

A wide-angle photograph of a modern, multi-story concrete building with a series of vertical fins or columns. In front of the building is a large, rectangular pond with a large rock in the center. Several people are sitting on concrete benches around the pond. The sky is blue with some clouds. The building has a long, horizontal structure with many windows and a series of concrete pillars supporting the upper levels. The pond is surrounded by green grass and some trees, including a small tree on the left and a larger tree with autumn foliage on the right. The overall scene is a campus landscape.

SFU

SIMON FRASER
UNIVERSITY

SIMON FRASER UNIVERSITY

2022 PSO CLIMATE CHANGE ACCOUNTABILITY REPORT



CONTENTS

1. Legislative Reporting Requirements

- a. Declaration Statement

2. Emissions Reductions: Actions & Plans

- a. Stationary Sources (e.g., buildings & power generation)
- b. Mobile Sources (e.g., fleet vehicles, off-road/portable equipment)
- c. Paper consumption

3. 2022 GHG Emissions and Offsets Summary Table

4. Public Sector Climate Leadership

- a. Climate Risk Management
- b. Other Sustainability Initiatives
- c. Success Stories

5. Executive Sign-off

1. LEGISLATIVE REPORTING REQUIREMENTS

Declaration statement

This PSO Climate Change Accountability Report for the period January 1 2022, to December 31 2022, summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to minimize our GHG emissions, and our plans to continue reducing emissions in 2023 and beyond.

By June 30 2023, Simon Fraser University's (SFU's) final 2022 Climate Change Accountability Report will be posted on SFU's [website](#).

2. EMISSION REDUCTIONS: ACTIONS & PLANS

SFU completed a 5-year [Strategic Energy Management Plan \(SEMP\)](#) with a goal to reduce 50 per cent of operational emissions by 2025. The SEMP adopts a holistic approach that focuses on the development of a high-performance building standard, low-carbon electrification, investments in renewable energy systems, re-commissioning of building systems, and upgrading district energy system infrastructure.

a. STATIONARY SOURCES (e.g., BUILDINGS, POWER GENERATION)

McTaggart-Cowan Hall exterior envelope renewal

Built in 1986, McTaggart-Cowan Hall is now 36 years old. The building's primary enclosure areas (e.g., windows and walls) have reached the end of their effective service lives and require replacement. The focus of this project will be on the vertical envelope and supplementary mechanical ventilation of the building. In addition, the implementation of this envelope renewal strategy will bring about positive impacts towards reducing energy usage, improving user comfort, reducing greenhouse gas emissions as well as helping maintain a consistent architectural standard across the campus.



Figure 1 - McTaggart-Cowan Hall Exterior Envelope renewal

SFU Shrum Science Center Kinesiology fan replacement

SFU's Shrum Science Center Kinesiology fan replacement project was initiated by SFU Facilities Services to address the aging and end-of-life status of the base building's heating, ventilation & air conditioning (HVAC) system. The existing supply air fans were replaced with newer, more reliable models incorporating energy conservation features. The previous HVAC supply fans had only two-speed settings and were pneumatically controlled. In contrast, the project added eight supply fans with variable frequency drives (VFD) to allow for modulation as needed. The newer direct digital control (DDC) system was installed to provide a more reliable means of controlling the HVAC system. This project will help reduce electricity usage, thermal energy consumption and overall GHG emissions.



Figure 2 - Two VFD mounted in a mechanical room



Figure 3 - Arrival of fans on site

Fume hoods upgrade

SFU upgraded more than 50 fume hoods in Shrum Centre Chemistry (SCC) by converting them from constant air volume (CAV) to variable air volume (VAV) fume hoods. Along with reducing GHG emissions, these upgrades also enhanced safety. In future, this project can be expanded to other science buildings on Burnaby campus.

District energy system infrastructure upgrade

The Burnaby Mountain District Energy Utility (BMDEU) began operating in October 2020. The plant is fueled by burning urban wood waste to generate thermal energy for Burnaby campus. An ongoing collaboration between Corix and SFU has been undertaken to improve the reliability and efficiency of the heating system. In December 2022, the heat

exchanger was converted to a series configuration from parallel to further reduce the GHG emissions of the heating system.

