



University  
of Victoria

# 2020 PSO CLIMATE CHANGE ACCOUNTABILITY REPORT

UNIVERSITY OF VICTORIA



Sustainability in action.

May 31, 2021

## EXECUTIVE SUMMARY

This Climate Change Accountability Report (previously known as the Carbon Neutral Action Report) is for the period of January 1, 2020 to December 31, 2020. The report summarizes the University of Victoria's (UVic) greenhouse gas (GHG) emissions, the amount of offsets purchased to reach net zero emissions, the actions undertaken to reduce our greenhouse gas emissions and the university's plans to continue reducing emissions in 2021 and beyond.

In 2020 emissions totalled 10,855 tonnes of CO<sub>2</sub>e (tCO<sub>2</sub>e) emissions, representing a 6 per cent decrease (630 tCO<sub>2</sub>e) over the prior year. The emissions reductions in all four reporting categories contributed to the university reducing its emissions to 9 tCO<sub>2</sub>e lower than the 2021 target of 10,862 tCO<sub>2</sub>e.

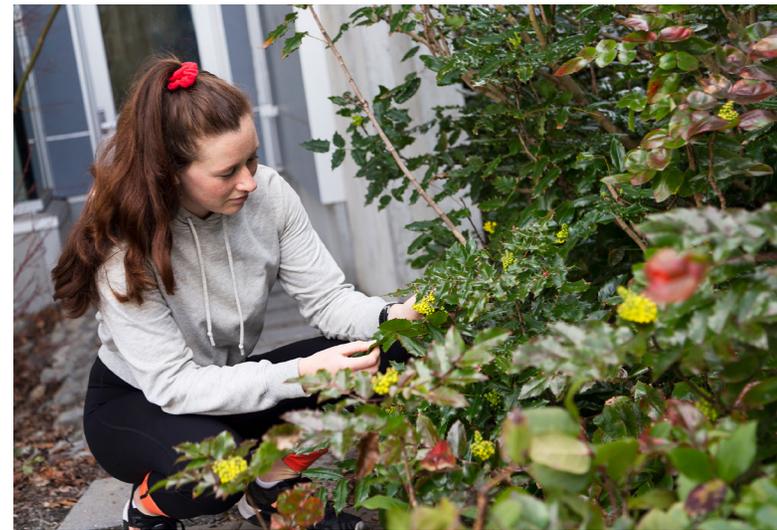
Due to the transition to a remote working environment in March 2020, UVic's faculty members reported a reduction in vehicle usage for research purposes and UVic's paper purchases decreased significantly in the second to fourth quarters of 2020 resulting in larger than normal reductions in these two categories. The university continued to implement several initiatives to reduce building emissions. These included retrofit and optimization programs in campus buildings, energy efficiency studies, continued fleet electrification and behaviour change campaigns. Operational challenges in the commissioning of the District Energy Plant and decommissioning of the district energy loop, have resulted in the university continuing to use both systems. As a result, the anticipated 700 tCO<sub>2</sub>e emission reductions annually have not been fully realized through the new system. The university is continuing to work towards the full commissioning of the District Energy Plant which will further contribute to future reductions in GHG emissions.

In January 2020, the university began construction of the new Student Housing and Dining buildings. The buildings will be designed and constructed to 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. In addition, the university continued the planning phase for several new building projects, taking climate risk in to account in the designs, as well as planning for the new Climate and Sustainability Action Plan and Carbon Reduction Plan.



**Andrew Coward**

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



## DECLARATION STATEMENT

This Climate Change Accountability Report for the period January 1, 2020 to December 31, 2020 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2020 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2021 and beyond.

## EMISSIONS AND OFFSET SUMMARY

The total greenhouse gas emissions UVic is required to offset for 2020 is 10,713 tCO<sub>2</sub>e.

