

KPU 2050

OFFICIAL CAMPUS PLAN

SUSTAINABILITY FRAMEWORK



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SF.1

Introduction

KPU's Sustainability Framework represents the institution's first foray into formalizing a holistically sustainable KPU. It builds upon an existing foundation of employee and student-led sustainability commitments and initiatives that already positively shape KPU's campus culture, identity, and impacts.

In preparing this Framework, it is understood that the advancement of sustainability is an ongoing and evolving commitment. The recommendations provide a framework for decision making that should be considered in tandem with the delivery of Vision2023 and KPU 2050 Official Campus Plan.

SF.1.1. OVERVIEW OF KPU'S CARBON NEUTRAL COMMITMENTS

KPU signed the **Global Universities and Colleges Climate Letter** in 2019, committing to achieve carbon neutrality by 2050. Each signatory is responsible for establishing the criteria to achieve net-zero greenhouse gas emissions.

As a B.C post-secondary institution, KPU is mandated under B.C.'s **Carbon Neutral Government Regulation** to annually report and offset all operational greenhouse gas emissions.

This Regulation mandates the following stepped targets:

- By 2012 - 6% below 2007 levels
- By 2016 - 18% below 2007 levels
- By 2020 - 33% below 2007 levels
- By 2030 - 40% below 2007 levels
- By 2040 - 60% below 2007 levels
- By 2050 - 80% below 2007 levels

To further advance KPU's commitment to carbon neutrality by 2050, this Framework proposes an adapted GHG emissions reductions timeline, maintaining the existing 2007 reference baseline while aligning with proposed campus carbon reduction recommendations. This Sustainability Framework sets out the following GHG emissions reduction targets:

- By 2025 - 50% below 2007 levels
- By 2030 - 60% below 2007 levels
- By 2035 - 70% below 2007 levels
- By 2040 - 80% below 2007 levels
- By 2045 - 90% below 2007 levels
- By 2050 - 100% below 2007 levels

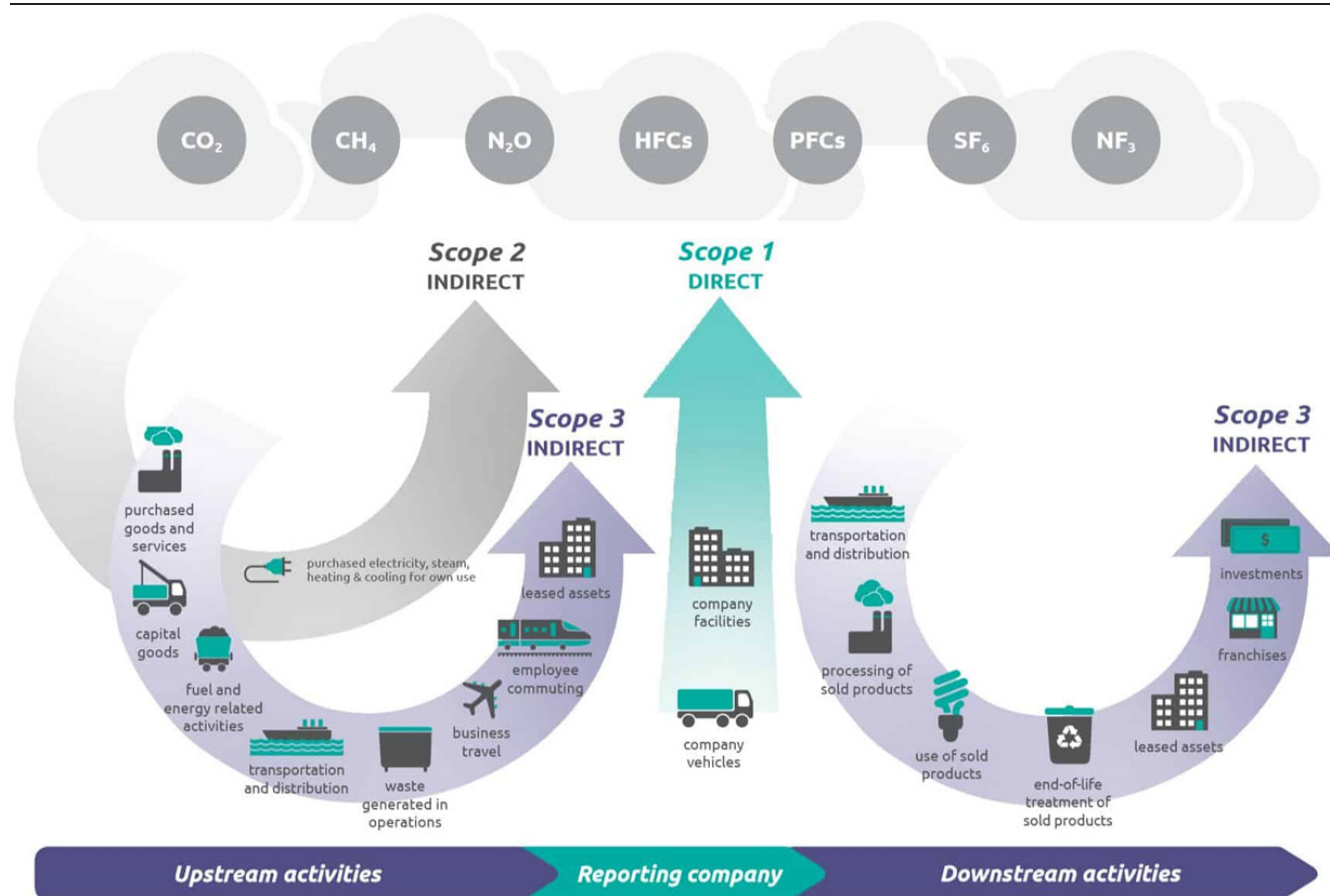


Figure 1 — Scope of Emissions

Source: Greenhouse Gas Protocol.

