



2019

# Carbon Neutral Action Report

Okanagan College





# 2019 Carbon Neutral Action Report

## Okanagan College

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### Declaration Statement:

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

### Overview

Okanagan College continues to develop and enhance its focus on sustainability from the perspective of an organization with a responsibility for education, training and community development, and from the perspective of an organization that is focused on achieving carbon neutrality.

The *Okanagan College Strategic Plan* identifies the need to address the human and financial resources, infrastructure, and environmental challenges that will accompany anticipated demographic, economic and social changes.



- Complete and implement a sustainability plan that addresses environmental, financial and social sustainability.
- Seek additional sources of funding to sustain and further develop the College.
- Ensure there are sustainable operations in each of the four regions.
- Augment the College's human resource plan through improved strategies in key areas such as succession planning, employee development and the recruitment and retention of a diverse employee base.

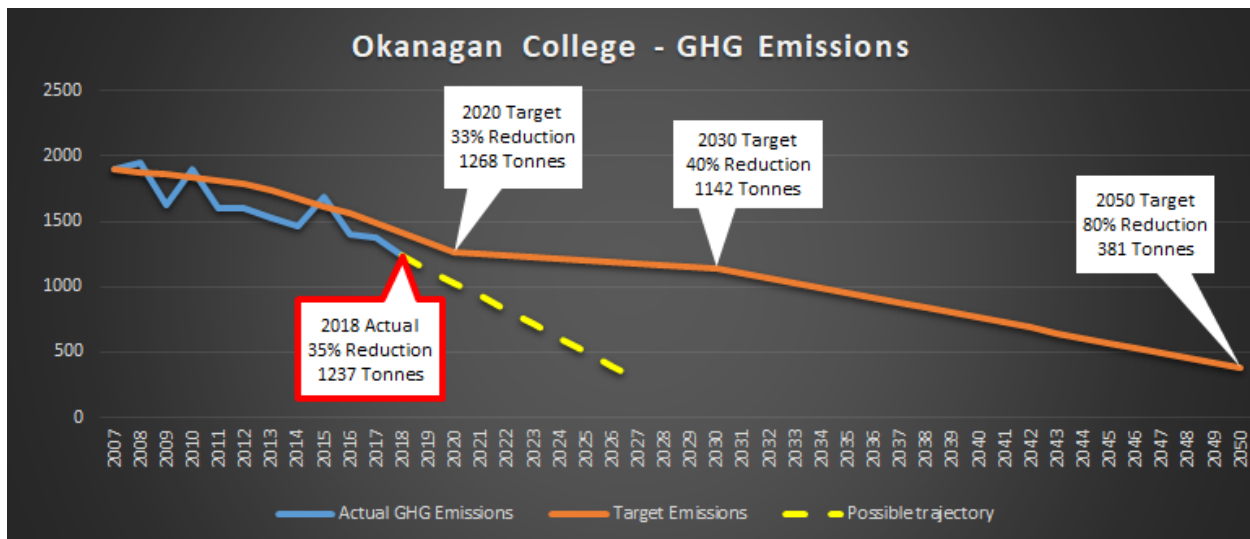
The College continues to participate in the **STARS** program – (**Sustainability Tracking and Assessment Rating System** administered by the Association for the Advancement of Sustainability in Higher Education). The process involves a rigorous examination of practices, policies, and achievements that contribute to sustainability. Okanagan College currently holds a Silver rating and is planning to resubmit in 2020 to help establish new benchmarks and targets going forward –





particularly with regards to our greenhouse gas emissions. Conveniently, many of the activities which improve our STARS scoring are also directly aligned with our carbon reduction initiatives.

