Kwantlen Polytechnic University
2024 PSO Climate Change Accountability Report

PART 1. Legislative Reporting Requirements

Declaration statement: This PSO Climate Change Accountability Report for the period January 1, 2024, to December 31, 2024, summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2024 to minimize our GHG emissions, and our plans to continue reducing emissions in 2025 and beyond.

Emissions Reduction Actions (2024) and Plans (2024/2025) by Campus, Building.

A. Stationary Sources

All Campuses – Decarbonization Plan

In 2024, a draft comprehensive decarbonization plan was developed using information from studies that had been completed in previous years. This document outlines a comprehensive plan to reduce greenhouse gas emissions and align with the government of British Columbia's climate reduction targets. The plan focuses on transitioning from natural gas to electricity, improving energy efficiency across campuses, and addressing asset lifecycle management. KPU's carbon emissions primarily stem from using natural gas for heating, domestic hot water, and other energy needs, such as kitchens and laboratories. The institution's infrastructure, while essential for educational purposes, contributes significantly to its carbon footprint.

This plan has been integrated into KPU's asset lifecycle replacement plan, ensuring that energy-efficient alternatives are used as aging equipment is replaced. By coordinating these efforts, KPU plans to enhance operational efficiency while simultaneously reducing carbon emissions and maximizing the benefits of each investment.

All Campuses – Exterior Lighting Upgrade

Starting in 2023 and concluding in 2024, this project upgraded exterior lighting by retrofitting the existing lights with more energy-efficient components, aiming to improve lighting and energy efficiency, reduce electrical consumption, and lower associated carbon emissions.

All Campuses – Main Electrical Vaults, Cooling Systems

A study was conducted to assess the cooling systems for the main electrical vaults at each campus. This included evaluating the existing cooling systems in relation to electrical loads and assessing future electrical loads for each campus, as determined by our previous study on electrical load growth. The purpose of this study is to determine whether the cooling systems in the electrical vaults are adequate for both existing loads, considering past summers' heat domes and anticipated future electrical loads, as our heating systems are electrified and summer heat domes

become more frequent. *The next step will be to add cooling to these vaults, anticipated in 2025/2026.*

All Campuses – T8 to LED Interior Lighting Retrofit

This project, initiated in 2024, is intended to reduce electrical consumption and associated carbon emissions, while also helping to reduce future electrical demand charges when the campus heating systems are electrified. The Surrey Campus and a portion of the retrofit work at the Richmond Campus were completed in 2024. *The remaining work to retrofit the balance of the Richmond Campus, as well as the retrofit of the Cloverdale and Langley Campuses, is planned to commence in 2025.*

All Campuses - A review of current natural gas cooking equipment used in campus food service operations (four campus Cafes and two Tim Hortons franchises) was completed by Kaizen Food Services to understand where KPU can consider electrified equipment to reduce these greenhouse gas emissions. The first stage of this project was completed in 2024. *The next step will be to analyze infrastructure requirements to determine the full scope of this change with a view to replacing cooking equipment as it reaches end-of-life.*

Cloverdale Campus – Continuous Optimization

This project is based on the decarbonization plan and started in 2024. It included a detailed assessment of the energy systems, such as heating, ventilation, and air conditioning (HVAC) and is funded in partnership with BC Hydro and Fortis BC. *A report identifying opportunities for improvement was provided in 2025, with energy savings measures identified, which will save energy and reduce associated carbon emissions. This project is in progress, and cost estimates for the energy savings measures have been requested from the contractor.*

Cloverdale Campus – Hot Water Heater

This project is from the decarbonization plan that started in 2024 and is to replace the existing domestic natural gas hot water heater with an electric hot water heater, to fuel switch from natural gas to electricity, with the goal of reducing carbon emissions. *The project is in progress and will be completed in 2025.*

Cloverdale Campus – Replacement of Exterior Doors

In 2024, design and scope documents were created to replace the six main entrance doors of the trades building with automated sliders. This will allow the door opening size to be increased and decreased based on weather conditions, reducing heating and cooling losses year-round while maximizing accessibility. It also includes new weatherstripping. *This retrofit is scheduled for summer 2025.*

Langley Campus – ASHRAE Level 2 Energy Audit

This audit started in 2024 and involved conducting an energy assessment of Langley Campus to identify opportunities to improve energy efficiency and reduce associated carbon emissions. The audit provided a list of energy efficiency and carbon reduction measures, complete with energy, emission, and cost savings, and a relevant opinion of probable costs and life cycle costing. The audit was completed in 2024.

