



2018  
Carbon Neutral  
Action Report



## Executive Summary

Vancouver Island University is deeply committed to supporting equitable access to education, and fostering engaged, active, life-long learning which are both crucial to a flourishing environment, vibrant economy, and thriving community. Creating space for excellence in learning and teaching opportunities and honouring multiple ways of knowing allows VIU to contribute to the well-being of the people of Vancouver Island and coastal British Columbia through our dedication to students, employees, and the community we serve. VIU is fortunate to reside on the territories of the Snuneymuxw, Tla'amin, Snaw-naw-as and Quw'utsun peoples and deeply appreciates the richness, breadth and depth of knowledge these partnerships bring to the institution.

### Declaration Statement

This Carbon Neutral Action Report for the period January 1, 2018 to December 31, 2018 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2018 to reduce our greenhouse gas emissions, and our plans to continue reducing emissions in 2019 and beyond.

By June 30, 2019 Vancouver Island University's final *Carbon Neutral Action Report* will be posted to our website at [viu.ca/sustainability/carbon-neutral-action-report](http://viu.ca/sustainability/carbon-neutral-action-report).

## Operational Activities

VIU completed three major construction projects in 2018; the Health & Science Centre (HSC), the Automotive, Marine and Trades Renovation (AMTR) project, and the Geo-Exchange Energy project. As the HSC will be heated and cooled via the GeoExchange system--which utilizes the constant temperature of water in the defunct and flooded mine shafts under the Nanaimo campus site--we anticipate a low energy intensity (equivalent kWh/m<sup>2</sup>) and emissions intensity (kgCO<sub>2</sub>equivalent/m<sup>2</sup>) for this building.

The GeoExchange project, as well as allowing VIU to decrease its Greenhouse Gas (GHG) output, is a terrific teaching and learning tool that will undoubtedly spark imagination around responsible and innovative energy production as well as create graduates who will become inspired and creative change-makers. The AMTR involved a number of upgrades and renovations that not only aid in responsible energy use, but provide a forum for students to learn how to make best possible use of resource and to encourage them to improve on established practice. Both the HSC and AMTR are slated to achieve LEED® Gold and Silver certification respectively.

Construction projects took front and centre in 2018, but other projects also contributed to VIU's efforts to reduce its environmental impacts. Lighting replacement using LED bulbs as well as housing designed to minimize light pollution were installed. In addition, multiple water-cooled condensing units were replaced with air-cooled units avoiding the use of more than 22 million litres of potable water annually—equivalent to around nine Olympic-size swimming pools!



*"The system runs on two water loops. The first is a mine water loop and the second is an ambient water loop. Both rely on two wells that have been drilled on campus. The mine water loop will bring the water to the surface, direct it through a pump house and then back to the mine. The ambient water loop takes the water from the pump house, sends it to buildings that are attached to the system, then returns it back to the pump house where the water rejoins the mine water loop."*

<https://ur.viu.ca/campus-development/district-geo-exchange-energy-system>

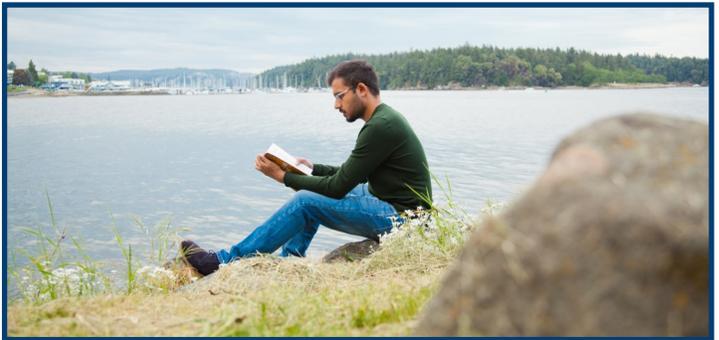


<https://www.nanaimobulletin.com/news/viu-opens-multi-million-dollar-health-and-science-centre/>