Low carbon electrification

Facilities Services explored and planned to launch electrification projects across all three campuses with the aim of reducing reliance on carbon-intensive energy including natural gas. In 2022, six gas-fired rooftop units in Southeast Classroom Block were replaced with heat pump units. Diamond Alumni Centre will also undergo a deep carbon retrofit to replace gas-fired units with heat pumps which are expected to be completed in October 2023. Other low-carbon electrification projects are currently being explored in the Facilities Services and Discovery 1 buildings.

Renewable energy procurement

SFU embarked on a pilot to purchase a small amount of renewable natural gas (RNG), which was exempt from offset purchases. Further analysis will be undertaken to determine the opportunity to increase the purchase amount.

Building recommissioning

The Continuous Optimization Program, an initiative supported by BC Hydro and FortisBC, was completed in Maggie Benston Centre (MBC) and Saywell Hall. New sensors were installed in classrooms to optimize the ventilation of the space.

New family housing

Located on SFU's Burnaby campus, the new family housing is a model for energy-efficient infrastructure, incorporating [Passive House](#) principles. Completed in early 2022, the residential housing consists of three buildings: a four-storey

wood-frame building situated on top of a concrete parkade, a six-storey wood-frame building and a steel pavilion building. The complex includes 90 affordable rental apartment units dedicated to SFU students with families. There is also a central courtyard and community space, along with other amenities such as study rooms and secure bike storage.

b. MOBILE SOURCES (e.g., FLEET VEHICLES, OFF-ROAD/PORTABLE EQUIPMENT)

SFU continued its efforts to expand the university's fleet with electric vehicles, in a manner that takes new data into consideration. Facilities Services, Parking and Sustainable Mobility Services, Procurement Services and the Sustainable Transportation Working group are among the groups working towards an electrified fleet. SFU is gradually transitioning towards more owned or leased electric vehicles (EVs) in its fleet.

Facilities Services leased six EVs for their fleet but due to demand related issues, those EVs are yet to arrive at the dealership to be used on campus. Facilities Services is actively looking at increasing EV charging stations across campuses as well as adding some at the Facilities Warehouse to support the addition of EV vehicles to their fleet in the future. Moreover, when procuring a new service provider for landscaping services, Facilities included questions regarding sustainability and the use of green equipment (battery operated over gas). This was part of their evaluation of the proponents and the

successful bidder was selected based on the following commitments:

- Employ local products and services to reduce transportation of goods.
- Their crews avoid any unnecessary travel, by commuting directly to the property from their residences on most days
- Their jobs are scheduled by geographical areas, in order to reduce transportation and unnecessary travel.
- Carpooling is encouraged by all crews.
- They use battery operated on-site transportation vehicles where possible.

In 2022, Parking and Sustainable Mobility Services at SFU conducted a commuter survey to chart progress on commuter related GHG emissions reductions. The purpose of this survey was to understand the ways students, staff and faculty get to and from the campus on a regular basis. SFU Burnaby currently has 12 Level 2 EV chargers. However, using the data from survey, SFU has developed a plan for the installation of an additional EV Charging Hub on campus that is expected to be completed by end of 2023.

c. PAPER CONSUMPTION

Document Solutions, SFU's print and digital services department, is committed to sustainable business practices. For renewable options, they have worked with suppliers to ensure that their users have the best products possible while reducing their carbon footprint. In 2022, there was a 54 per cent

reduction in office paper use emissions as compared to the 2019 baseline.

The paper used is Forest Stewardship Council (FSC) Certified – or made from recycled materials. Document Solutions also encourages the reuse of old banner stands, repurposed plastic signage, as well as monitoring and tracking their in-plant wastage. Document Solutions has also earned the Silver certification for Sustainable Spaces and is striving to achieve Gold certification in the future.