Langley Campus – BMS Optimization

This project started in 2024 and was to optimize the BMS system at Langley Campus. The work included reprogramming of specific elements of AHU-1 and AHU-8 to align with the ASHRAE Guideline 36 and tuning of existing demand-based control strategies for AHU-2, AHU-3, and AHU-7 and downstream VAVs. A review of occupancy sensors and an investigation into improving the ISH Lab heat pump operation were included. *The project work and M&V work to verify the achieved energy savings were completed in early 2025.*

Langley Campus – Continuous Optimization

This project is from the decarbonization plan and started in 2024. It includes a detailed assessment of the energy systems, such as heating, ventilation, and air conditioning (HVAC) and is funded in partnership with BC Hydro and Fortis BC. *A report identifying opportunities for improvement was provided in 2025, with energy savings measures identified, which will save energy and reduce associated carbon emissions. This project is still in progress, and cost estimates for the energy savings measures have been requested from the contractor.*

Langley Campus – Energy Metering System

Starting in 2024, this study with recommendations was developed to enhance the campus's energy metering. It included an inventory of the existing meters and sub-meters, comparison of meter data with utility data to identify anomalies, meter repairs, meter calibration and verification plan, new meter installation scope, and enhancement of the meter data archiving on enteliWEB and Kaizen, and Kaizen energy view applications. The purpose of this study and the associated work to enhance the energy metering system was to improve the ability to monitor and manage energy consumption. In addition, it will aid with electrical demand cost management when the heating system is electrified in future to reduce carbon emissions. The recommendations of the study were implemented in 2024.

Langley Campus – Heat Recovery System

This project is from the decarbonization plan and started in 2025 with an application for incentive funding for Energy Modelling has been submitted to Fortis BC. It is anticipated that FortisBC will provide incentive funding for the Energy Modelling as well as the subsequent project work, as long as the project exceeds the minimum threshold of 1000 GJ/Year savings, which is required to qualify for funding under the FortisBC Custom Efficiency Program. *The next steps will include energy modelling, developing an NRFP for the design work, tendering the project work once designed and contractor selection.*

Richmond Campus – ASHRAE Level 2 Energy Audit

This audit started in 2023 as part of a glazing replacement project and was completed in 2024. It involved conducting an energy assessment of Richmond Campus to review energy savings opportunities from different types of glazing associated with that project and to identify other energy efficiency measures. The audit provided a list of energy efficiency and carbon reduction measures, complete with energy, emission, and cost savings, and a relevant opinion of probable costs and life cycle costing.

Richmond Campus – Hot Water Heater Replacement

This project is from the decarbonization plan and replaced the existing domestic natural gas hot water heater with an electric hot water heater to fuel switch from natural gas to electricity, with the goal of reducing carbon emissions.

The Richmond Campus domestic hot water supply was originally designed to be provided by the main boiler plant, requiring the main heating boilers to operate year-round with 24/7 standby to provide domestic hot water. Concerns about the amount of natural gas required and the short cycling / minimal loading of the boilers, reducing their lifespan, brought us to the decision to add a gas-fired DHW heater a number of years ago. This has now been replaced by an electrically fired unit, reducing carbon emissions from this system. This project was completed in 2024.

Richmond Campus – Building Management System (BMS) Replacement

The existing BMS system (ca. 1992) is obsolete and will be replaced with a new enhanced system that will reduce energy consumption and associated carbon emissions. This $2.5 M project is funded in partnership with Fortis BC. Additional zone occupancy and CO2 sensors will be added while optimizing control strategies wherever possible and practical. The existing system will be expanded to independently control some building areas, such as stairwells and main entrances, while enhancing and optimizing the atrium ventilation control to increase free cooling in the shoulder and summer seasons. Design work wrapped up in 2023, with contractor selection and the project work started in 2024. *The project is in progress for 2025 with a targeted completion for 2026. It will include enhancing the energy metering system to improve the ability to monitor and manage energy consumption. In addition, it will aid with electrical demand cost management when the heating system is electrified in future to reduce carbon emissions.*

Richmond Campus – Heat Recovery System

This project is part of the decarbonization plan, which started in 2024 and is funded in partnership with Fortis BC. At present, FortisBC has approved incentive funding for Energy Modelling, which has been completed, as well as the subsequent project work under the FortisBC Custom Efficiency Program. *An NRFP was issued to hire a design team, which will mobilize in 2025.*

Surrey Campus – ASHRAE Level 2 Energy Audit

This audit was completed in 2024 and involved conducting an energy assessment of the Surrey Campus to identify opportunities to improve energy efficiency and reduce associated carbon emissions. The audit provided a list of energy efficiency and carbon reduction measures complete with energy, emission and cost savings, relevant opinion of probable costs, and life cycle costing.