## Sustainability Engagement and Initiatives

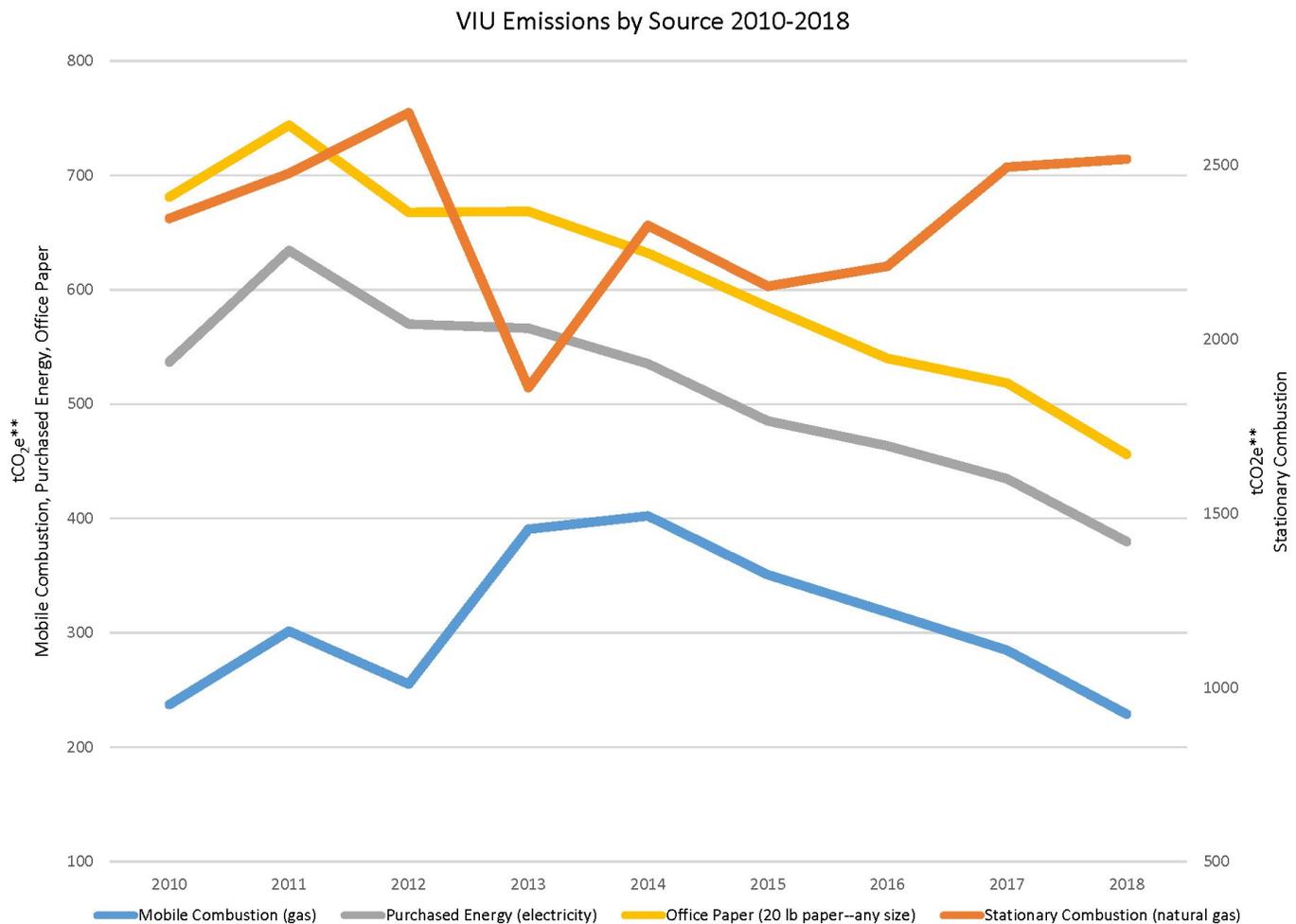
VIU strives to create and support a culture of sustainable practice. The United Nation's Sustainable Development Goals (SDGs) have created comprehensive scaffolding from which to embed sustainability in all aspects of the university. Sustainability is a central part of many courses offered on campus, and is a significant strand in numerous others. The Sustainability Advisory Committee is active in fostering development of sustainability across curricula, the Mount Arrowsmith Biosphere Region Research Institute employs students in various research projects and initiatives in the region that range from biodiversity monitoring to wetland mapping, the Centre for Experiential Learning connects students with research that has a sustainable focus, and sustainability initiatives run by the sustainability area of the Facilities and Ancillary Services office provides many opportunities for students and employees to be involved with both on- and off-campus initiatives that span behaviours from turning off unneeded lights to encouraging participation in active transportation.

