



2023 PSO Climate Change Accountability Report



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Land Acknowledgment

The University of the Fraser Valley is situated on S’olh Temexw, the traditional lands of the Stó:lō peoples. We are grateful to be able to work, learn, live and play on these traditional lands that have been kept pristine for thousands of years. To honour this relationship and in the spirit of reconciliation, the Office of Sustainability (OoS) works to contribute to this legacy by caring for our environment and its ecosystems.

PART 1. Legislative Reporting Requirements

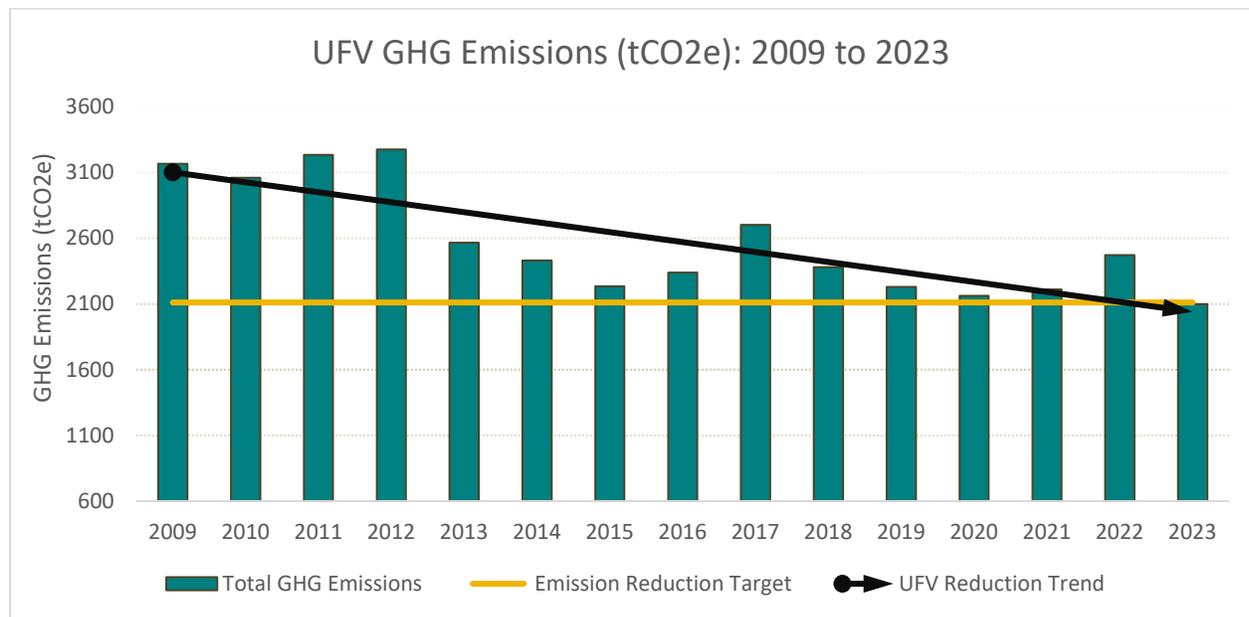
Declaration Statement

This PSO Climate Change Accountability Report for the period January 1, 2023 to December 31, 2023 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to minimize our GHG emissions, and our plans to continue reducing emissions in 2024 and beyond.

Emission Reductions: Actions and Plans

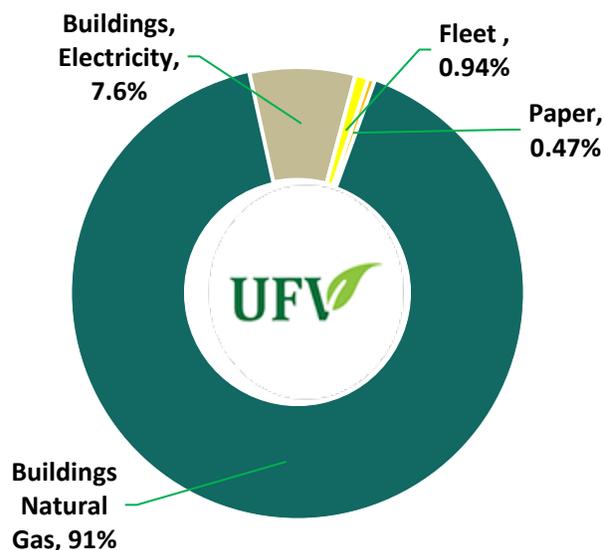
The carbon footprint for the University of the Fraser Valley registered at 2099tCO₂e in 2023. The emissions UFV includes in this report are based on the scope outlined by the Carbon Neutral Government program. The scope includes electricity and natural gas from buildings owned and leased by UFV, gasoline and diesel in UFV's fleet, and paper used for printing. UFV has continued to reduce its carbon emissions, recording a 33% overall reduction in carbon emissions from 2009 to 2023.