SF.1.2. SCOPE OF EMISSIONS

The GHG Protocol Corporate Standard classifies an organization's GHG emissions into three 'scopes'. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy.

Scope 3 emissions are all indirect emissions (not included in Scope 2) that occur in the value chain of the reporting organization, including both upstream and downstream emissions. The above graphic (Figure 1) provides examples of how various elements of an organization's activities can be categorized in to these three scopes. This Sustainability Framework considers both Scope 1 and 2 emissions, while exploring opportunities to reduce Scope 3 emissions.



Figure 2 — UN Sustainable Development Goals

Source: The United Nations.

SF.1.3. ALIGNMENT WITH UN SUSTAINABLE DEVELOPMENT GOALS

The UN Sustainable Development Goals (SDGs) target a more sustainable, safe, and prosperous world for all humanity by 2030. Figure 2 illustrates the 17 interlinked goals that form the UN's framework for a better and more sustainable future for all.

As centres for thoughtful and collegial reflection, lifelong learning, and community involvement, academic institutions can facilitate long-lasting effects and societal change. The 17 SDGs offer a multi-dimensional (social, environmental, and economic) framework for sustainability at a global scale. To help align KPU's sustainability initiatives with global scale transformative change, each goal area presented within this framework additionally identifies all corresponding SDGs.

SF.1.4. ALIGNMENT WITH UN SUSTAINABLE DEVELOPMENT GOALS

SF.1.4.1 Definitions of Sustainability

This Sustainability Framework has been informed by several existing definitions of sustainability that have been adopted through various KPU policies, groups, and reports, summarized below. All three definitions guided the development of Framework recommendations.

KPU Vision2023

KPU Vision2023 recognizes sustainability as one of four primary themes across twelve organizational goals, including the following:

- Embrace all cultures and promote a renewed, authentic approach to Indigenization
- Foster environmental sustainability through our offerings, research and operations
- Integrate planning to ensure KPU operations are aligned with our resources, thus sustaining quality and institutional health

Fraser Basin Council (FBC)

KPU's Procurement Services Sustainability Awareness Report introduced the Fraser Basin Council (FBC)'s definition of sustainability: "living and managing activities in a way that balances social, economic, environmental and institutional considerations to meet our needs and those of future generations."

Nested Dependencies Model

KPU's Kwantlen Student Association (KSA) outlined a nested dependencies model within their Sustainability Policy, highlighting the importance of an expanded definition beyond environmental considerations:

"True sustainability involves creating a balance between upholding social justice principles, protecting the environment, and making responsible economic choices. [...]"

Although these three aspects are interdependent, human society and economy are wholly encompassed by the environment. Without food, clean water, fresh air, fertile soil, and other natural resources, human society and economy cannot exist. A more accurate model of sustainability represents the three aspects as nested dependencies. [...]"

A complete discussion of sustainability must also include a discussion of **social equity and social justice**. The climate crisis and other related environmental degradation have been exacerbated by systems of oppression formed throughout history, many of which still operate today."

SF.1.5. ENGAGEMENT PROCESS

SF.1.5.1 Environmental Sustainability Committee Workshops

KPU's Environmental Sustainability Committee (ESC) is comprised of diverse perspectives at KPU including the Office of the President, Maintenance and Operations, Facilities Services, External Affairs, Ancillary Services, Campus & Community Planning, Procurement Services, University Library, Faculty of Arts, Faculty of Science & Horticulture and Kwantlen Student Association. Their mandate is to facilitate, advise, advocate and enable the implementation of integrated environmental sustainability activities at KPU.

Over the course of three workshops, the ESC offered insights that have formed the foundation of the Sustainability Framework:

- **Workshop 1 – May 27th, 2020** – Visioning and Priority Setting
- **Workshop 2 – June 25th, 2020** – Drafting and Refining Goal Areas
- **Workshop 3 – September 29th, 2020** – Drafting and Refining Recommendations

The workshops offered opportunities to gather input on high-level goals and specific recommendations of the Sustainability Framework. Preparation materials, including post-secondary institution best practices, review of KPU's existing policies, and input from emissions and energy studies for KPU's existing and future facilities, were shared with ESC members to inform their discussion. Feedback from these sessions was used to refine recommendations, identify gaps in the proposed Framework, and layer in KPU specific context.

