



2021 PUBLIC SECTOR ORGANIZATION CLIMATE CHANGE ACCOUNTABILITY REPORT

UNIVERSITY OF VICTORIA



Sustainability in action.

May 31, 2022

EXECUTIVE SUMMARY

This Climate Change Accountability Report is for the period of January 1, 2021 to December 31, 2021. The report summarizes the University of Victoria's (UVic) greenhouse gas (GHG) emissions, the amount of offsets purchased to achieve carbon neutrality, the actions taken to reduce our GHG emissions, our plans for climate risk management and to continue reducing our emissions in order to meet our goal of achieving net zero.

In 2021, emissions totalled 10,028 tonnes of CO₂e (tCO₂e). Emissions reductions in all four categories contributed to the university decreasing its emissions by 2,362 tCO₂e. This value is reflective of the Electricity Emission Intensity Factor update that came into effect in March 2022 for the 2021 reporting year. UVic has achieved a 38 per cent reduction overall in total GHG emissions compared to the 2010 baseline year, exceeding our emissions reduction target of 30 percent by Dec. 31, 2021.

Despite looking to an overall recovery from global pandemic disruptions in 2020, UVic continued to respond to the pandemic crisis and climate change impacts, such as an extreme heat dome, wild fire smoke and widespread flooding in British Columbia. Climate risk management has been identified as a priority in our new Climate and Sustainability Action Plan.

The University of Victoria has been carbon neutral since 2010 and is committed to climate solutions as we continue to plan for a resilient and sustainable future. For instance, UVic signed on to the global Race to Zero campaign in 2021 and is committed to reducing carbon emissions to net zero by 2050 or earlier. We continue implementing optimization and building systems, exploring how best to transition from fossil fuel-based space heating and domestic hot water infrastructure to low-carbon energy sources through the ongoing development of our next carbon reduction plan and collaboration with our researchers. As construction continues on the new Student Housing and Dining Project, opening in fall 2022, it will meet the most rigorous global building standards for sustainability and energy efficiency: Passive House and Leadership in Energy and Environmental Design (LEED) V4 Gold standards.



Andrew Coward

Acting Associate Vice-President, Financial Planning and Operations
University of Victoria

May 31, 2022



DECLARATION STATEMENT

This PSO Climate Change Accountability Report for the period January 1, 2021 to December 31, 2021 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach carbon neutrality, the actions we have taken in 2021 to reduce our GHG emissions, and our plans to continue reducing emissions in 2022 and beyond.

2021 EMISSIONS AND OFFSET SUMMARY RETIREMENT OF OFFSETS

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation University of Victoria (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2021 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.

Offsets required to achieve carbon neutrality in 2021 total 9,974 tCO₂e. This value includes offsets required for 2021 (10,020 tCO₂e) minus the offset adjustment of 46 tCO₂e, which was a result of over reported emissions for 2019 and 2020. As seen in Table 1, BioCO₂ is included in total emissions but not total offsets. They are not required to be offset due to its renewable resource.



University of Victoria's 2021 GHG Emissions and Offsets Summary	
GHG Emissions created in Calendar Year 2021	
Total Emissions (tCO ₂ e)	10,028
Total BioCO ₂	8.76
Total Offsets (tCO ₂ e)	10,020
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	-46
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021 Reporting Year	9,974
Offset Investment (\$25 per tCO ₂ e)	\$249,350 (plus GST)

Table 1: 2021 greenhouse gas emissions and offsets for the University of Victoria

The 2021 electricity emission intensity factor (EEIF) for the integrated grid (including the Fort Nelson grid) was updated in the Clean Government Reporting Tool (CGRT). This update reflects the EEIF methodology used by industry for reporting purposes under the *Greenhouse Gas Industrial Reporting and Control Act*. Due to the change in methodology used to determine the EEIF, BC's published EEIF for the integrated grid was 40.1 tCO₂e/GWh in 2020 and then decreased to 9.7 tCO₂e/GWh in 2021. The 2021 CCAR reflects these changes.

In addition, Scope Two emissions (tCO₂e) in Table 2 for 2020 also reflects corrections made due to over reported electricity energy consumption in 2019 and 2020 of 46 tCO₂e for the Vancouver Island Technology Park. Although there was a 74 per cent decrease in Scope Two emissions due to EEIF methodology calculations from 2020 to 2021, actual consumption increased 9 per cent from 190,137 GJ to 206,414 GJ.