Multi- and inter- disciplinary, cultural, and generational partnerships are fundamental in forming and cultivating this community of practitioners and connecting with others. VIU greatly values its established partners and actively builds on collaboration, practice, and scholarship to forge sustainable best practice and resilience locally and globally.



## Looking to the Future

Through a combination of operational, educational, and behavioural actions, VIU's emissions are on a downward trend as evidenced by Figure 1 – Emissions by Source. VIU looks forward to continuing actions that will reduce its emissions through replacing aging equipment and vehicles with more efficient models, lighting upgrades, and general building maintenance. Collaborative projects and research into areas of policy development and practice, such as procurement, which will impact GHG emissions on a wide scale are continuing, and best practices in facility use will be reviewed. With its growing circle of partnerships and outreach, VIU's expertise and capacity are adding depth to engagement and scholarship opportunities that will ensure the campus and community are well able to take informed and effective action in sustainability and GHG reduction.



**\*\*Each greenhouse gas has been converted to a standard measurement (tCO<sub>2</sub>e) by multiplying its emissions by its global warming potential (GWP). The Totals for tCO<sub>2</sub>e are shown here rounded to the nearest whole metric tonne.**

*Note that Stationary Combustion (natural gas) scale is shown on the right-hand axis.*

## Emissions and Offset Summary Table

### Vancouver Island University

Emissions and Offset for 2018 (tCO<sub>2</sub>e)

#### GHG Emissions created in Calendar Year 2018

Total Emissions (tCO <sub>2</sub> e)	2995.0
Total BioCO <sub>2</sub>	9.1
Total Offsets (tCO <sub>2</sub> e)	2974.0

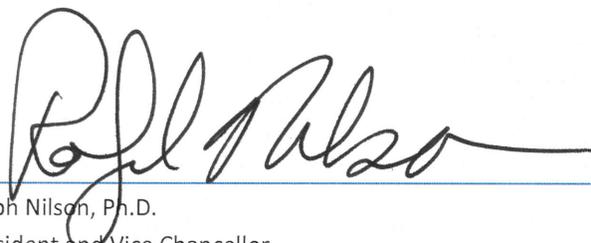
#### Adjustments to GHG Emissions Reported in Prior Years

Total Emissions (tCO <sub>2</sub> e)	0.0
Total Offsets (tCO <sub>2</sub> e)	0.0

#### Grand Total Offsets for the 2018 Reporting Year

Grand Total Offsets (tCO <sub>2</sub> e)	2974.0
Total Offset Investment	\$74350.00

*\*Total Offsets do not equal Total Emissions minus Total BioCO<sub>2</sub> because offset exemptions for school buses are included within Total Emissions.*



Ralph Nilson, Ph.D.  
President and Vice Chancellor  
Vancouver Island University

May 31, 2019

## Retirement of Offsets

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, Vancouver Island University (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2018 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy 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 1: CNAR Survey

## 1. General Information

**Name:** Margot Croft

**Contact Email:** margot.croft@viu.ca

**Organization Name:** Vancouver Island University

**Sector:** Post Secondary

**Role** - Please select your role(s) below.

*If more than one individual completed the survey, multiple categories may be selected:*

Energy Manager: No

Sustainability Coordinator: No

Administrative Assistant: Yes

Facilities/Operations Manager/Coordinator: No

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

### A. Stationary Sources (e.g. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

#### 1. Actions taken by your organization in 2018 to support emissions reductions from buildings.

##### a) Do you have a strategy to reduce emissions from stationary sources?

Yes

If yes above, what are the main goals?: Develop capacity of geo-exchange system

##### b) Whether you have a strategy or not (1.a), briefly describe your organization's plans to continue reducing emissions from stationary sources:

###### I. Over the medium-term term (1-5 years)

Develop capacity of geo-exchange system

Develop and build buildings to at least LEED Gold specifications

Connect new buildings to the geo-exchange system

###### II. Over the long term (6-10 years)

Develop capacity of geo-exchange system

Develop and build buildings to at least LEED Gold specifications

Connect new buildings to the geo-exchange system

###### I. If yes, have you included the associated emissions in your reporting?

No

I. How many newly constructed buildings did not receive LEED Gold certification?: 0

II. Please explain why LEED Gold certification was not obtained.

Certification is being sought, but not yet granted.

## B. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

### 3. Actions taken by your organization in 2018 to support emissions reductions from mobile sources.

#### a) Do you have a strategy to reduce emissions from mobile sources?

Yes

##### I. If yes, what are its goals?

Replace end-of-life vehicles with higher efficiency vehicles, or replace with hybrid or EV vehicles as practicable

#### b) Whether you have a strategy or not (3.a), briefly describe your organization's plans to continue reducing emissions from mobile sources:

##### I. Over the medium-term term (1-5 years)

Increase infrastructure to support EV vehicles

##### II. Over the long term (6-10 years)

Replace end-of-life vehicles with higher efficiency vehicles, or replace with hybrid or EV vehicles as practicable

#### c) How many fleet vehicles did you purchase from the following categories:

Electric Vehicle – EV - (e.g., Nissan Leaf, Chevy Bolt): 1

"Plug In" Electric Vehicle – PHEV (e.g., plug-in Prius, Chevy Volt): 1

Gas/diesel vehicle: 3

##### I. If you purchased new gas/diesel vehicles, can you briefly explain why vehicles from the other categories were not chosen?

Other vehicle categories do not currently have the capacity to perform the needed functions as the purchased gas vehicles.

#### d) How many existing EV charging stations does your organization have in each category:

level 2: 4

level 3: 0

How many level 2 stations (if any) are specifically for your fleet vehicles: 0

How many level 3 stations (if any) are specifically for your fleet vehicles: 0

#### e) How many EV charging station(s) did you install in 2018 in each category:

level 2: 4

level 3: 0

How many level 2 stations (if any) were installed specifically for your fleet vehicles: 0

How many level 3 stations (if any) were installed specifically for your fleet vehicles: 0

#### 4. Please indicate the number of the vehicles in the following vehicle classes that are in your current fleet (including any purchased in 2018):

Definitions:

- Light duty vehicles (LDVs) are designated primarily for transport of passengers <13 and GVWR<3900kg
- Light duty trucks (LDTs) are designated primarily for transport of light-weight cargo or that are equipped with special features such as four-wheel drive for off-road operation (include SUVs, vans, trucks with a GVWR<3,900kg )
- Heavy duty vehicles (HDV) includes vehicles with a GVWR>3,900 kg (e.g. ¾ tonne pick-up truck, transport trucks)

##### a) Light duty vehicles (LDVs)

Electric Vehicles – EV - (e.g., Nissan Leaf, Chevy Bolt): 1

“Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt) : 1

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid): 1

Gas/diesel: 9

##### b) Light duty trucks (LDTs)

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV: 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Ford Escape Hybrid, older Chevrolet Silverado pickup hybrid etc): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 24

##### c) Heavy duty vehicles (HDV)

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 3

Gas/diesel: 28

### C. Office Paper: Indicate which actions your PSO took in 2018:

#### 6. Actions taken by your organization in 2018 to support emissions reductions from paper supplies.

##### a) Do you have an Office Paper strategy?

Yes

##### I. If yes, what are its goals?

To use 30% or higher recycled content

**b) Whether you have a strategy or not (6.a), briefly describe your organization's plans to continue reducing emissions from paper use:**

I. Over the medium-term (1-5 years)

Implement print management software across campus  
Encourage paperless meetings and class assignments

**c) Have an awareness campaign focused on reducing office paper use**

No

**d) Purchased alternate source paper (bamboo, hemp, wheat, etc.)**

Yes

**e) Other actions, please specify.**

Note that in d) individual departments make that paper choice