The quest for improvement is ongoing. The institution has established goals for itself to exceed the provincially mandated Bill 44 targets for carbon emissions with an annual carbon emission reduction of 80 tons per year. We are still managing to stay ahead of that pace and managed to reach the 2020 target by 2018, a full 2 years ahead of schedule. While this progress is comforting, the Paris Accord and follow-up 2018 report from the IPCC (Intergovernmental Panel on Climate Change) have illustrated that there is a global need for more ambitious targets which inspired Okanagan College to begin development of a more aggressive carbon reduction plan. While this plan is still under development, the understanding that stronger targets are necessary is still helping guide decision making.



Part of Okanagan College's commitment to sustainability has involved giving greater voice and visibility to the topic. It starts with new staff orientation – sustainability is a featured topic in those sessions that introduce employees to the values and vision, policies and practices of the institution. The College continues this commitment by providing guided tours of our various low carbon buildings where we share our strategies for low carbon construction and operation.





## **Success Stories and Emissions Reductions Activities/ Initiatives in 2019**

### **Infrastructure**

#### **Penticton Welding**

This 4500 ft<sup>2</sup> facility, has been now been officially certified as LEED Gold. It comes complete with an exhaust air heat recovery system which allows exhaust control from each individual workstation to optimize heating requirements and minimize related carbon emissions.

#### **Vernon Trades**

This facility boasts over 14,000 ft<sup>2</sup> of energy efficient design, heated by ultra-high efficiency condensing boilers with a roof top covered with approximately 90KW of solar photovoltaic panels providing electricity to this building as well as to the rest of the campus, when opportunity allows. LEED Gold certification has been submitted and is awaiting final certification.

#### **Health Sciences Centre – Under Construction**

Construction work on this project began in 2018 and will be completed in 2020. The 30,000 ft<sup>2</sup> project is pursuing multiple green construction certifications including LEED Gold and the WELL building standard. Most significant from a Carbon perspective is that the building is one of the Pilot Projects for the new Carbon-Zero building standard developed by the Canadian Green Building Council. This requires us to consider embodied carbon from all construction materials, carbon free operation, renewable energy and optimized design to minimize heating requirements.





All these projects allow Okanagan College the infrastructure and opportunities to share construction best practices with our students and the communities we serve.

The College will continue to leverage the technology, passion and creativity inherent in these buildings to be an agent of change for the larger community, drawing on the interests and expertise of staff and students to advance our intentions regarding sustainability and carbon reduction.

### **Purchasing / Consumption**

Our *Pay for Print* program continues to help staff better understand their own printing habits and usage patterns.

### **Transportation**

Two electric car charging stations were added to the Automotive shop for training purposes, which bring the total to 15 level-two stations. Two more will be added in 2020 as part of the Health Science Center project.



From an active transportation perspective, continued participation in the “Ride to Work Week” programs allowed us to educate and engage staff and students while upgraded, secure bike storage facilities help attract more riders.

Discussions with various car-share, bike-share and even scooter-share companies have intensified and an updated sustainable transportation plan is in the works. As our enrollment increased again in 2019, promotion and expansion of our car-pooling program continues to be one of the most effective capacity management strategies.

### **Policy & Planning**

Our *Strategic Plan 2016-2020*, which includes *Sustainability* as one of our *Core Values*, continues to help guide our long term planning. The STARS sustainability tracking system is the tool we use to measure our progress and we are currently preparing for an anticipated 2020 submission.



## **Education and Engagement**

As noted earlier, sustainability continues to be a key element in our orientation processes for new staff and students.

## **Plans to Continue Reducing Greenhouse Gas Emissions 2019 and beyond**

The pursuit of the Carbon Zero designation for the new Health Sciences Centre requires us to develop a strategic “Zero Carbon Transition Plan” for the entire Kelowna campus which includes energy reduction strategies, deep energy retrofits to some of our older buildings as well as an expansion of the central heat pump plant which uses treated effluent from the neighboring waste water treatment plant as the heat source. The design work started in 2018 and the full plan (including all campuses) will be proposed to begin in 2020 and phased over several years. When fully implemented, this would account for a **GHG reduction of approximately 65%** of our baseline emissions, which would be a big step towards our mandated 80% reduction by 2050.