UVic's GHG emissions totalled 10,028 tCO₂e for the 2021 reporting year. This represents a 38 per cent reduction from 2010 levels (updated with the change in EEIF).

Reporting Category	2020 tCO₂e	2021 tCO₂e	% change (tCO₂e)
SCOPE ONE: University owned buildings & leased spaces: Natural gas, diesel, and heating fuel	9,950	9,169	-8%
Actual consumption (GJ)	199,460	183,781	-8%
SCOPE TWO: University owned buildings & leased spaces: Electricity	2,118 ¹	556	-74%
Actual consumption (GJ)	190,137	206,414	9%
SCOPE ONE: Mobile Combustion (fleet)	257	246	-4%
SCOPE THREE: Paper supplies	64	56	-13%
Total tCO₂e	12,390²	10,028	-19%

Table 2:³ UVic GHG comparison by reporting category: 2020 & 2021

- 1 In the 2020 CCAR, Scope Two emissions was reported as 580. That value has been updated in this report due to the EEIF update.
- 2 In the 2020 CCAR, total emissions was reported as 10,855. The change in value is a result of the 2021 EEIF, which has been updated in CGRT and affects the university's historical inventory data.
- 3 In 2021, the BC Carbon Neutral Government program adopted the Electricity Emissions Factor (EEIF) methodology for quantifying emission factors for electricity in order to align with the *Greenhouse Gas Industrial Reporting and Control Act*, which uses a grid-based approach (rather than provider-based).

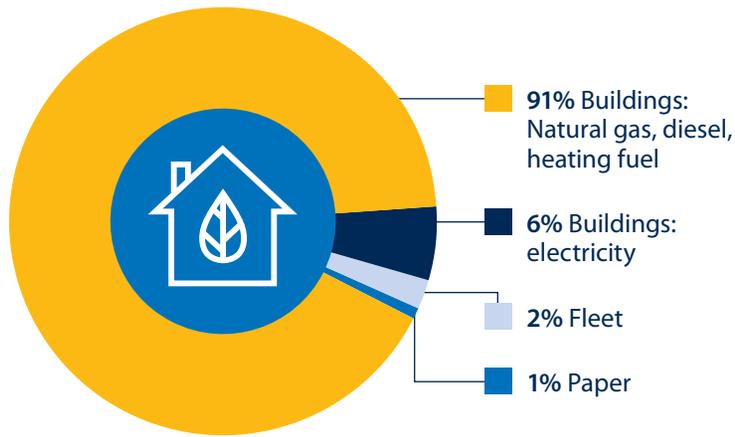


Figure 1: 2021 GHG percentage of each reporting category for the University of Victoria

In 2021, Scope One GHG emissions accounted for 91 per cent of the university's total emissions and electricity (Scope Two emissions) accounted for 6 per cent (Figure 1).

Figure 2 outlines the university's emissions⁴ and annual emissions target relative to the annual heating degree days (HDD) and average HDD. HDD is measured by identifying days with an average temperature below 18 degrees Celsius (heating days) and summing the total of degrees below that temperature for each day. In 2021, the campus experienced a 3 per cent increase in HDD relative to 2020.

⁴ Historical total tCO₂e values were calculated using the CGRT software, which now applies the EEIF methodology. In previous years, the EEIF was calculated as an average of BC Hydro's GHG intensities. As a result, GHG totals differ in this chart compared to previous CCAR and Carbon Neutral Reports.