Surrey Campus – Cedar Building ASHP Installation

This project started with design in 2022, and installation occurred in 2024. The project's purpose was to fuel switch the heating for the north wing (containing the Gymnasium, Fitness Center, Student Association offices, Grassroots Café, and Conference Center) from end-of-life, natural gas-fired AHUs to air source heat pumps. This project was funded in partnership with BC Hydro and completed in 2024.

Surrey Campus – BMS Optimization

This project to optimize the BMS system at Surrey Campus started in 2024. The work included tuning and refining the system controls programming at the KPU Surrey campus – Building B and Building E to align with the ASHRAE Guideline 36. *The project work and the M&V to verify the energy savings achieved will be completed in 2025.*

Surrey Campus – Energy Metering System

This study started in 2024, and recommendations were developed to enhance the energy metering. The study included an inventory of all the existing meters and sub-meters, comparison of meter data with utility data to identify anomalies, meter repairs, meter calibration and verification plan, new meter install scope, meter data archival on enteliWEB and Kaizen, and Kaizen energy view application. The purpose of this study and the associated work to enhance the energy metering system is to improve the ability to monitor and manage energy consumption. In addition, it will aid with electrical demand cost management when the heating system is electrified in future to reduce carbon emissions.

Surrey Campus – Main Electrical Vault

This project on KPU's oldest campus (with the largest footprint growth) started with design in 2023 and includes upgrading the campus' transformer equipment from the existing 2.5 MW to 7.5 MW. This capacity increase will support future carbon emission reductions through heating plant electrification, allow for fleet EV charging stations and future carbon-neutral building additions and expansions. The project work began in summer 2024 and *is targeted for completion in 2025.*

Surrey Campus – new Child Care and ECCE Facility

In partnership with the Métis Nation of B.C., KPU has designed a new, two-storey child care facility at KPU Surrey, in response to the lack of accessible, quality childcare in the community. This dual-use facility will provide 61 childcare spaces (36 for infant-toddlers and 25 for children aged 2 ½ to kindergarten) as well as practicum placement opportunities for Early Childhood Education

students in partnership with Capilano University's Early Childhood Education programs. The facility is being designed with sustainability, reduced carbon emissions, and energy use as key requirements, including the utilization of electrically fired air source heat pumps for heating. The project will target LEED Gold or higher certification when complete. *Project mobilization begins in summer 2025.*

B. Mobile Sources

KPU's Faculty of Trades & Technology purchased an all-electric, plug-in Chevrolet Bolt in 2024, shared between the Automotive Technology Program as a teaching tool and available for use for external events by Marketing. The Office of the President leases a Lexus gas/electric hybrid for their senior administrator's use, and a gas/electric Toyota Sienna was purchased as an addition to the general fleet for 2024.

Overall, KPU operates a small fleet of newer vehicles, which are well maintained and incur limited mileage annually, due to our campus's close proximity to each other. Of these, two are traditional fleet vehicles; the others are purpose use only and most will not reach end-of-life for ten or more years. These factors, in combination with the lack of available power* to add Fleet charging stations, have delayed KPU's development of a comprehensive EV Fleet transition plan. **KPU has recently begun to upgrade campus electrical supply infrastructure, with our second campus' upgrade targeting completion in late 2025. This will allow further consideration of fuel switching for our fleet.*

KPU, in partnership with the Kwantlen Student Association, runs a daily free shuttle service for students and employees between campuses to backstop and supplement BC Transit's operations in our region. We have public EV chargers, which include a free parking incentive, at our Cloverdale (12), Richmond (6) and Civic Plaza Campuses (4 shared with Civic Plaza). Secure bicycle lockers and shower facilities are available on all campuses to encourage cycling or cycling with transit to work and school.