THE UNIVERSITY OF VICTORIA'S 2020 GHG EMISSIONS AND OFFSETS	
GHG Emissions created in Calendar Year 2020	
Total Emissions (tCO <sub>2</sub> e)	10,855
Total BioCO <sub>2</sub>	9
Total Offsets (tCO <sub>2</sub> e)	10,846
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO <sub>2</sub> e)	-133
Grand Total Offsets for the 2020 Reporting Year	
Grand Total Offsets (tCO <sub>2</sub> e) to be Retired for 2020 Reporting Year	10,713
Offset Investment (\$25 per tCO <sub>2</sub> e)	\$267,825.00 (plus GST)

Table 1: 2020 greenhouse gas emissions and offsets for the University of Victoria.

In 2020, the university observed a 630 tCO<sub>2</sub>e decrease in GHG emissions. Figure 2 shows that natural gas, diesel and heating fuel account for 92 per cent of the total emissions (a 2 per cent increase from previous reporting years), while electricity accounts for 5 per cent. Emissions derived from fleet vehicles and paper purchases comprise the remainder.

REPORTING CATEGORY	2019 tCO <sub>2</sub> e	2020 tCO <sub>2</sub> e	% change
SCOPE ONE: University owned buildings & leased spaces: Natural gas, diesel, and heating fuel	10,273	9,853	-3.10%
SCOPE TWO: University owned buildings & leased spaces: Electricity	654	580	-11.30%
SCOPE ONE: Mobile combustion (fleet)	334	257	-23.00%
SCOPE THREE: Paper supplies	224	64	-71%
<b>TOTAL</b>	<b>11,485</b>	<b>10,855</b>	<b>-6%</b>

Table 2: 2019 to 2020 greenhouse gas emissions for the University of Victoria.

Figure 1 on page three demonstrates the university's emissions and annual emissions target relative to the annual heating degree days (HDD) and average HDD. HDD are measured by identifying days with an average temperature below 18oC (heating days) and summing the total number of degrees below that temperature for each day. In 2020, the campus experienced a 2 per cent decrease in HDD compared to 2019. GHG emissions derived from building heat and from building electricity decreased by 3 per cent and 11 per cent, respectively. These reductions were partly a result of a decrease in heating demand in 2020, as shown in Figure 1, and the continued building optimization and retrofit projects completed by UVic's Facilities Management department. In addition, the university is continuing to commission the District Energy Plant and as a result is relying on the district energy loop a back-up method. Due to the partial commissioning of the Plant, the anticipated 700tCO<sub>2</sub>e emission reduction have not yet been observed.

The university is continuing to work towards the full commissioning of the Plant which will further contribute to future reductions.