Using Lean methodology, we are constantly reviewing administration processes in different departments to encourage reducing, where practical, unnecessary paper-based filing systems.

Continued monitoring of our fleet vehicles and usage patterns as well as technology developments in video conferencing will help us optimize travel related emissions.

## **Emissions and Offset Summary Table:**

| <i>Okanagan College GHG Emissions and Offsets for 2019</i>  |          |
|---|----------|
| <b>As per the <a href="#">Directive</a> issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.</b> |          |
| Total Emissions (tCO <sub>2</sub> e)  | 1,237.84 |
| Total BioCO <sub>2</sub>  | 1.84     |
| Total Offsets (tCO <sub>2</sub> e)  | 1236.0   |
| Offset Investment (\$25 per tCO <sub>2</sub> e)   | \$30,900 |






## Retirement of Offsets:

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, **Okanagan College** (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2019 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.

## Executive sign-off:

|   |               |
|---|---------------|
|  | June 23, 2020 |
| Signature   | Date          |
| Jim Hamilton  | President     |
| Name (please print)   | Title         |



**Confirmation number:** 00C56282

**Submitted date:** 2020-06-30 12:03:21 Pacific Daylight Time

# Carbon Neutral Action Report Survey - 2019

Public sector organizations (PSOs) are required to complete this survey, in addition to a Carbon Neutral Action Report (CNAR) as mandated by BC's [Climate Change Accountability Act](#) and the [Carbon Neutral Government Regulation](#).

Due to the COVID-19 pandemic, the following [Directive](#) was issued on March 31, 2020. Certain deadlines were also extended for the 2019 reporting year (see below).

## March 31, 2020 Directive:

*Under my authority as the Director for the purposes of the Act, and under the authority delegated to me in Section 6 of the Carbon Neutral Government Regulation, I hereby direct that all ministries and Public Sector Organizations covered by the Carbon Neutral Government requirement shall use their 2018 GHG emissions as a temporary estimate for their actual 2019 GHG emissions, for the purposes of the 2019 Carbon Neutral Action Reports and 2019 Carbon Neutral Government reporting required under the Climate Change Accountability Act.*

Neil Dobson, Executive Director, Clean BC Implementation  
Climate Action Secretariat

Although 2018 emissions data will be used as a placeholder for 2019, **all other (qualitative) components of the CNAR and CNAR Survey are to be completed with information from 2019 (e.g., actions taken or planned to reduce emissions)**. The only change to the survey is that the deadline was extended by one month to June 30, 2020.

This survey is divided into two parts:

**Part 1** - Will be made public on the Climate Action Secretariat (CAS) [website](#) after June 30, 2020; however, it will not be appended directly to each individual PSO CNAR as was done in previous years. This section collects details about actions taken or planned to reduce emissions and is intended to supplement the legislative requirements in your CNAR.

**Part 2** - Will NOT be made public. Information you provide in this section is important and will be used internally to help CAS staff with planning for emissions reduction and climate change adaptation initiatives. Although not required, PSOs are highly encouraged to complete Part 2.

**Note:** Survey progress can be saved at any time by clicking the "Save and continue later" button at the bottom of each page. A new window will open and you will be asked to provide your name and email. An email will be sent to you from [Carbon.Neutral@gov.bc.ca](mailto:Carbon.Neutral@gov.bc.ca) with the subject line: "Questionnaire Link", which will include a hyperlink for the "Project: Carbon Neutral Action Report Survey – Broader Public Sector 2019". You can then continue responding at another time or email the hyperlink to a colleague to complete remaining section(s).