UVic GHG Emissions and HDD: 2010 to 2021

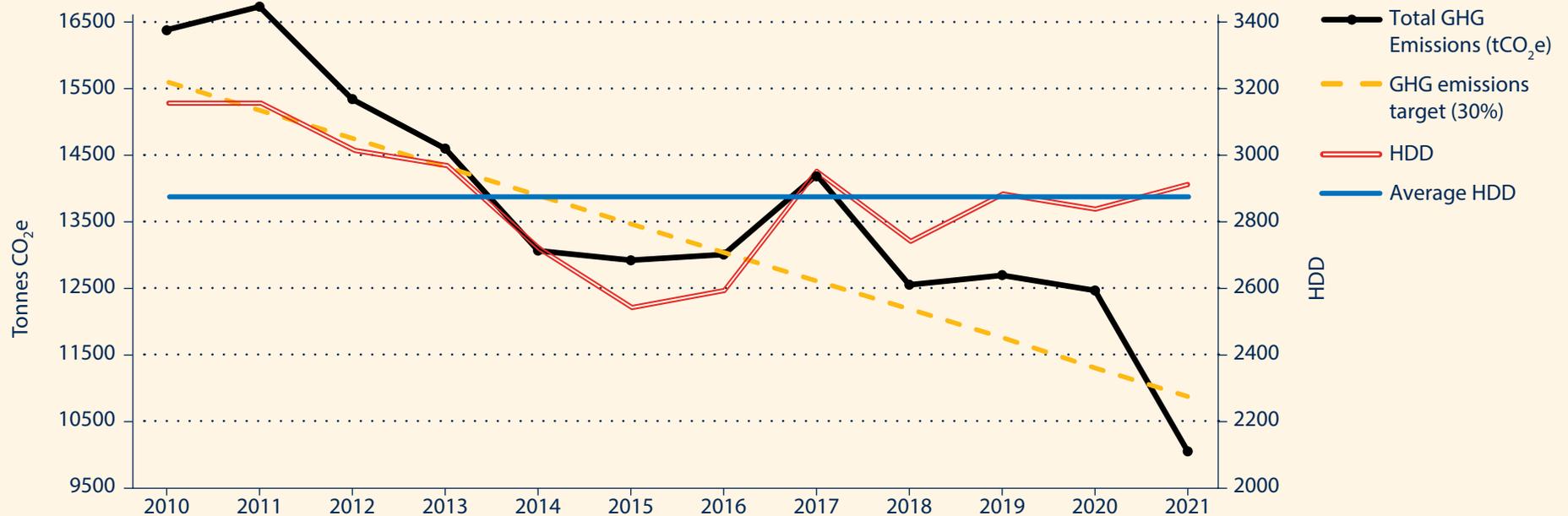


Figure 2: Annual tCO₂e emissions and annual emissions target (calculated from 2021 CO₂e emissions target), relative to annual and average HDD at University of Victoria

EMISSIONS REDUCTIONS

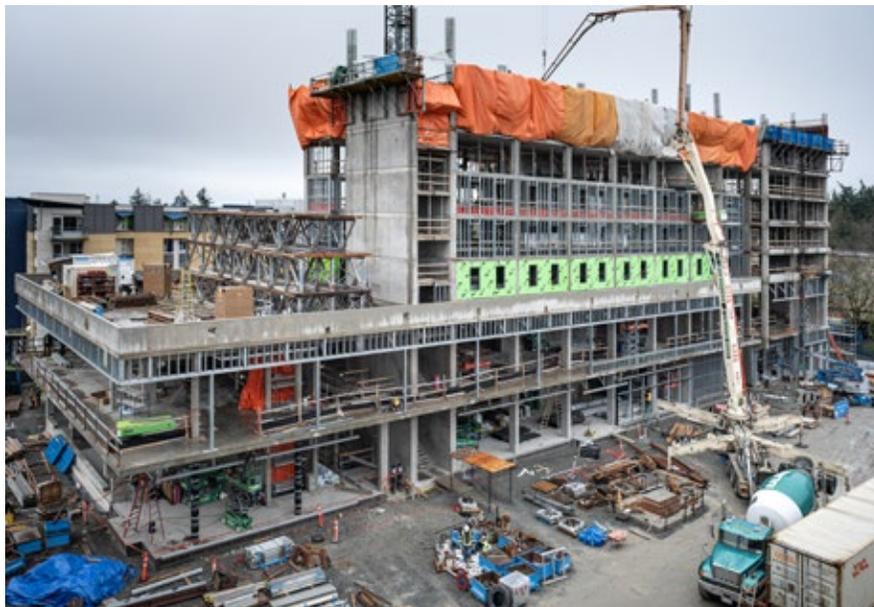
The emissions reductions in all four reporting categories contributed to the university reducing its total emissions to 10,028 tCO₂e.