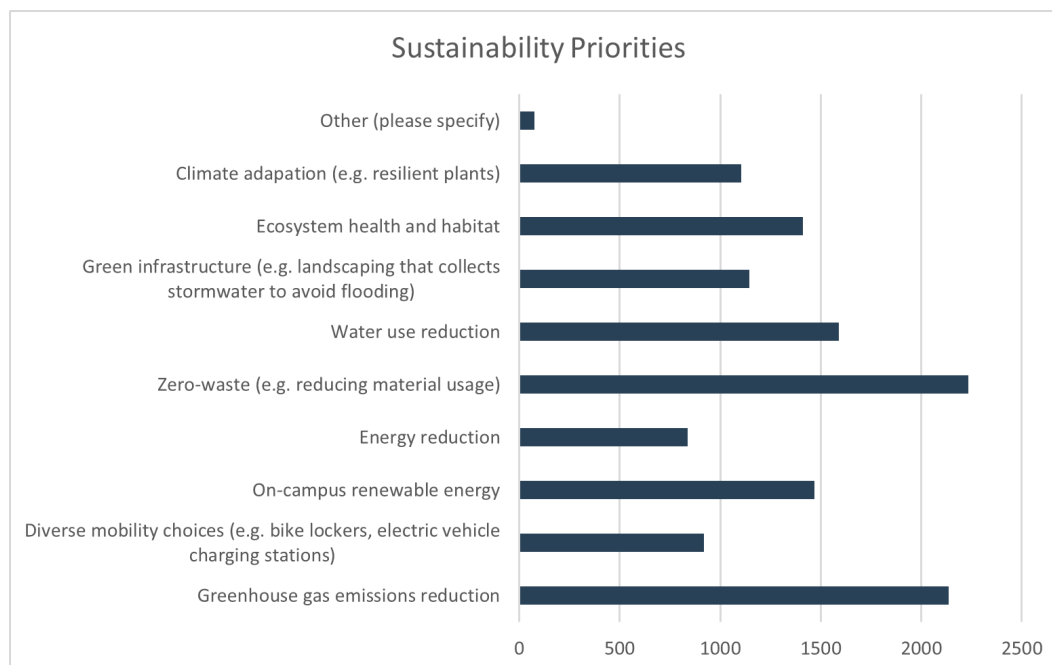


Figure 3 — Sustainability Priorities as Ranked by KPU Students in Fall 2020

SF.1.5.2 Student Satisfaction Survey

Campus and Community Planning and the Office of Institutional Planning and Accountability joined forces to present questions about the Campus Plan as part of the Student Satisfaction Survey (SSS). Completing the SSS each fall is standard practice for KPU students.

The SSS was sent to all students enrolled at KPU in Fall 2020. A total of 5,634 students participated in the survey - a response rate of 41%.

As part of the SSS, students were asked about their priorities for sustainability to inform the emerging Sustainability Plan. Ten options were given, including an opportunity for students to identify a priority of their own. Reducing greenhouse gas emissions and moving toward a zero-waste campus were the clear priorities of those who answered this question (Figure 3).

SF.2

Holistic Sustainability Framework

SF.2.1. OVERARCHING GOAL

In 2050, KPU's campuses are carbon neutral. Sustainability is visible, celebrated, and ubiquitous across KPU's campuses, operations, governance, and academics.

SF.2.2. FOUR DOMAINS: GOVERNANCE, ACADEMICS, PHYSICAL CAMPUS, OPERATIONS

Each domain is supported by subgoal areas that outline opportunities for continued and improved campus sustainability performance. Each subgoal area is supported by a diversity of strategic recommendations that when combined represent a comprehensive Sustainability Framework. The Sustainability Framework is ultimately delivered by an implementation approach that identifies the timing, responsibility and priority of actions.

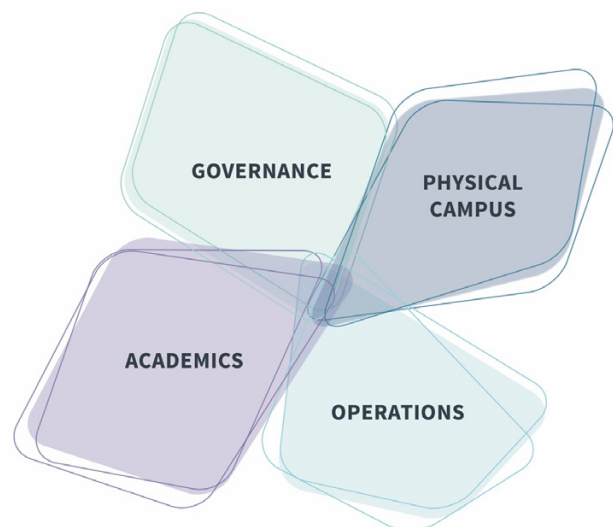


Figure 4 — Sustainability Framework Domains

SF.3

Governance Domain

SF.3.1. LEADERSHIP

SDG Goals: Goal: 16: Peace, Justice and Strong Institutions

SF.3.1.1 Campus Sustainability Implementation

- Establish a Sustainability Framework Steering Committee responsible for overseeing the implementation of the Sustainability Framework as well as contribute to reporting annually to the university community and stakeholders
- Ensure multi-stakeholder engagement with appropriate committees during implementation
- Continue working with the Environmental Sustainability Committee to gain ongoing feedback and advice on the implementation of the Sustainability Framework
- Review and update the Sustainability Framework in tandem with the Official Campus Plan

SF.3.1.2 Leading by Example

- Ensure the university's strategic guiding documents, policies, and procedures formalize sustainability as a core value and practice
- Ensure senior leaders and governing bodies communicate the importance of sustainability at KPU in regular campus addresses, media releases, and through other opportunities

SF.3.2. DIVERSITY, EQUITY AND INCLUSION

SDG Goals: Goal 5: Gender Equality; Goal 10: Reduced Inequalities

SF.3.2.1 President's Diversity and Equity Committee (PDEC) and Indigenous Advisory Committee (IAC)

- Ensure the Sustainability Framework's implementation aligns with PDEC and IAC goals and priorities

SF.3.2.2 Diversity, Equity, and Truth and Reconciliation

- Evaluate campus sustainability projects through an equity lens
- Align sustainability projects, publications, and events with the Calls to Action from the Truth and Reconciliation Commission Report and the articles established by the United Nations Declaration on the Rights of Indigenous Peoples

SF.3.3. FINANCE

SDG Goals: Goal 8: Decent Work and Economic Growth; Goal 13: Climate Action; Goal 17: Partnerships for the Goals

SF.3.3.1 Utility Special Purpose Fund

- Establish a baseline for financial savings associated with building efficiency measures and direct savings to a Utilities Special Purpose Fund for reinvestment into campus sustainability initiatives