The current reduction goal that UFV has defined is reducing emissions 33% from 2009 levels by 2026. UFV is on track to meet these goals. The weather in 2022 was colder in comparison to some of the years prior and following 2022. The increased emissions in 2022 are partly a result of the additional need for heating.



The 2023 GHG emissions distribution:

- Natural gas used in buildings: 91%
- Electricity used in buildings: 7.6%
- Fleet combustion: 0.94%
- Paper consumption: 0.47 %



UFV has prioritized reducing energy consumption, costs and environmental impacts, and being able to respond to climate change that could impact services and the wellbeing of employees, students, and broader communities. In 2023, the University implemented projects that support and advance these priorities. This section provides an overview of the main campus-wide initiatives that form UFV's strategy for climate change mitigation and adaptation. Behaviour change campaigns are also done to help contribute towards greenhouse gas reduction goals and are outlined in the other sustainability initiatives section of this report.

Overarching Plans and Actions

- **Energy Management and Climate Resilience Plan:** UFV is currently developing the Energy and Climate Resilience Plan, which is expected to be complete in 2024. This plan aims to establish new University-wide GHG emissions, energy conservation and climate resilience targets; and identify specific pathways that will be taken to achieve these targets, including annualized capital projects. UFV is working to formulate a strategy and identify action plans to improve resilience to climate change.
- **Sustainability Policy:** The UFV Sustainability policy was established in October of 2023 and identifies sustainability as a priority for the university. The policy provides UFV's common understanding of what sustainability means. It is a framework for integrating sustainability into decision-making, university practices, initiatives, and education.
- **UFV Energy and Climate Mitigation Committee (ECMC):** The purpose of this committee is to coordinate the creation and successful implementation of university-wide energy

and greenhouse gas (GHG) emissions reduction policies, plans, and best practices. The committee is still in the early stages of development and is expected to play a larger role in 2024.

- **Metering Gap Analysis:** Work began to complete a metering gap analysis. This analysis involves a review of the condition and locations of current utility meters and submeters on campus and identifies opportunities where new meters can be installed. New meters can help to better identify where natural gas, electricity and water is being used on campus so that new projects can target the highest consuming areas. New metering can also help inspire behavior change and quickly flag issues in equipment performance. The results of this study and an implementation plan will be complete in 2024. This project also involves the integration of data with energy management analytics tools.
- **Collaboration and Partnerships:** In 2023, UFV participated in the FortisBC Energy Specialist Program, BC Hydro Energy Manager Program as well as Energy Wise Network led by the BC Hydro and FortisBC. These programs look to help organizations foster a culture of strategic energy and carbon management within the organization. Partnerships are also formed internally between different departments on campus.

Stationary Sources

Building operations are responsible for a significant portion of UFV's total greenhouse gas (GHG) emissions. As part of UFV's commitment to sustainability, the university is diligently working on the development of a Strategic Energy Management and Climate Resiliency Plan. This plan will provide a comprehensive and long-term framework to guide campus development and operations, with a specific emphasis on transitioning to low-carbon energy sources. This strategic approach will ensure that UFV effectively addresses its emissions from building operations, fostering a more sustainable and climate-resilient campus.

UFV has an annualized budgeting plan to upgrade existing equipment, implement energy efficiency measures and optimize processes to reduce emissions and energy consumption. The major projects that were completed and planned for in 2023 are as follows:

- **Solar Thermal Water Preheat System- Abbotsford, Building H:** As part of UFV's ongoing commitment to clean energy, a solar water preheating system has been installed on the roof of Lalem te Baker in 2022 and became operational in 2023. This system harnesses solar power to preheat the building's domestic hot water (DHW), resulting in reduced natural gas usage, cost savings, improved energy efficiency, lowered environmental impact, and enhanced system performance.