In fall 2021, UVic transitioned back to on campus teaching and working from primarily online learning and remote working conditions due to pandemic response requirements. Fluctuating campus capacity and operational impacts were still observed throughout 2021. Paper purchases have continued to decrease significantly following many modernization/digitization practices at UVic. It is expected that this downward trend in paper related GHG emissions will continue into the future.

Actions taken in 2021 to reduce emissions

As a Climate Solutions and Sustainability Leader, climate mitigation, adaptation, and sustainability practices must continue to be prioritized across campus operations and planning.

Since 2010, UVic has been carbon neutral. In 2020, the university achieved its goal of 30 per cent reduction in GHGs. Over the course of 2021, the university continued to advance its development of a Carbon Reduction Plan, a new Climate and Sustainability Action Plan (2030), and has committed to the Race to Zero (RtZ) pledge. These efforts, among many others, reaffirm a commitment to accelerate climate action to decarbonize and achieve ambitious Scope 1, 2 and 3 GHG emission targets.



Stationary sources: buildings

Building operations represent the largest portion of UVic's total GHG emissions. The Gordon Head campus itself comprises of 142 buildings built between 1940 and 2019. The Sustainability Action Plan: 2020-2021 and Integrated Energy Master Plan outline actions to reduce energy consumption within buildings through energy efficiency and energy conservation. When launched, the new Carbon Reduction Plan (to replace the Integrated Energy Master Plan) will outline a comprehensive and long-term framework to guide campus development and operations and move to low carbon energy sources.

In 2021, key actions included:

- Ongoing monitoring and data analysis of energy and GHGs, including the identification and assessment of cost-effective, low-carbon alternative energy opportunities compatible with campus energy infrastructure.
- Continued recommissioning studies, optimization work, and lighting upgrades in various UVic buildings (e.g. Cornett Building, Jamie Cassels Centre, David Turpin Building).
- Continued construction of the new Student Housing and Dining Project, which has been designed with the industry's most rigorous sustainability and energy efficiency requirements—passive house.
- Advancement of the Engineering and Computer Science Expansion Project, which includes the construction of a new High Bay Research and Structures Lab and targetting LEED V4 Gold certification and CaGBC Zero Carbon Building (ZCB) certification. To reduce embodied carbon in both buildings, life cycle analysis design strategies have been incorporated, such as mass timber, concrete containing supplementary cementitious material and low carbon cladding.
- Advancement of the Fraser Building Expansion Project, which will house the National Centre for Indigenous Laws (NCIL) and will also target LEED V4 Gold Certification and utilize mass timber construction. A lifecycle cost analysis report was prepared during the schematic design phase of the project to consider various heating and cooling plant options.
- Implementation of a sustainability pledge and holiday shutdown campaign with funding from BC Hydro's Energy Wise network program.
- Advanced efforts in developing a new Carbon Reduction Plan. This plan will provide a long-term and comprehensive framework to achieve a net zero campus by 2040.

Mobile sources: fleet vehicles, off-road/portable equipment

UVic is continuously adopting new strategies to respond to innovative technology and transportation options. Key actions taken in 2021 include:

- Approval of 10 new EV charging stations, which track usage data. Installation began late 2021.
- Planning for the installation of additional EV charging stations and to maintain or replace old charging stations.
- Installation of a Capital Regional District Eco-Counter (for cyclists and pedestrians) at the South Campus Entrance multi-use pathway.
- Ongoing promotional active transportation events such as Go By Bike Weeks.
- Increased annual parking pass fee as an example of a push incentive to encourage the adoption of sustainable transportation.
- Use of staff identification ONECard as an employee bus pass.
- Availability of Evo Car Share Victoria on campus.
- Developing a fleet management/electrification plan (2022-2031).
- Ongoing implementation of the [Campus Greenway Plan](#) and [Campus Cycling Plan](#).
- Planning for the [UVic Transit Exchange Upgrade Project](#). Upgrades include: refurbishments, bus shelters, improved pedestrian pathways and landscaping. Construction commenced in 2022.

Paper consumption

In 2021, UVic observed a 12 per cent reduction of GHG emissions associated with paper use compared to 2020. Approximately 52 per cent of paper purchased comprised of 30% and 100% post-consumer recycled (PCR) content.