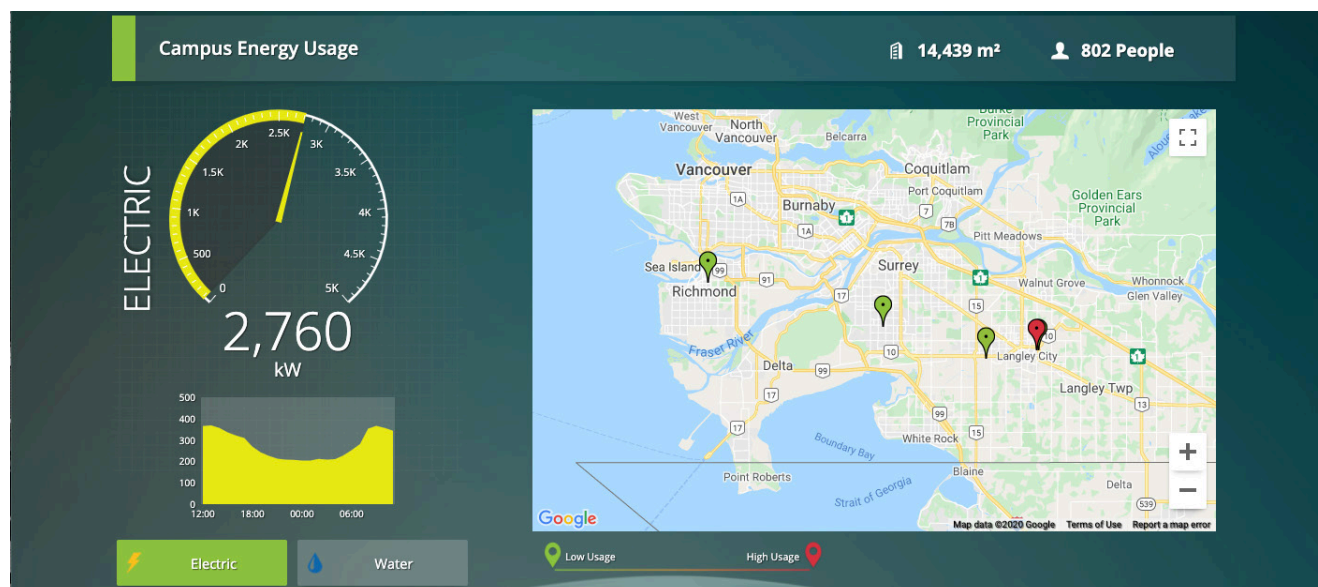


Figure 5 — Communication through KPU Energy Dashboard

SF.3.4. COMMUNICATION

SDG Goals: Goal 17: Partnerships for the Goals

SF.3.4.1 Internal Communication

Produce outreach materials that foster sustainability literacy and celebrate sustainability achievement, e.g.

- Centralized online presence (sustainability website, e-newsletter and social media)
- Deliver facility signage, walking tour, or map to highlighting on-campus sustainability features
- Host networking opportunities, events, and workshops that align with and further the implementation of the Sustainability Framework

SF.3.4.2 External Communication

Elevate awareness and profile of the university's sustainability innovations and success stories.

- Report annually on sustainability performance and implementation of the Sustainability Framework
- Recognize sustainability innovation and leadership within the university
- Encourage ongoing cross-university engagement, dialogue, and co-ordination

SF.4

Academics Domain

SF.4.1. ONGOING ENGAGEMENT

SDG Goals: Goal 13: Quality Education

SF.4.1.1 Sustainability Literacy

- Create opportunities to develop sustainability literacy and assess progress throughout the implementation of the plan
- Expand sustainability content in student and employee orientation and/or training
 - Highlight existing and planned sustainability initiatives, and direct individuals to opportunities to participate
 - Highlight sustainability initiatives, practices, and expectations in ongoing employee and student training

SF.4.1.2 Student Life

- Work with the Kwantlen Student Association (KSA) to expand co-curricular sustainability programs through student clubs and other opportunities
- Work with Sustainable KSA to explore development of a student sustainability ambassador program to promote and support sustainable lifestyles on and off-campus

SF.4.2. APPLIED LEARNING

SDG Goals: Goal 13: Quality Education

SF.4.2.1 Applied Learning on Campus

- Utilize KPU's infrastructure and operations as living laboratories for applied student learning and innovation around sustainability

SF.4.2.2 Indigenous Learning Opportunities

- Work with KPU's Indigenous Advisory Committee to gain insight and advice on implementing Indigenous sustainability initiatives to enhance learning opportunities for students
- Support KPU's Vision2023 by continuing to integrate more Indigenous content and perspectives on sustainability into KPU's learning environment
- In the pursuit of learning landscapes, create opportunities for Indigenous interpretation and storytelling of the land and its ecosystems

SF.4.2.3 Sustainability Grant

- Explore the opportunity to establish a fund to support sustainability-focused academic initiatives that align with the four domains of the Sustainability Framework

SF.5

Physical Campus

SF.5.1. BUILDINGS, ENERGY AND GREENHOUSE GAS EMISSIONS

SDG Goals: Goal 7: Affordable and Clean Energy;
Goal 9: Industry, Innovation, and Infrastructure;
Goal 13: Climate Action

SF.5.1.1 Zero Emissions Commitment

All new campus buildings and facilities to operate using net zero greenhouse gas emissions.

Buildings will have the option to fulfill this requirement by achieving one of three pathways outlined by the Canadian Green Building Council's Zero Carbon Building Standard (below).

All new buildings and facilities will be required to offset operational emissions using green power products, to ensure they do not add to campus GHG emissions.

Green power products involve the purchase of bundled green power or green power environmental attributes. Each kilowatthour of procured green power products offsets an equivalent amount of grid electricity.

OPTION 1 Flexible Approach	OPTION 2 Passive Design Approach	OPTION 3 Renewable Energy Approach
<ul style="list-style-type: none">• Thermal energy demand intensity (TEDI) of 30-40 kWh/m²/year, as a function of climate zone; and• Site energy use intensity (EUI) 25% better than the <i>National Energy Code for Buildings</i> (NECB) 2017	<ul style="list-style-type: none">• Thermal energy demand intensity (TEDI) of 20-30 kWh/m²/year, as a function of climate zone	<ul style="list-style-type: none">• Thermal energy demand intensity (TEDI) of 30-40 kWh/m²/year, as a function of climate zone; and• Zero carbon balance for operational carbon achieved without green power products or carbon offsets

Figure 6 — CaGBC Zero Carbon Building Standard Pathways

To qualify under the ZCB-Design Standard green power products can be generated anywhere in Canada, although project teams are encouraged to consider local options first. Green power products must be generated from:

- Solar energy;
- Wind;
- Water (including low-impact hydro, wave, tidal, and in-stream sources);
- Qualifying biogas (see Combustion Section of CaGBC Zero Carbon Building Design Standard Version 2);
- Qualifying biomass (see Combustion Section of CaGBC Zero Carbon Building Design Standard Version 2);
- Geothermal energy.