- **Roof-top Unit Replacement- Abbotsford, Building A:** A condition assessment and energy study at the Abbotsford campus in 2022 identified Buildings A as a priority site for rooftop unit replacements. Existing gas-fired RTUs are being replaced with equivalent air-source heat pump (ASHP) type RTUs to reduce natural gas use and GHG emissions. Engineering design was completed in 2023 and installation is planned for 2024.
- **Roof-top Unit Replacement- Abbotsford, Building K:** A condition assessment and energy study at the Abbotsford campus in 2022 identified Buildings K as a priority site for rooftop unit replacements. Existing gas-fired RTUs are being replaced with equivalent air-source heat pump (ASHP) type RTUs to reduce natural gas use and GHG emissions. Engineering design was completed in 2023.
- **Dedicated Heat Recovery Chillers (DHRC)- Abbotsford, Buildings A, B & D:** In 2022 an energy study was conducted to identify gas-saving opportunities by interconnecting the heating and chilled water systems of three buildings to create the start of a campus district energy system. Steps were taken during 2023 to prepare for completing the detailed design and for scheduling installation in 2024.
- **Gas Absorption Heat Pump (GAHP) - Chilliwack, TTC:** Detailed design work was completed in 2023 to install GAHP at the Trades and Technology Centre. The GAHP will result in gas and GHG savings for providing domestic hot water, space heating for the entire building as well as supplemental cooling for nearby classrooms at the Trades and Technology Center. Installation is scheduled for 2024.
- **Construction of a New Student Housing (Design Phase) - Abbotsford:** The new student residence building will meet the requirements of Energy Step Code 4 and LEED Gold. These standards signify a high level of energy efficiency and sustainability. During 2023 the design process occurred using an integrated design process (IDP) approach to promote energy efficiency and sustainable practices throughout the project construction and operation.
- **Expansion of the Dining Hall- Abbotsford:** Like the New Student Housing, the expansion of the current dining hall went through the design phase in 2023 using an integrated design process. Energy systems and the building envelope will be more efficient resulting in GHG reductions within the dining hall's operation.
- **VFA Condition Assessment:** An audit that will assess the conditions of all UFV buildings and equipment is scheduled for 2024 and will help to identify priority areas for new projects on campus. The energy management and sustainability team at UFV will be heavily involved in maximizing the opportunities identified for energy and GHG reductions.

- **Solar Assessment:** UFV is planning to complete a campus wide assessment for new solar projects in 2024. This assessment will determine which areas of campus would be most suitable for solar projects that would help generate electricity on campus or that could be used for heating applications similar to the new water preheat system at the student residence. The project also involves determining what upgrades would need to be completed on campus for solar projects to be installed.
- **District Energy Planning:** UFV is conducting a study in 2024 that will determine if a district energy system would be suitable for the UFV campuses and what the implementation strategy would be. District energy systems take away the need for buildings to have individual boiler units and allows energy to be drawn from lower emissions sources such as geothermal or heat recovery from sewer.
- **LED Lighting Upgrades:** In 2024 UFV will be undertaking substantial lighting retrofits in Building E and Building D at the Abbotsford campus, transitioning to state-of-the-art LED lighting. This retrofit underscores UFV's dedication to creating a more environmentally responsible campus environment. LED lighting offers numerous benefits, including reduced energy consumption, longer lifespan, and improved lighting quality, contributing to a more comfortable and productive learning, and working environment for our students, faculty, and staff.

Mobile Sources

EV Charging Station: In 2023, UFV performed repairs on some of the existing EV Charging Stations on campus after vandalism occurred. This has led to planning to prevent future incidents from occurring. Continued installation and maintenance of EV Chargers is part of a broader effort, led by UFV's Office of Sustainability, to reduce scope 3 GHG emissions and foster a culture of sustainability throughout the entire university community. Currently, there are four Level 1 EV charging stations, eight Level 2 stations and one DC Fast Charger (21 ports in total) accessible to students, employees, and the public across the university campus. In 2023 survey was put out to the UFV community to better understand current EV charger needs on campus and is helping to inform strategies that are planned to be developed in 2024.

Fleet Management Plan: UFV plans to develop a Fleet Management Plan that provides a comprehensive framework for transitioning the university's fleet to electric, as well as providing campus-wide charging for students, staff and faculty. In addition to the EV Ready Plan, UFV plans to develop an EV Policy, a Fees Schedule, and a Responsibilities guide, to guide future EV infrastructure development.

Paper Consumption

UFV's GHG emissions associated with paper consumption are less than 1 percent (0.47 %) of the total reported emissions. The paper consumption reported is based on the paper used in printers, at UFV and does not include notepads, envelopes, or paper sold in the bookstore. UFV Printing Services has adopted environmentally friendly practices in its printing operations and has made a dedicated commitment to using paper with a recycled content of 100 percent post-consumer waste (PCW). In 2023, approximately 90% of the paper sourced for UFV was 100% recycled content with the other 10% of paper being 30% recycled content. By actively transitioning from paper-based to digital workflows, this downward trend in paper-related GHG emissions is expected to continue in the future.

