

2018

Carbon Neutral Action Report

Okanagan College



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Declaration Statement:

This Carbon Neutral Action Report for the period of January 1st 2018 to December 31st 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 Okanagan College's final *Carbon Neutral Action Report* will be posted to our website at https://www.okanagan.bc.ca/Campus_and_Community/Sustainability.html

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.

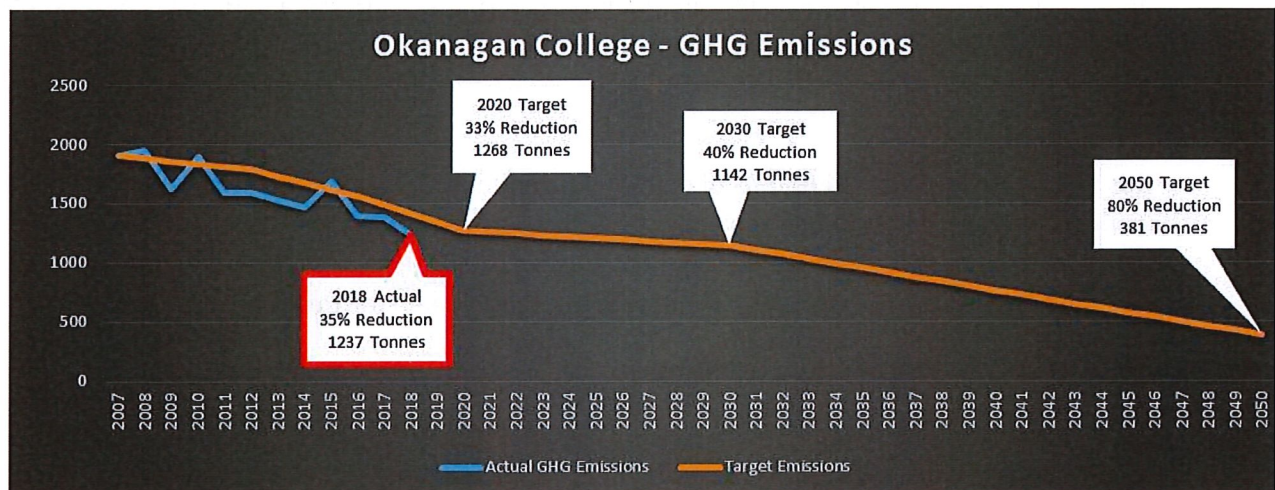


- Complete and implement a sustainability plan that addresses environmental, financial and social sustainability.
- Seek additional sources of funding to sustain and further develop the College.
- Ensure there are sustainable operations in each of the four regions.
- Augment the College's human resource 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 2019 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 **have now reached our 2020 target, 2 years ahead of schedule!**



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 2018

Infrastructure

Penticton Welding

This 4500 ft² facility, has been designed to meet LEED Gold and is currently awaiting certification review. 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 ft² 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 is also anticipated for this project.

Health Sciences Centre – Under Construction

Construction work on this project began in 2018. The 30,000 ft² 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

Negotiations are underway with MODO which will see some of our fleet vehicles transitioned from our exclusive fleet to a Car Share Co-Op model. This will provide vehicle convenience throughout the day for staff and students who choose to commute to and from the college using alternative transportation.

Continued participation in the “Ride to Work Week” and “ICBC Commuter Challenge” programs allow us to educate and engage staff and students.

Two more electric car charging stations were added on our Vernon campus and three more are in the planning stage for the Kelowna campus (including one in the Automotive shop for training purposes). This will bring the total to fifteen Level 2 stations. A business case is also under development for a Level 3 station.

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 2019 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” 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 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</i> GHG Emissions and Offset for 2018 (TCO ₂ E)	
GHG Emissions created in Calendar Year 2018 :	
Total Emissions (tCO ₂ e)	1237
Total Offsets (tCO ₂ e)	1236
Adjustments to GHG Emissions Reported in Prior Years :	
Total Emissions (tCO ₂ e)	0
Total Offsets (tCO ₂ e)	0
Grand Total Offsets for the 2018 Reporting Year :	
Grand Total Offsets (tCO ₂ e)	1236

Retirement of Offsets:

In accordance with the requirements of the *Greenhouse Gas Reduction Targets 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 2018 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment ensuring that these offsets are retired on the Organization's behalf, the Organization will pay the associated invoice to be issued by the Ministry in an amount equal to \$25 plus GST per tonne of offsets retired on its behalf.

Executive sign-off:



Signature

Jim Hamilton

Name (please print)

17 June, 2019

Date

President

Title

Part 1: CNAR Survey

1. General Information

Name: Robert St.Onge

Contact Email: rstonge@okanagan.bc.ca

Organization Name: Okanagan College

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: Yes

Sustainability Coordinator: Yes

Administrative Assistant: No

Facilities/Operations Manager/Coordinator: No

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

Other - Please Specify: Fleet Manager, Manger of Business Services

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?: We aim to reduce our overall emission by 80 tons per year. Most of these reductions are based upon lower stationary emissions.

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)

Improvements to HVAC control strategies - supported by controls upgrades.

Boiler upgrades - supported by retrofit rebates and CNCP program

Deep energy retrofits to older buildings

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

Re-engineering of our central heating system on the Kelowna Campus to increase heat pump use and reduce boiler use.

Deep energy retrofits to older buildings

c) 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.

I. What % on average of your building portfolio has an energy audit completed each year (if any)? : 0

d) 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

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

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

e) 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 handled in-house with support from our controls contractor.

I. What % on average of your building portfolio do you recommission each year?: 5

f) Do you keep records of Refrigerant gases category and refilling volumes?

Yes

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

No

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

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 2018.

g) How many newly constructed buildings received at least LEED Gold certification in 2018 : 0

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

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

We had 2 buildings completed in 2018. Vernon Trades and Penticton Welding. Both are pursuing LEED gold but as of Dec 31, had not been certified yet.

h) Other actions? Please describe briefly.

We began construction on another new building which is pursuing LEED Gold, WELL Silver and Carbon Zero. This building will not be complete until 2020.

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?

We are in the process of developing an overarching transportation plan which is included the following elements:
 Data collection for usage of all fleet vehicles.
 Improving modal splits.
 Reducing number of parking spots per FTE
 Developing additional EV charging capability.

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)

We will be transitioning our 3 inter-campus convenience fleet vehicles (3 Prius) to the local Modo Rideshare program.
 We are removing one of our Minivans (donated to the local kidney foundation).
 This leaves 3 convenience fleet vehicles and various service vehicles.

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

Developing IT infrastructure to promote more teleconferencing.

c) 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

I. 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 - options available for budget were all fossil fuel based.

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

level 2: 12

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

level 2: 2

f) Other actions, please describe briefly (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

We have begun developing business case for 1 or 2 level 3 stations and also have 2 more level 2 stations to be added in 2020.

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)

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid): 3

Gas/diesel: 4

b) Light duty trucks (LDTs)

Gas/diesel: 6

c) Heavy duty vehicles (HDV)

Gas/diesel: 1

5. Please indicate the number of the vehicles you plan to replace in your fleet:

How much do you budget per LDV?: 30000

How many LDVs do you plan to procure annually over the next 5 years?: 2

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?

Our current strategy is to maintain our current print levels which have seen tremendous reductions in the past thanks to implementing pay-per-print and machine location consolidation.

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)

Discussion is on-going around digital approvals which should further will reduce the print levels in various departments.

Develop an education and outreach program to raise awareness.

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

No

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

No