UVic CO2e and HDD: 2010 to 2020

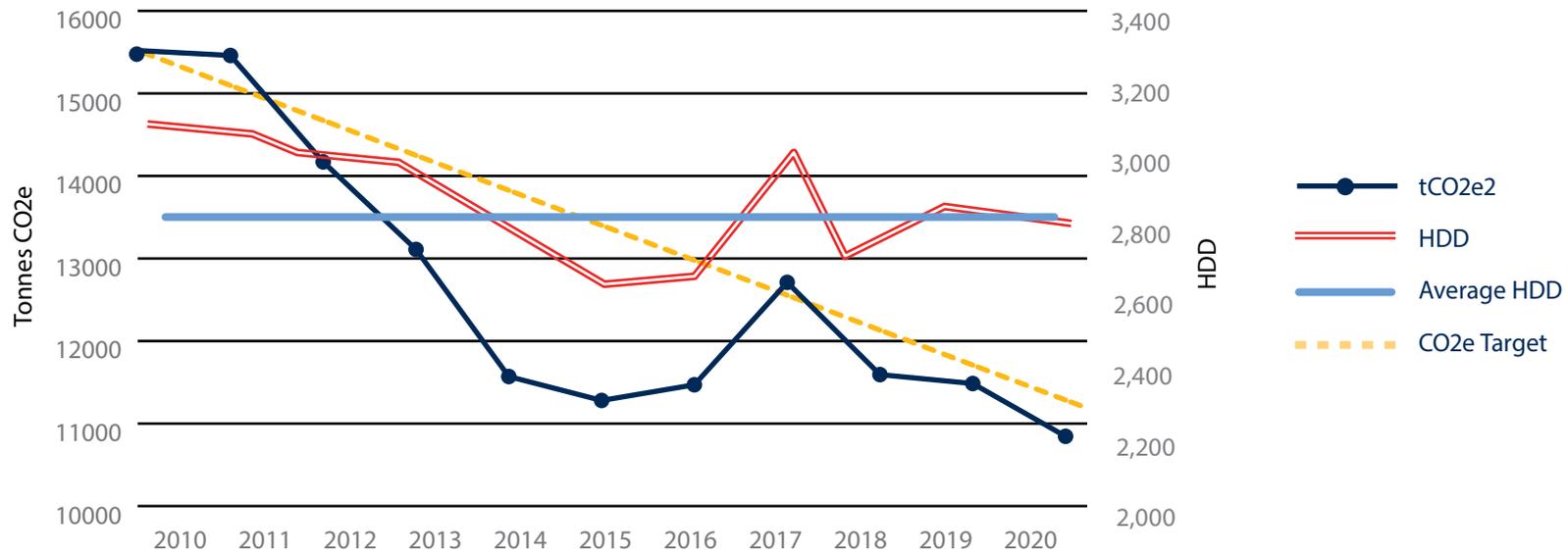


Figure 1: annual CO2 emissions and annual emissions target (calculated based on the 2010 baseline and 2021 CO2e emissions target), relative to annual and average HDD at University of Victoria.

In 2020, UVic achieved its goal to reduce university GHG emissions by 30 per cent, relative to the 2010 baseline.

The emissions reductions in all four reporting categories contributed to the university reducing its emissions to 10,855 tCO2e (9 tCO2e lower than the 2021 target of 10,862 tCO2e). UVic had above average reductions in scope 1 fleet emissions and scope 3 procurement emissions, likely due to the impacts of COVID-19 on the university’s operations. Due to the transition to remote working in March 2020, the university’s paper purchases significantly decreased in the second to fourth quarters of 2020 resulting in a 71 per cent reduction in emissions.

Mobile emissions decreased by 23 per cent in 2020. UVic Facilities fleet accounted for the majority of mobile emissions produced in 2020. The facilities fleet added one used Nissan Leaf and one electric forklift to its fleet during the reporting year. Academic research vehicles consumption also decreased in 2020. The use of these vehicles and vessels fluctuates with research and teaching volume and therefore is expected to change year to year. The 2020 reduction is likely attributed to the reduction in research and field-schools as a result of COVID-19.

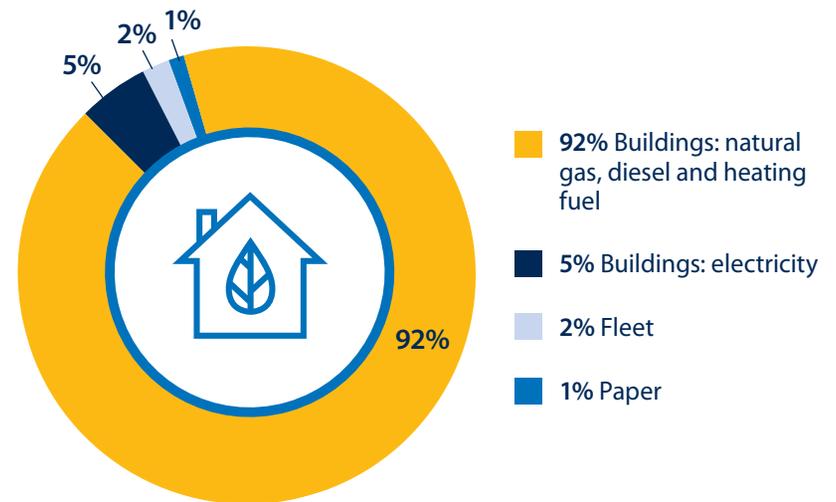


Figure 2: 2020 greenhouse gas emissions percentage of each reporting category for the University of Victoria.