|                |   |
|----------------|---|
| May 29, 2020   | <ul style="list-style-type: none"><li>The final, signed version of the <b>CNAR</b> (or Small Emitters Form) must be submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a></li></ul>   |
| June 30, 2020* | <ul style="list-style-type: none"><li>Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG <a href="#">website</a> and each PSO is encouraged to post the report on their website.</li><li>The <b>CNAR Survey</b> (optional for Small Emitters) must be completed and submitted online.<br/>*Deadline extended from May 29, 2020.</li><li><u>All offset invoice payments must be submitted to CAS.</u></li></ul> |
| Sept 30, 2020* | <ul style="list-style-type: none"><li><b>Clean Government Reporting Tool (CGRT) Data Entry</b> must be completed for the 2019 reporting year.</li></ul>   |



|               |  |
|---------------|--|
|               | *Deadline extended from April 30, 2020.  |
| Oct 15, 2020* | <ul style="list-style-type: none"> <li>• <b>Self-Certification checklist</b> must be completed, signed and submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a>.</li> </ul> *Deadline extended from May 15, 2020. |

\*See the [Carbon Neutral Government – Program Requirements website](#) for more information on program requirements, timelines and templates.

## PART 1 - Included as part of your public CNAR report.

Reminder that Part 1 will be made public on the CAS [website](#).

|  |
|--|
| <b>Contact Name:</b>   |
| <i>Robert St.Onge</i>  |
| <b>Contact Email:</b>  |
| <i>rstonge@okanagan.bc.ca</i>  |
| <b>Organization Name:</b>  |
| <i>Okanagan College</i>  |
| <b>Role – Please select the best category for your current role with your organization. If more than one individual completed the survey, multiple categories may be selected:</b> |
| Energy Manager<br>Sustainability Coordinator   |
| <b>Please select your sector:</b>  |
| Post Secondary (PS)  |

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

Actions taken by your organization in 2019 to support emissions reductions from buildings

|  |
|--|
| <b>Do you have a strategy to reduce emissions from stationary sources?</b> |
| Yes  |

Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from stationary sources:

|  |
|--|
| <b>Over the medium-term term (1-5 years)</b>   |
| <i>Improvements to HVAC control strategies - supported by controls upgrades.<br/>           Boiler upgrades - supported by retrofit rebates and CNCP program.<br/>           Deep energy retrofits to older buildings<br/>           Development of Carbon Zero transition plans for all campuses:</i> |
| <b>Over the long term (6-10 years)</b>   |
| <i>Begin implementation of Carbon Zero plans.</i>  |

Please describe your strategy's goals (if any) related to energy audits.

*Energy Audits have been performed on all buildings within the last 10 years. These are used to identify best opportunities for deep energy retrofits .*

What % on average of your building portfolio has an energy audit completed each year (if any)?

0

Please describe your strategy's goals (if any) related to building retrofits.

*When retrofitting buildings, we look for the following opportunities :  
Employ exhaust air heat recovery. Transition to low temp heating water.  
Isolate HVAC zones so we can heat only areas that are occupied.  
Upgrade to LED lighting*

What % on average of your building portfolio is retrofitted each year in the following categories (if any) - click here for further information:

25

Minor retrofits (e.g. low cost, easy to implement measures including caulking, lighting, adding roof insulation, etc.)

10

Major retrofits (e.g. replacing windows and doors, equipment replacement such as boilers, etc.)

10

Deep retrofits (e.g. replacing roof, replacing the heating, ventilation and air-conditioning system with a renewable technology like a ground-source heat pump, etc.)

5

Please describe your strategy's re/retro-commissioning goals (if any)?

*Our retro-commissioning program is ad-hoc and dependent upon budget availability. It is usually hand led in-house with support from our controls contractor.*

What % on average of your building portfolio do you recommission each year?

5

Do you keep records of Refrigerant gases<sup>1</sup> category and refilling volumes?

[1] Fugitive emissions from stationary cooling equipment are attributed to the leakage and loss of HFC and PFC based coolants from air conditioning and commercial type refrigeration systems. Coolant loss can occur during the manufacturing, operation, and disposal of such equipment. Gases that may be reported via CGRT include HFC R-134, HFC R-134a, HFC R-404a, HFC R-407c, HFC R-410a.