C. Paper Consumption

KPU has purchasing policies on recycled content, SFI and FSC certified sources. The years-long tradition of using non-wood fiber papers (specifically Sugar Sheet – a sugar cane fiber-based product) for campus printers and copiers continues in 2024. Electronically stored / paperless documents are the norm across all operations, continuing to decrease the need for printing. Existing printers default to double-sided, and online services for marketing, advertising, presentations and meetings are encouraged. PaperCut software technology continues to reduce accidental printing. KPU provides both paper and cardboard recycling services across all campuses.

Many KPU courses are offered in fully or partially online modes, and e-textbooks are widely available to support courses in many programs, raising sustainability awareness in our students.

2024 GHG Emissions and Offsets Summary Table

Kwantlen Polytechnic University 2024 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2024	
Total BioCO_2	9.56
Total Emissions (tCO_2e)	2437
Total Offsets (tCO_2e)	2428
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	0
Grand Total Offsets for the 2024 Reporting Year	
Grand Total Offsets to be Retired for 2024 Reporting Year (tCO_2e)	2428
Offset Investment ($)	$60,700.00

Retirement of Offsets

In accordance with the requirements of the *Climate Change Accountability Act* and the Carbon Neutral Government Regulation, KPU is responsible for arranging for the retirement of the offsets obligation reported above for the 2024 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Energy and Climate Solutions ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days the associated invoice to be issued by the Ministry in an amount equal to $25 per tonne of offsets retired on its behalf plus GST.

PART 2. Public Sector Climate Leadership

2A. Climate Risk Management

Vision 2026 Strategic Plan Goals

KPU's 3-year strategic plan through 2026 continues to apply our goal of "sustainability through our offerings, research and operations" to decision-making processes across the University. KPU will soon embark on the next stage of our ongoing strategic planning to develop Vision 2029.

Climate Strategy Lead

Dr. Brett Favaro began his appointment as Climate Strategy Lead in September 2024. In the Fall semester, he conducted meetings with key parties across the university, launched a coordination website, and compiled background reports on the physical science of climate change as well as ongoing work at KPU on the subject. These background pieces are published in draft format on the website. A Climate Strategy Core Team was organized, with representation across the university, to assist in shaping the vision, values, and strategic priorities of the Climate Strategy. This team will begin meeting in early 2025.

2B. Additional Sustainability Initiatives

Transportation Demand Strategy

KPU, in collaboration with Watt Consulting, has completed an engagement and planning process to create KPU's first Transportation Demand Management (TDM) Strategy. Through interactive discussions with a KPU working group and broader on campus conversations with the KPU community, the project team collected input, shared best practices, and proposed key strategies (big moves) that aim to reduce drive-alone commuting trips, greenhouse gas emissions, and parking demand. While further refinement of the strategy is expected, the top five big moves could include enhanced bicycle parking, subsidized transit for employees, financial support for e-bikes, improved shuttle services, and parking pricing adjustments. These strategies aim to diversify commuting options, enhance sustainability, and manage parking effectively.

KPU's Annual Sustainability Survey

The Office of Sustainability, within Campus and Community Planning, launched KPU's first Annual Sustainability Survey in February 2024, with the support of the Office of Planning and Accountability. This survey aimed to assess the KPU community's understanding of sustainability, including the role of sustainability in everyday decision-making; the use of specific services at KPU; and the community's transportation choices to, from, and between campuses. A sustainability quiz was also administered to understand the level of awareness of sustainability topics at KPU and within Metro Vancouver, including climate change, responsible production and consumption, and society and economy. Overall, 531 employees (27%) and 1,425 students (20%*) participated. The information shared in the survey will help guide KPU's sustainability commitments, including future sustainability projects and initiatives (including our pending STARs sustainability rating system application), and strategic transportation decision-making.

Surrey Campus Welcome and Transit Plaza

This project was launched in response to a new TransLink R6 Rapid Bus line, which will provide express transit service connecting the Newton Exchange and the Scott Road Skytrain station. As one of the few stops along this service, the project will create a transit-oriented gateway for KPU Surrey, as well as an opportunity to collaborate with Indigenous communities and organizations to ensure Indigenous cultures and values are included and celebrated through this improvement to the campus' public realm. With KPU's existing bike lockers and free Intercampus shuttle, the plaza will provide seamless carbon reduced transportation options for students and employees.

Collaboration and planning began in 2024, with the project subject to the securing of additional capital funding.