2021 was another hybrid learning and work environment for many students, faculty and staff, leading to a continued decrease in paper consumption. Paperless processes have been further streamlined for efficiency and online document sharing and filing systems are more commonly used.

Climate risk management

Climate change is an urgent global issue that leads to profound social, economic and environmental challenges across BC, Canada and throughout the world. UVic recognizes the need for evaluating consequences of a warming climate to inform climate risk decision-making and planning on campus.

UVic currently consults the Capital Regional District [Climate Projections for the Capital Region Report](#) (2017) and the [District of Saanich Climate Risk Assessment Report](#) (2019) to identify climate related risks to campus operations and infrastructure.

Existing strategies and actions to manage climate risks include:

- Electrified HVAC equipment in new buildings to mitigate carbon emissions and provide increased comfort levels.
- Stormwater management features in new buildings that mitigate and manage periods of intense rainfall.
- Low flow plumbing equipment and water conservation infrastructure in new buildings.
- Planting of native trees and shrubs adjacent to pathways to increase shading effects.
- Designing new buildings to achieve thermal comfort for occupant in future climate scenarios.

Future initiatives will to manage climate risks include:

- Conducting a climate risk assessment for the campus to assist the prioritization of investment in adaptation measures.
- Transitioning the District Energy Plant to a low carbon energy source(s).
- Planning, designing and developing campus buildings, utilities, and infrastructure that consider the impacts of climate change over the life of the asset in order to minimize disruptions to campus operations caused by extreme weather events.
- Exploring and advancing decarbonisation strategies, such as HVAC energy efficient upgrades.

OTHER SUSTAINABILITY INITIATIVES

DefaultVeg

The DefaultVeg initiative purpose was to measure UVic food related greenhouse gas emissions and to establish a Scope 3 baseline for 2019. UVic's food emissions results, recommendations and health co-benefits of plant-based diets are outlined in the [DefaultVeg report](#). Campus engagement events were also held to promote plant-based food choices.

EcoVadis Sustainability Assessment Tool

Purchasing Services and the Office of Campus Planning and Sustainability collaborated on a [pilot project with EcoVadis](#), a global sustainability rating company that uses international standards to conduct sustainability performance assessment of supply chain partners. The one-year pilot during 2021, funded through the Campus Sustainability Fund, is the first use of the EcoVadis corporate social responsibility ratings at a Canadian university. The project has been approved to continue through the 2022/2023 fiscal year.

Ongoing development of projects and plans during 2021:

- New [Climate and Sustainability Action Plan \(2030\)](#)—to be launched in 2022.
- New Carbon Reduction Plan that focuses on decarbonizing campus building operations—plan to be launched in 2022.
- Scope 3 Emissions baseline and gap analysis study project for commuting, business travel and waste—ongoing.



SUCCESS STORIES

UVic signs on to Race to Zero campaign

The University of Victoria reinforced its resolve to fight climate change and build a sustainable future by signing on to the Race to Zero (RtZ), a massive global alliance dedicated to reducing carbon emissions to net zero by 2050, if not earlier. The UVic executive council supported signing and submitting the Race to Zero pledge, joining 33 other Canadian universities and colleges, and more than 1,000 higher education institutions worldwide.

Ongoing sustainability focused construction of the new Student Housing and Dining Project

The project demonstrates UVic's commitment to sustainability. Design and construction of the new buildings will meet Leadership in Energy and Environmental Design (LEED) V4 Gold and Passive House standards, the most rigorous global building standards for sustainability and energy efficiency. The Student Housing and Dining Project will contribute to UVic's long-term emission reduction through many decarbonization strategies.

Climate Solutions Navigator

The Climate Solutions Navigator (CSN) initiative convened a cross-campus Working Group to identify and address strategic gaps and opportunities in climate solutions reengagement, awareness and partnerships on campus. In 2021, the group finalized 10 Calls to Action for the University of Victoria's to mobilize a response to the Intergovernmental Panel on Climate Change (IPCC). Many of these calls to action have been adopted into the upcoming UVic Climate and Sustainability Action Plan (2030).



For additional information on sustainability, along with greenhouse gas reporting and energy initiatives at the University of Victoria, please see our website at uvic.ca/sustainability.