The following hierarchy has been established by the CaGBC to ensure that project teams are aware of the different options available and can explore the highest quality options first. These green power products apply to Options 1 and 2 of CaGBC's Zero Carbon Building Standard.

1. Power Purchase Agreements (PPAs): A power purchase agreement is a contract for green power and the associated environmental attributes that typically includes the purchase of a significant volume of electricity under a contract that lasts for at least 15 years. PPAs are among the highest-quality forms of green power product procurement. They are most commonly used at the company-wide scale and are not suitable for use by a single building. PPAs are also not available in all regions of Canada. All PPAs must be certified by either ECOLOGO or Green-e, or meet the requirements outlined in Appendix I - Requirements for Bundled Green Power Products that are not ECOLOGO or Green-e Certified. All power must be from green power facilities in Canada.

2. Utility Green Power: Utility green power is a product offered by some utilities in Canada where the electricity and the associated environmental attributes (in the form of renewable energy certificates) are sold together. Unlike a PPA, utility green power purchases often do not require a volume purchase or fixed term. All utility green power must be certified by either ECOLOGO or Green-e, or meet the requirements outlined in Appendix I: Requirements for Bundled Green Power Products that are not ECOLOGO or Green-e Certified. All power must be from green power facilities in Canada.

3. Renewable Energy Certificates (RECs): Renewable energy certificates are market instruments that represent the environmental benefits associated with one megawatt hour of electricity generated from renewable resources such as solar and wind. They can be purchased from a third party. All RECs must be certified by ECOLOGO or Green-e and generated from green power facilities located in Canada.

Building Design for High Performance Outcomes

Parametric energy model analysis can inform future building design to achieve GHG emissions targets.

The following tables outline alternate pathways to reduced energy use intensity (EUI; kWh/m²/year), greenhouse gas intensity (GHGI; kgCO₂/m²), and thermal energy demand intensity (TEDI; kWh/m²/year) in three typical campus building typologies (academic, residential, research/lab). As the figures illustrate, various combinations of building variables can be employed to achieve high performance outcomes in new buildings. All academic and residential building typologies could achieve the performance requirements of Options 1 and 2 of CaGBC's Zero Carbon Building Standard. All research/lab building pathways could achieve Option 1, while only the highest performing pathway could achieve Option 2. For additional information, please refer to the full parametric energy model analysis report in Appendix B.

Windows	Walls	Roof	Mech.	EUI (kWh/m ²)	GHGI (kgCO ₂ /m ²)	TEDI (kWh/m ²)
Double Pane U-0.36 SHGC-0.32 50% WWR	R-24 Effective	R-40 Effective	100% Heat Pump Htg. 85% ERV Eff.	62.7	0.63	12.7
Triple Pane U-0.28 SHGC-0.32 50% WWR	R-18 Effective	R-40 Effective	100% Heat Pump Htg. 85% ERV Eff.	62.5	0.62	9.8
Double Pane U-0.36 SHGC-0.32 40% WWR	R-18 Effective	R-40 Effective	100% Heat Pump Htg. 65% ERV Eff.	62.5	0.63	13.9
Triple Pane U-0.28 SHGC-0.32 50% WWR	R-30 Effective	R-40 Effective	100% Heat Pump Htg. 85% ERV Eff.	63.6*	0.64	10.5

Figure 7 — Academic Building Typology Recommended Pathways

Windows	Walls	Roof	Mech.	EUI (kWh/m ²)	GHGI (kgCO ₂ /m ²)	TEDI (kWh/m ²)
Double Pane U-0.36 SHGC-0.32 30% WWR	R-18 Effective	R-40 Effective	100% Heat Pump Htg. 85% ERV Eff.	53.8	0.54	20.0
Triple Pane U-0.28 SHGC-0.32 40% WWR	R-18 Effective	R-40 Effective	100% Heat Pump Htg. 85% ERV Eff.	54.7	0.55	18.3
Vacuum IGU U-0.20 SHGC-0.32 30% WWR	R-18 Effective	R-40 Effective	100% Heat Pump Htg. 65% ERV Eff.	54.1	0.54	16.7
Vacuum IGU U-0.20 SHGC-0.32 50% WWR	R-30 Effective	R-40 Effective	100% Heat Pump Htg. 85% ERV Eff.	55.9*	0.56	13.1

Figure 8 — Residential Building Typology Recommended Pathways

Windows	Walls	Roof	Mech.	EUI (kWh/m ²)	GHGI (kgCO ₂ /m ²)	TEDI (kWh/m ²)
Double Pane U-0.36 SHGC-0.32 40% WWR	R-24 Effective	R-40 Effective	100% Heat Pump Htg. 63% ERV Eff.	134.9	1.35	34.6
Triple Pane U-0.28 SHGC-0.32 50% WWR	R-24 Effective	R-40 Effective	100% Heat Pump Htg. 63% ERV Eff.	134.9	1.35	32.6
Vacuum IGU U-0.20 SHGC-0.32 60% WWR	R-30 Effective	R-40 Effective	100% Heat Pump Htg. 63% ERV Eff.	135.1	1.35	28.2

Figure 9 — Research/Lab Building Typology Recommended Pathways

SF.5.1.2 Phased Electrification of Existing Building Systems

- For all existing buildings and facilities, implement a phased electrification of mechanical systems, eliminating all Scope 1 (on-site) GHG emissions. Offset all Scope 2 (off-site) GHG emissions using green power, as outlined in SP.5.1.1 Zero Emissions Commitment.

Existing Building Electrification Strategy

In support of phased electrification of existing building systems, synergies with capital improvement and replacement initiatives have been identified.

