Commercial and institutional fleets typically plan to dispose of electric bus batteries when they reach 80% of their original capacity. TransLink is looking for a Sustainability Scholar to identify and assess options for end-of-life disposal/reuse of electric bus batteries. The assessment will inform TransLink's decisions and actions for procuring and disposing battery electric buses and their components until 2027.

The assessment must provide responses to four research questions:

1. What options for electric vehicle battery disposal and reuse are heavy-duty fleet operators (especially transit agencies) currently using in North America?
2. What plans and ideas for battery disposal and reuse are heavy-duty fleet operators (especially transit agencies) considering for the next five (5) to ten (10) years?
3. How do these options compare in terms of economic and operational impacts on TransLink?
4. Based on this assessment, which option is recommended for TransLink and what information gaps (if any) remain?

# SUSTAINABILITY SCHOLARS PROGRAM

## Deliverables

- Preliminary Memo 1 – jurisdictional review of current battery disposal/reuse options
- Preliminary Memo 2 – jurisdictional review of planned future battery disposal/reuse options
- Preliminary Memo 3 – list of economic and operational impact metrics for assessing the options
- Final Report – including preliminary memos 1 - 3, and an options analysis with a final recommendation that also flags remaining information gaps
- Final Results Presentation (to TransLink subject matter experts) – must include a slide deck of research methods and key findings
- A final report (or executive summary) 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 2 and August 12**.
- The scholar is to complete hours between **8:00 am and 4:30 pm Monday to Friday**, approximately **17** hours per week.
- Upon project initiation, TransLink will schedule the following meetings with the Sustainability Scholar:
  - A kick-off meeting to confirm the project plan, introduce the Scholar to TransLink's mentors and subject matter experts, and highlight TransLink's existing operational and economic considerations around electric bus battery disposal
  - 30-minute progress meetings every 2 weeks
  - A 45-minute Final Results Presentation

## Required/preferred Skills and Background

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Familiarity with qualitative and quantitative research methodologies
- Excellent public speaking and presentation skills
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Strong technical writing skills
- Familiarity preparing feasibility studies
- Experience with financial modelling and analysis
- Familiarity with electric vehicle battery lifecycles (and chemistry) an asset

Applications close **midnight Sunday January 30, 2022**

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>