2023 GHG Emissions and Offsets Summary Table

University of the Fraser Valley 2023 GHG Emissions and Offsets

| GHG emissions for the period January 1 - December 31, 2023 | |
|--|------------|
| Total BioCO ₂ | 0.69 |
| Total Emissions (tCO ₂ e) | 2098 |
| Total Offsets (tCO ₂ e) | 2098 |
| Adjustments to Offset Required GHG Emissions Reported in Prior Years | |
| Total Offsets Adjustment (tCO ₂ e) | 0 |
| Grand Total Offsets for the 2023 Reporting Year | |
| Grand Total Offsets (tCO ₂ e) to be Retired for 2023 Reporting Year | 2098 |
| Offset Investment (\$25 per tCO ₂ e) | \$52,450 |
| Offset Investment (\$25 per tCO ₂ e) including taxes (5% gst) | \$55,072.5 |

Retirement of Offsets

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, the University of the Fraser Valley (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2023 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.

PART 2. Public Sector Leadership

Climate Risk Management

The University has begun the process to identify and respond to current and future climate change related risk.

- UFV has initiated the process of developing an Energy and Climate Resilience Pathway Plan, which will identify climate-related risks, and actions that will be taken to reduce energy consumption and GHG emissions and reduce climate vulnerability that may result in service disruptions.
- The Office of Sustainability (OoS) is working with the Joint Occupational Health and Safety Committee to identify current and future risks of climate change on the health and wellbeing of staff, students, and faculty. This includes forest fires, flooding, extreme heat, and extreme weather.
- The OoS is exploring the development of a Sustainable Procurement Policy. The policy will integrate environmental, social, and economic considerations into the procurement process and will be designed to ensure that the goods, services, and work procured by the university will have minimal negative impacts on the environment and society.
- In 2023 UFV continued to expand its Office of Sustainability to expedite its actions to advance sustainability and energy security and climate resilience. UFV's Office of Sustainability is focused on bringing a pan-institutional approach of holistic sustainability to UFV. Much of the work includes creating initiatives, increasing awareness and education about environmental, social, and economic sustainability, and coordinating and tracking UFV's institutional-wide sustainability efforts. The Office of Sustainability team is made up of the Director of Energy and Sustainability, the Energy Manager, the Sustainability Manager a Sustainability coordinator, 2 intern and 2 student intern positions over the year. One of the goals is to provide work experience for students and people looking to enter Sustainability careers. UFV's Office of Sustainability works closely with all departments to advance sustainability across campus.

Other Sustainability Initiatives

UFV has implemented several actions to support the advancement of sustainability more generally:

- Hosted March for Sustainability, a series of 20 coordinated events, co-hosted by various UFV departments and groups throughout the month of March to raise awareness and address sustainability topics such as climate change, biodiversity, EDI, and gender equity.
- Hosted educational programming including **UFV Sweater Week** to raise awareness about energy consumption and climate change, UFV reduced temperatures by 2°C campus-wide during the month of February.
- Facilitated a Campus-wide **Eco Challenge** to encourage students and staff to lessen their impact on actions related to food, water, waste, nature, community, and more. This challenge is run through <https://drawdown.ecochallenge.org/> and promoted by the Office of Sustainability. 101 members of the UFV community signed up. It's estimated that participants saved 1,344 pounds of CO2 saved, 4,114 gallons of water saved, and 137 disposable cups kept out of landfills, 5,269 minutes spent outdoors, 136 hours volunteering, and 2,612 minutes spent learning about sustainable topics.
- Implemented the **Sustainable Office Certification** program various departments received a sustainability audit and a list of actions they could take to boost a sustainability score. Various sustainability practices, including ways to reduce energy consumption, determines their score and a final designation of bronze, silver, gold or platinum. The plan is to continue this program in 2024 where offices can try to improve upon their original designation. The **Sustainable Events certification** also continued in 2023, that brings sustainability to the forefront of event planning at UFV, event holders can complete a checklist, opting for sustainable actions to complete during preparation, day of, or post-event.
- Continued to publish a monthly newsletter and develop social media content, educating staff and students on sustainability initiatives and sharing tips and resources for sustainability practices including energy conservation.
- A pollinator garden and fruit trees were planted at the Abbotsford campus to provide a teaching space for courses on biology, conservation, biodiversity, and sustainability. The garden will support native pollinators on campus. In 2023 the pollinator garden was expanded and there are plans for further expansions in 2034.
- Planning began for a permeable pavement pilot on campus to explore alternatives to traditional concrete sidewalks/parking lots. Using porous pavement aims to improve

stormwater management by allowing water to infiltrate into the ground. Planning began in 2023 and the pilot will be implemented in 2024.

- Implemented Plastic-Free July, to educate the university community on ways to reduce plastic consumption.
- In 2024 a formal planning process focused on incorporating the 17 United Nations Sustainable Development Goals will take place.
- There are plans to conduct a waste audit and a new waste management plan in 2024

Executive Sign-off:

| | |
|---------------------|--|
| Signature | Date |
| | Acting AVP Campus Planning & Facilities Management |
| Name (please print) | Title |