Figure 10 outlines a proposed five-year implementation schedule for phased replacement of existing gas-fired HVAC equipment with high efficiency electric units from 2020-2050 across KPU's Tech (Cloverdale), Langley, Surrey, and Richmond campuses. Figure 11 illustrates how these replacements will reduce KPU's building emissions from 2478 tonnes of CO₂ in 2019 to approximately 199 tonnes of CO₂ in 2045, representing a 92% reduction in greenhouse gas emissions. These residual emissions, which are associated with grid electricity and categorized as Scope 2, are equivalent to approximately 61 passenger vehicles being driven for one year or the annual energy use of 47 homes.

For additional information, please refer the full Existing Building Emission Analysis report in Appendix B.

SF.5.1.3 Embodied Emissions

- Develop an embodied emissions (Scope 3) policy that:
 - Mandates whole-building life-cycle analysis for all new buildings, with results published in a publicly available report
 - Explores opportunities to minimize embodied emissions associated with building design and construction
 - Requires, as part of the procurement process, an evaluation of embodied emissions associated with capital asset (e.g., equipment, facilities, vehicles) acquisition or development

CAMPUS	BUILDING	EQUIPMENT	TIMELINE					
			2020-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050
Cloverdale	Main Building	Hot Water Boilers						
		Domestic Hot Water Heater						
	Farmier Building	Unit Heater						
Langley South	Main Building	Hot Water Boilers						
		Domestic Hot Water Heater						
	Brew Lab	Process Boiler						
		Domestic Hot Water Heater						
Langley - North	Header House	Hot Water Boilers						
		Domestic Hot Water Heater						
	ISHRG	Hot Water Boiler						
	Small Polyhouses	Unit Heaters						
Richmond	WSOD	Domestic Hot Water Heater						
		Hot Water Boilers						
	Main Building	Domestic Hot Water Heater						
		Hot Water Boilers						
Surrey	Birch	Domestic Hot Water Heater						
	Fir	Hot Water Boilers						
	Cedar	Roof Top Units						

Figure 10 — Proposed Existing Gas-fired Equipment Replacement Schedule

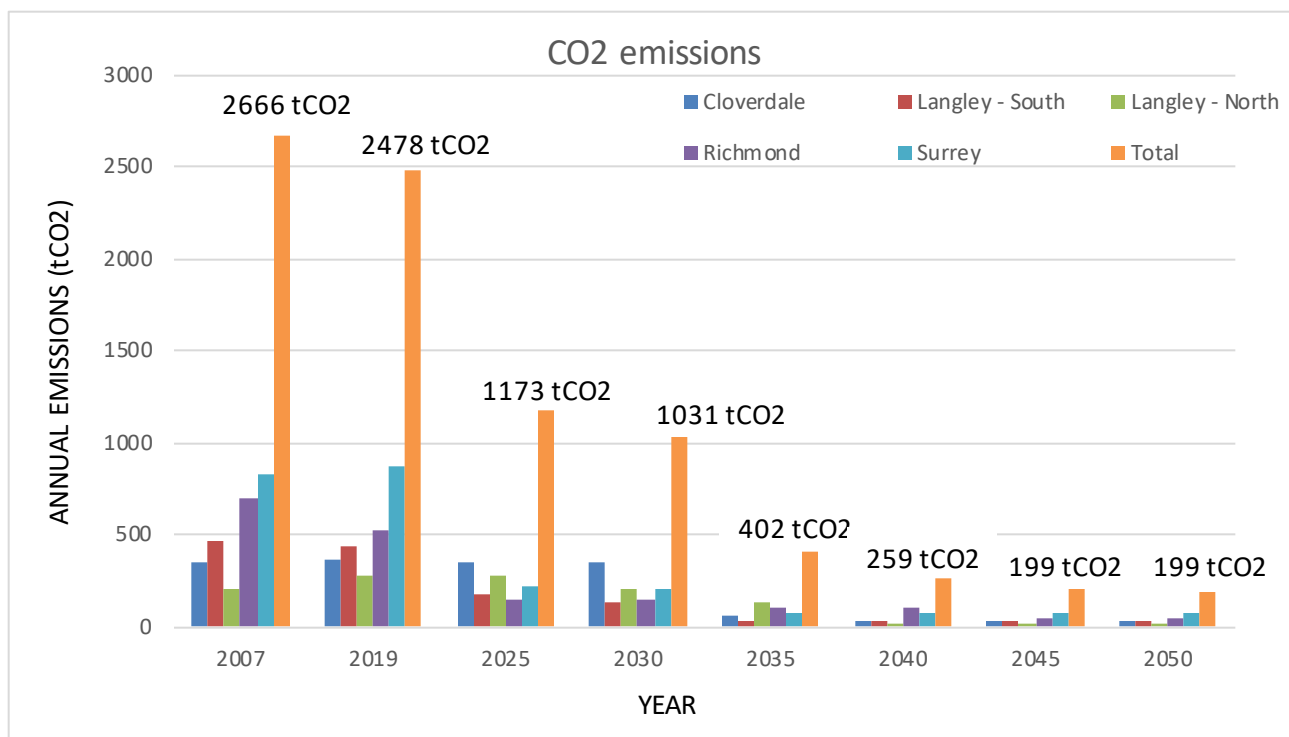


Figure 11 — Projected Building Related GHG Emissions Projections by Campus Through to 2050

SF.5.1.4 Sustainable Building Design Guidelines and Performance Rating Systems

- Develop sustainable building design guidelines that:
 - Reflect industry best practices such as the BC Energy Step Code
 - Prioritize passive design strategies that minimize energy use
 - Harness potential district energy use opportunities
 - Align with the Province of British Columbia's highest energy efficiency standards
- Participate in a KPU-wide campus performance rating system
- For new buildings, require adherence to at least one formal green building rating system above and beyond baseline municipal bylaw requirements
- For existing buildings, consider requiring building certification programs that improve occupant health and wellbeing via strategies such as improved indoor air quality, active building circulation, natural light, and views to nature
- Align focal building sites with the most dynamic of uses so as to contribute to a more complete on-campus experience. These may include student housing, daycares, recreation facilities, an Indigenous for Dialogue and Celebration, a consolidated student Hub building, as well as buildings and structures that celebrate the Indigenous legacy of the land