3. 2022 GHG EMISSIONS AND OFFSETS SUMMARY TABLE

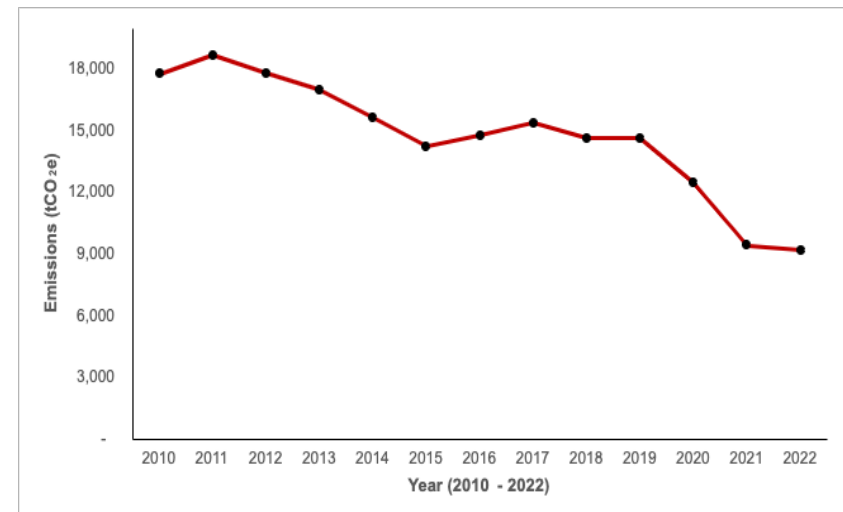


Figure 4 - GHG Emissions over the years

Simon Fraser University 2022 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2022	
Total BioCO ₂	43.86
Total Emissions (tCO ₂ e)	9,231.08
Total Offsets (tCO ₂ e)	9,187.22
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0.0000000053
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO ₂ e)	9,187
Offset Investment (\$)	229,681

RETIREMENT OF OFFSETS

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, Simon Fraser University (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2022 calendar year, together

with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) 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.

4. PUBLIC SECTOR CLIMATE LEADERSHIP

a. CLIMATE RISK MANAGEMENT

In line with Provincial commitments for a carbon-neutral public sector, SFU has reported on its climate change mitigation efforts since 2008 through its annual Carbon Neutral Action Reports. In addition, SFU has many existing plans and actions in place that form a strong foundation for climate change adaptation, such as the Stormwater Management Strategy and Wildfire Management Strategy. However, there is still a need to develop an overarching low-carbon resilience plan that integrates mitigation and adaptation measures and captures co-benefits. As the first step in this process, a team of consultants and SFU staff members completed a comprehensive Climate Change Risk Assessment and identified key action areas to focus on.

This assessment process engaged students, staff, faculty, neighbouring municipal staff and other members of the campus community. The process itself is a step forward to manage risk related to changing climate, as it builds the capacity of those engaged to understand the future climate of the region. The next phase of work in 2023 will include:

- Providing tools and training to support the integration of climate change risk assessment key actions (“big moves”) into work plans
- Leveraging the Embedding Sustainability and Climate Action (ESCA) framework to support the implementation plan for SFU 2025 that will include additional energy saving and GHG reducing projects and initiatives
- Coordinating with all VPs and their portfolios to embed sustainability and climate action/resilience strategic plans
- Continuing community engagement with Indigenous scholars and staff, highly impacted groups, and faculty, to gather additional information on expected impacts of the changing climate and how to mitigate them equitably

b. Other Sustainability Initiatives

Long-term Partnerships

SFU partnered with the City of Burnaby in early 2022 to advance new Civic Innovation Lab. Through this partnership,

SFU will share its leading-edge research and strengths in innovation and sustainability to advance practical solutions for the city’s most pressing urban issues, from diversity and housing to sustainable growth and environmental challenges caused by climate change.



Figure 5 - Photo of the Burnaby skyline from Deer Lake Park

Elimination of single-use plastics

The move away from single-use plastics at SFU continued to ramp up on all three campuses. SFU was able to eliminate the sale of more than 260,000 individual-use plastic water bottles annually, other than for accessibility purposes. That means at SFU, there are no longer water, juice, or soft drinks sold in plastic bottles, and this includes franchise locations such as

Starbucks, Tim Hortons, and Subway, and within the recently opened Blenz Coffee and INS Market convenience store in the new Student Union Building (SUB).