Yes

If yes, have you quantified and reported the associated emissions? What, if any, mitigation approaches have been considered? Please describe

*No.*

*Using the decision making tree from the Best Practices Guide (Annex 3), we fall in the "Emissions fall under 1% rule". We have a limited number of cooling and air conditioning systems using refrigerant.  
All of our refrigeration work is subcontracted to licensed refrigeration mechanics who are aware of our need to track any significant leaks. We had no such leaks again in 2019.*

What, if any, mitigation approaches have been considered? Please describe.

*See above.*

How many newly constructed buildings received at least LEED Gold certification in 2019?

*We had 2 buildings, Vernon Trades and Penticton Welding both submitted for LEED Gold at the end of 2019.*

How many newly constructed buildings did not receive LEED Gold certification?

0

Please explain why LEED Gold certification was not obtained for those new buildings.

n/a

Other actions? Please describe briefly:

n/a

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

Actions taken by your organization in 2019 to support emissions reductions from mobile sources?

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

Yes

Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from mobile sources:

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

*Fleet use is monitored and assessed annually to ensure maximum utilization within specific working groups. Based on the latest annual assessment one (1) service vehicle was removed from service. (Penticton Campus)*

Over the long term (6-10 years)

*Continued assessment of operational need and mobile use to enable data to support reduction of assets.*

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

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

0

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

0

Hybrid vehicle – HEV – non “Plug In”- (e.g., Toyota Highlander Hybrid)

0

Hydrogen fuel cell vehicle

0

Natural gas/propane

0

Gas/diesel vehicle

1

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

*This was a strategic replacement of a 1-ton delivery van - decision was based upon fuel efficiency and initial cost. Settled on a newer, more fuel efficient model.*

## Actions taken by your organization in 2019 to support emissions reductions from mobile sources? (Continued)

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

Level 2?

14

Level 3?

0

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

As defined as Level 2 stations only your organization's fleet vehicles may use

0

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

As defined as Level 3 stations only your organization's fleet vehicles may use

0

How many EV charging station(s) did you install in 2019 in each category:

Level 2?

2

Level 3?

0

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

As defined in the previous section

0

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

As defined in the previous section

0

Please briefly describe any other related actions, (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

*Added two Level-2 chargers in the Automotive shop for educational purposes.*

Please indicate the total number of the vehicles in the following vehicle classes that are in your current fleet

**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)

Light duty vehicles (LDVs)

|  |
|--|
| Electric Vehicles – EV - (e.g., Nissan Leaf, Chevy Bolt)                               |
| 0  |
| “Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt)                 |
| 0  |
| Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid) |
| 3  |
| Hydrogen fuel cell vehicles  |
| 0  |
| Natural gas/propane  |
| 0  |
| Gas/diesel   |
| 4  |

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  |
| 6   |

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                           |
| 0   |
| Gas/diesel                                    |
| 1   |

Actions taken by your organization in 2019 to support emissions reductions from paper supplies.

Briefly describe your organization’s plans to continue reducing emissions from paper use:

|  |
|--|
| Over the medium-term (1-5 years)   |
| <i>A study is being undertaken to assess the impacts (printer function and cost) of increased recycled content.<br/>Expansion of 'docusign' instead of paper-based invoice approval.<br/>We also anticipate that Covid-19 will push staff and student to more on-line learning which will likely reduce printing levels significantly, post Covid.</i> |
| Over the long term (6-10 years)  |
| <i>Continued expansion of technology options - particularly digital storage as opposed to bookshelves.</i>   |
| Do you have an awareness campaign focused on reducing office paper use?  |
| Yes  |
| Purchased alternate source paper (bamboo, hemp, wheat, etc.)   |
| No   |
| Other 2019 actions, please specify   |
| <i>Implemented 'docusign' as a trial basis.</i>  |