SF.5.1.5 Renewable Energy

- Explore opportunities to support the development of on-campus renewable energy sources

SF.5.1.6 Resilience

- Develop a climate adaptation and resilience plan that accounts for forecasted climate risks over the timeline of KPU's Official Campus Plan

SF.5.2. MOBILITY

SDG Goals: Goal 3: Good Health and Well-Being;
Goal 9: Industry, Innovation, and Infrastructure;
Goal 11: Sustainable Cities and Communities;
Goal 13: Climate Action

SF.5.2.1 On-Campus Mobility and Accessibility

- Promote walking and rolling on campuses.
 - Prioritize active mobility and universal accessibility through campus circulation design
- Encourage regular accessibility audits on all campuses and identify strategies to improve campus accessibility
- Consider universal design certification programs in the planning stages of new buildings and renovations, such as the Rick Hansen Accessibility Certification™ (RHAC)

SF.5.2.2 Commuting to and Between Campuses

- Expand electric vehicle charging stations on campus
- Require all new buildings to include a minimum number of charging stations, associated with the parking for that building
 - 100% of the required off-street residential parking spaces shall include an energized outlet capable of providing Level 2 charging or higher
 - 30% of the required off-street institutional or commercial parking spaces shall include an energized outlet capable of providing Level 2 charging or higher
- Continue conversion of entire campus fleet to electric and/or hybrid vehicles, with replacement of existing fleet occurring at end-of life



Figure 12 — Electric car charging stations on the Richmond campus

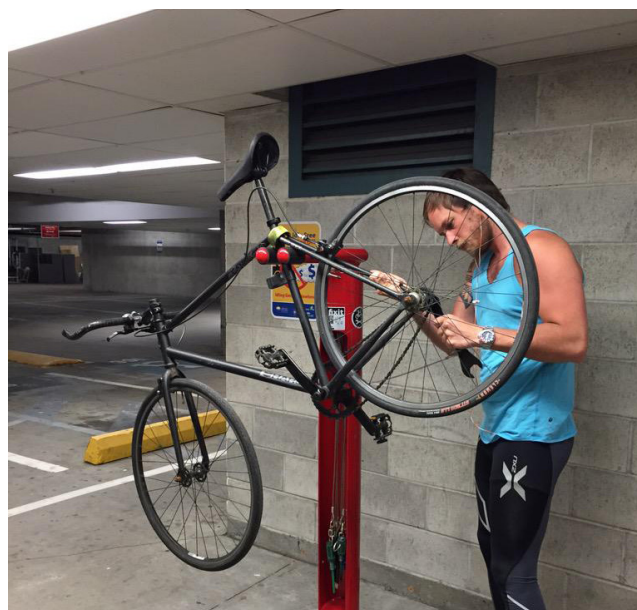


Figure 13 — Fixit bike repair station

- Require bicycle and e-bike parking, storage, and commuter end-of-trip facilities in all new buildings, including change rooms and showers in future campus development.
 - Locate bicycle storage within key open spaces and near primary building entrances. Ensure that end-of-trip facilities are easily accessed.
 - Promote programs that incentivize their use and communicate their availability.
- Work with KSA to include Fixit bike self-repair stations on each campus
- Explore opportunities to introduce private two-way bike sharing for students and staff
- Explore new partnerships with local car share companies to expand car share opportunities on campus
- Offer dedicated parking spaces for car share and carpool vehicles
- Continue engaging with TransLink to identify opportunities to improve transit service, increase ridership at each campus, and to provide appropriate transit stop amenities, such as covered bus shelters, in convenient locations
- Explore pricing and financial incentives related to parking, including increased parking pricing for single occupant vehicles, reduced rates for electric vehicle, carpool, and motorcycle parking
- Explore opportunities to maintain expanded remote working and learning options for KPU employees and students. Strategies could include shared faculty workstations at each campus, enhanced virtual meeting capacity, and meeting guidelines that encourage increased virtual meetings where appropriate.
- Explore opportunities to increase the frequency of the KPU shuttle between campuses
- Explore opportunities to transition campus shuttle to zero-emissions buses (battery-electric or hydrogen fuel cell)



Figure 14 — Secure bike storage

- Explore opportunities to align course scheduling to maximize space utilization and reduce need for students to travel between campuses
- Work with the KSA to complete a travel survey to monitor modal split for students and employees. Leverage findings to promote alternative forms of transportation to and between campuses.
- Monitor and evaluate Scope 3 transportation emissions associated with business travel and employee and student commuting

SF.5.3. WATER

SDG Goals: Goal 6: Clean Water and Sanitation;
Goal 14: Life Below Water

SF.5.3.1 Water Metering

- Install water meters in all buildings and irrigation zones to establish a water consumption baseline and monitoring system. Review progress against water use baseline annually.

SF.5.3.2 Building and Landscape Water Use Reduction

- Reduce water use within existing and new buildings by exploring strategies such as capture and re-use of rainwater and greywater for irrigation and toilet flushing, installation of high-efficiency fixtures in new buildings and retrofitting existing fixtures at end of usable life
- Reduce water use associated with landscape maintenance by specifying only drought tolerant/climate appropriate species with priority given to plant species native to this ecoregion. Specified plants should require no irrigation other than hand watering for initial establishment, and/or irrigation supply should be limited to targeted drip irrigation using captured rainwater and greywater.