Figure 6 - Reusable bottle usage on campus

Incorporating social value into post-secondary procurement practices

At the beginning of 2022, SFU became one of the four post-secondary institutions aiming to further their sustainability goals through a new social procurement guide, produced in collaboration with the British Columbia Collaborative for Social Innovation (BCCSI). “[*Social Procurement: Amplify your purchasing dollars for a better world*](#)”, was designed to empower procurement professionals in post-secondary

institutions to achieve positive social change through their procurement activities.

c. SUCCESS STORIES

Corix Biomass facility

BMDEU, a collaboration between SFU, SFU Community Trust and Corix Utilities, celebrated its second anniversary in October 2022 alongside 35 plus consulting, trade and contracting companies who contributed to the creation of the project. By this time, the biomass energy centre had already reduced SFU’s Burnaby campus carbon footprint by 85 per cent (or 11,600 tCO₂e annually).



Figure 7 - Second year anniversary ribbon cutting ceremony at the Burnaby Mountain District Energy Utility.

Residence Dining Commons

Open for SFU community in Fall 2022, the Dining Commons was designed to Leadership in Energy and Environmental Design (LEED) Gold specifications and features 28,000 sq ft of sustainable dining space, including 500 indoor seats and large skylights that make use of the natural light. The building further boasts a large outdoor patio and mezzanine with a variety of seating configurations, including family-style tables, bistro, and bar seating.

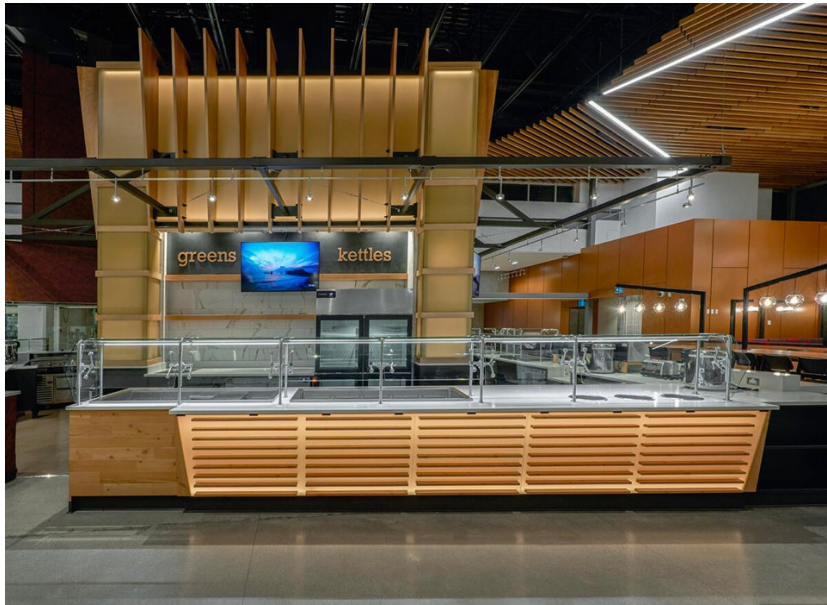


Figure 8 - Interior view of the new SFU Dining Commons

Surrey's Sustainable Energy and Engineering (SEE) Building

Opened in 2019 as the first phase of its Surrey campus expansion, SEE earned the LEED Gold certification – one of LEED's highest ratings – in recognition of its sustainable design and operations. SEE houses approximately 320 undergraduate engineering students and 120 graduate students. The building is not only targeting energy efficient LEED Gold standards, but it is also a living showcase for sustainable building standards.



Figure 9 - Outside structure of the SEE building on Surrey campus

EXECUTIVE SIGN-OFF



May 31, 2023

Signature

Date

Dugan O'Neil

Vice President, Research & International

Name (please print)

Title