All Campuses: Initial discussions have begun with BC Hydro to consider the possibility of a funding partnership to provide public EV charging stations across KPU's sites. KPU previously developed a comprehensive EV Strategy (2023) and is awaiting funding support to proceed.

Salmon-Safe Certification

Administered by the Fraser Basin Council, Salmon Safe British Columbia is one of Canada's first and only peer-reviewed certification programs that evaluates the impact of land management practices on urban watersheds for the protection and enhancement of salmon health and habitats. As salmon are a keystone species, the health of their population signals the health of an entire ecosystem. KPU's interest in the Salmon-Safe certification originated during discussions with the Surrey Learning Gardens and Welcome Plaza Working Group. In 2023 and 2024, KPU's four land-based campuses were evaluated using Salmon-Safe's Urban Standards by an interdisciplinary team of scientists with expertise in aquatic ecosystems, stormwater management, and landscape architecture.

As part of this evaluation, a draft report was prepared for KPU, which is now being reviewed by an indigenous assessor - George Chaffee, a Councillor with the Kwikwetlem First Nation, who is highly involved in Kwikwetlem's work to protect and improve salmon habitat within their traditional territory. Following the review, the draft report will be updated with recommendations.

2C. Success Stories

STARS*

KPU's Office of Sustainability submitted KPU's first report to the Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking Assessment and Rating System (STARS) program in 2024. The STARS reporting tool contains 45 credits across four main credit categories: Academics (AC), Engagement (EN), Operations (OP), and Planning and Administration (PA). There is a bonus credit category, Innovation and Leadership (IN), which recognizes innovative solutions to sustainability challenges that may not have otherwise been captured, for a total of 63 credits.

In June 2024, **KPU received a Silver Rating** for its sustainability performance, with full points awarded for the credits associated with Campus as a Living Laboratory, Sustainability Literacy Assessment, Community Partnerships, Inter-campus Collaboration, Office Paper Purchasing, Sustainability Planning and Wellness Program.

Engaging in this process has allowed KPU to establish a baseline of sustainability performance and track progress as strategic initiatives are implemented over time. Moving forward, the Office of Sustainability will apply the lessons learned from the STARS reporting process to help inform KPU's long-term sustainability planning processes, towards advancing our STARS score in future submissions.

**Sustainability Tracking Assessment and Rating System (STARS), a transparent, self-reporting framework used by universities across Canada and the world to measure sustainability performance.*

United Nations, Sustainable Development Goals

In April 2024, KPU was awarded the Colleges and Institutes Canada **Silver Award of Excellence** for its efforts in advancing the Sustainable Development Goals through the SDG Mapping Project. This project took a "whole-of-university" approach, engaging the university community to identify connections between the SDGs and KPU's courses, programs, research, services, operations, and policies. This academic year (2023-2024), KPU made strides towards addressing many of the SDG Mapping Project recommendations, including crafting a KPU-wide definition of sustainability; creating more teaching and learning resources for faculty to embed the SDGs into coursework; and establishing the cross-functional, cross-departmental Sustainability Hub.

In March 2024, KPU hosted its second annual Sustainable Development Goals (SDG) Week, a national collaboration featuring workshops, panels, and other interactive programming to increase awareness of and engagement with the 17 SDGs on university and college campuses. Events throughout the week included a "Fire, Climate, and Community" panel discussion with award-winning climate author John Vaillant, a guided tour of KPU's Richmond Farm, and the "SDG Fair," which celebrated KPU's diversity while strengthening partnerships towards meaningful, sustainable change.

Through faculty time release, KPU's 13 UNSDG Champions from the Faculties of Business, Arts, and Science and the Teaching & Learning contributed 1.625 total FTE in 2024, to projects and studies related to the SGDs as outlined here, Spring 2024 Leading by Example Faculty Co-hort and here Fall 2024 Leading by Example Faculty Co-hort. Most of these projects assessed the readiness or current engagement of their Programs to integrate the SGDs into their curriculum and learning outcomes. The Teaching & Learning projects developed faculty resources to action this integration through toolkits, activity templates, assessments, and discipline specific examples.

In addition, 36 faculty members were awarded $2.3 million in external research grants, and 82 students were awarded $216,000 in internal research grants, all with direct links to between 1 and 9 of the SDGs.

Executive Signoff:

Signature	Date
Peter Smailes	VP Administration and Acting CFO
Name (please print)	Title

May 26, 2025