## RETIREMENT OF OFFSETS STATEMENT

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, the University of Victoria (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2020 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.

## OVERVIEW

### Actions taken to reduce greenhouse gas emissions in 2020

The university continued to complete building energy efficiency projects in the 2020/21 financial year, these included:

- Recommissioning studies and projects, optimization work and/or lighting upgrades in the following buildings:
  - Bob Wright Centre
  - Business and Economics Building
  - Campus Services Building
  - Clearihue Building
  - Cornett Building
  - Engineering and Computer Science Building
  - Engineering Lab Wing
  - First Peoples House
  - Human and Social Development Building
  - Ian Stewart Complex
  - Jamie Cassels Centre (previously, University Centre)
  - MacLaurin Building, D-Wing
  - Phoenix Building

In addition, the university completed a CleanBC Low Carbon Electrification Study for Heat Pump Heat Recovery in four buildings and the full Gordon Head Campus received a District Energy Transfer Station Valve Upgrade. These projects contributed to a combined 4 per cent reduction in our building Scope 1 and Scope 2 emissions, relative to the 2019 reporting year.

The university completed several behaviour change campaigns to target GHG emissions. With funding from BC Hydro's Energy Wise network program, the Residence Green Team developed the *Residence Energy Conservation Competition* with the goal to develop an educational campaign to engage residence students in energy conservation behaviours. Through an online competition, the university was able to track the number of energy behaviour pledges completed by each team during the duration of the competition from November to December 2020, over 32 pledges were completed across four teams.

The university continued the electrification of its fleet in the 2020/2021 financial year by purchasing one used Nissan Leaf and one electric Forklift, in total the university has 15 Nissan Leafs utilized by Facilities Management for tool and trade transport. UVic's *Sustainability Action Plan: Campus Operations 2020-2021* outlines further actions to be taken towards harmonizing fleet management with the CleanBC Plan goal of a 40 per cent reduction in fleet emissions by 2030.

In January 2020, the university began construction of the Student Housing and Dining (SHD) buildings. The buildings' design and construction 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. Opting for electric kitchen equipment instead of the industry standard gas-based equipment will decrease the projected GHG emissions for Building 1 by 83%. In addition, the design of the SHD, Engineering Expansion and Fraser Building expansion projects all investigated 2050 climate modelling to reduce future climate risks in the building designs.

## Plans to continue reducing greenhouse gas emissions

UVic will further reduce greenhouse gases in 2021 through the following activities:

- Conduct building optimization and/or light upgrades in the following buildings:
  - Bob Wright Centre
  - Business and Economics Building
  - David Strong Building
  - Engineering Lab Wing
  - Jamie Cassels Centre
- Implement actions identified in the *Sustainability Action Plan: Campus Operations 2020-2021* to further reduce GHG emissions across the university's Scope 1, Scope 2 and Scope 3 emissions portfolios, and begin benchmarking Scope 3 emissions not reported through the Carbon Neutral Program.
- Implement projects through the UVic Revolving Sustainability Loan Fund.
- Commission the District Energy Plant and decommission old equipment.
- Continue fleet electrification and the installation of new EV infrastructure.
- Finalize the planning phases for the Climate and Sustainability Action Plan and the Carbon Reduction Plan, the university's new comprehensive plans to reduce GHG emissions and achieve the university's Strategic Framework's "Promote Sustainable Futures" pillar.
- The Engineering and Computer Science expansion project is targeting CAGBC Zero Carbon Certification.
- The Fraser Building expansion is targeting low-carbon heat pump heating systems.

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](https://uvic.ca/sustainability).