SF.5.4. ECOSYSTEM-BASED LANDSCAPES

SDG Goals: Goal 3: Good Health and Well-Being;
Goal 13: Climate Action; Goal 14: Life Below Water;
Goal 15: Life on Land

SF.5.4.1 Ecosystem-Based Landscapes

- Ensure all future development limits impact on existing waterways, riparian areas, and habitats
- At the time of building and open space design, explore strategies to minimize development footprints and create open spaces that can contribute to functional ecosystem landscapes
- Develop comprehensive rainwater management plans that adopt a watershed lens and prioritizes green infrastructure systems and low-impact development practices such as bioswales, rain gardens, and constructed wetlands. Plans should reflect the unique ecological context of each campus and include approaches appropriate to each.
- As Open Spaces are designed, collaboration with Indigenous Peoples on the application of Indigenous design principles is envisioned
- Assess KPU-owned and managed land to identify and develop strategies for ongoing stewardship of environmentally sensitive areas and habitat of endangered or vulnerable species (including migratory species)
- Ensure that all new interior spaces prioritize views to nature
- Prioritize the use of natural materials, such as heavy timber, local stone, and rammed earth in all campus development initiatives
- Protect, preserve, and enhance functional ecosystems on all campuses. Identify opportunities to increase campus vegetation at all scales (e.g.: green walls, roofs, and balconies).
- Explore opportunities and strategies to make KPU's campuses bird-friendly
- Ensure that ongoing maintenance costs associated with biodiversity and biophilia initiatives align with KPU's operational budget

SF.5.4.2 Biodiversity and Biophilia

- Continue managing campus grounds in accordance with Integrated Pest Management (IPM) principles
 - Ensure all landscape management contracts are in compliance with this approach
- Implement pollinator-friendly landscaping practices and habitat structures such as bird or bat boxes to support at-risk native pollinator populations
- Work with KSA to create opportunities for students to contribute to the implementation and maintenance of campus biodiversity and biophilia projects

SF.6

Operations

SF.6.1. WASTE

SDG Goals: Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; Goal 14: Life Below Water

SF.6.1.1 Waste Diversion and Reduction Tracking

- Track and annually report on per capita waste generation (diversion and disposal) by campus and establish incremental targets for improvement
- Ensure that waste diversion and reduction strategies are integrated in KPU's procurement policy, including guidelines for evaluation of waste generated by product and capital asset packaging and end-of-disposal
- Explore opportunities to track, reduce, and offset Scope 3 emissions associated with waste generated through campus operations (e.g. solid waste and/or wastewater disposal/treatment in facilities owned or operated by third parties)

SF.6.1.2 Paper Use Reduction

- Continue to reduce paper-based documentation through a KPU-wide campus digitization strategy
 - Monitor GHG emissions associated with cloud computing
- Provide training in, and promotion of, available software options that enable real time, cloud-based collaboration
- Consider reducing unnecessary printing through a policy that limits the number of paper printouts permitted

SF.6.1.3 Eliminate Single-Use Plastics or other Single-Use Items

- Explore a dish-share program, and accompanying food safety plan, that offers reusable dishware, cups, and cutlery for campus events in a food safe manner
- Collaborate with the KSA and on-campus retail outlets to pilot waste reduction programs that target the elimination of single-use plastics and encourages the use of re-usable items, such as bags and food containers
- Create a plan and timeline to shift all campus events to be zero-waste (eliminate single-use items, such as water bottles, straws, plastic cutlery, and dishware)

SF.6.1.4 Waste Diversion Facilities and Strategies

- Ensure that all facilities have sufficient, clearly-signed multi-stream waste receptacles
- Expand re-use programs by, for example, supporting zero-waste pop up shops or allocating space to lending libraries or free-stores

- Work with the KSA to identify and implement additional KPU-specific strategies to divert materials from the landfill or incinerator by recycling, composting, reusing, donating, or re-selling
- Require all new building construction or renovations of existing facilities to divert at least 85% of construction materials from disposal in landfills and incineration facilities

SF.6.1.5 Training and Communication

- Support learning opportunities for zero-waste initiatives on campus (e.g. orientation, training and evaluation programs)
- Develop enhanced graphics and signage to reflect waste reduction initiatives

SF.6.2. FOOD SYSTEMS

SDG Goals: Goal 2: Zero Hunger; Goal 3: Good Health and Well-Being; Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; Goal 15: Life on Land

SF.6.2.1 Food Services Plan

- Support implementation of all sustainability objectives and strategies outlined in KPU's Food Services Plan, e.g.:
 - Maximize the fresh food experience within food service operations;
 - Maximize the use of local vendors, whenever possible;
 - Where available, food services to support fair-trade products

SF.6.2.2 Food Production on Campus

- Collaborate with the Institute for Sustainable Horticulture (ISH) and Institute for Sustainable Food Systems (ISFS) to expand food production for on-campus use on land owned and managed by KPU
- Work with KSA to create opportunities for student involvement in maintenance of on campus food assets
- Ensure that inter-campus food delivery uses zero-emissions modes of transportation

SF.6.3. PROCUREMENT

SDG Goals: Goal 8: Decent Work and Economic Growth; Goal 9: Industry, Innovation, and Infrastructure; Goal 10: Reduced Inequalities; Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; Goal 17: Partnerships

SF.6.3.1 University-wide Sustainable Procurement Policies

Support Procurement Services to implement key actions in the *Procurement Services Sustainability Awareness Report*, including:

- Improve sustainability awareness by designing an e-learning module for new employees to complete as part of their on-boarding package
- Work collaboratively with internal stakeholders and the Environmental Sustainability Committee to become an Energy Star participant
- Develop procurement tools and checklists to successfully identify and implement sustainable sourcing where appropriate and applicable
- Periodically identify strategic procurement competitions where sustainability can be introduced as a qualifying evaluation criteria

SF.6.3.2 Affordability, Access, and People and Planet Friendly Foods

- Work with on-campus food providers to ensure they offer food options that are affordable, culturally appropriate, nutritious, and planet friendly (refer to the report of the [EAT-Lancet Commission on Food, Planet, Health](#))
- Work with on-campus food providers to expand opportunities to feature KPU-grown food in their menus