



**2014**

# **Carbon Neutral Action Report**

Okanagan College





# 2014 Carbon Neutral Action Report

## Okanagan College

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### Executive Summary

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

Okanagan College Strategic Plan includes the following directives:



- Embed sustainability in the full range of educational programming
- Increase sustainable practices in all operations
- Educate students and employees to act sustainably
- Promote leadership and collaboration with communities in developing sustainable practices
- Ensure financial sustainability

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. In July 2014, Okanagan College submitted our bi-annual report and earned a silver rating, a full 10% higher than our original submission in 2011. Many of the activities which have led to improvement in our STARS scoring are also directly aligned with our carbon reduction initiatives.

The quest for improvement is ongoing. We have established institutional goals for carbon emissions and energy use/production:

- Attain energy net zero by 2025
- Reduce net carbon emissions by 80 tons per year





Part of Okanagan College's commitment to sustainability has involved giving greater voice and visibility to the topic. It starts with new staff orientation in which sustainability is a featured topic in sessions that introduce employees to the values and vision, policies and practices of the institution. We now have an active Facebook Page to complement our sustainability blog.

A significant achievement in 2014 was the ongoing construction of phase 2 and 3 of our **"Trades Training Complex"** on our KLO campus. The project is seeking a minimum of LEED Platinum standard as well as meeting the much more rigorous Living Building Challenge. It will be "Energy Net Zero" and include approximately 450 KW of photovoltaic solar panels. Construction of the 4 year project began in fall 2012 with the initial steps of renovating and retrofitting 4,385 square meters of existing shop, classroom and administration space. The project will conclude in 2016 with construction of 6,264 square meters of new space, which will accommodate more than 750 trade and apprenticeship students, many of whom currently train offsite in leased space. All mechanical and energy systems in the renovated spaces will be improved to reduce the building's carbon footprint significantly.

Recent Okanagan College construction projects have generated technology, passion and creativity that we will continue to leverage to create change in our communities. By drawing on the interests and expertise of staff and students we will continue to advance our efforts in sustainability and carbon footprint reductions.



Jim Hamilton

President, Okanagan College





## Greenhouse Gas Emissions

Total Greenhouse Gas Emissions Reported for 2014 = **1464.82 tonnes of CO<sub>2</sub>e**

This number represents a 68 ton decrease over last year, which is significant considering that we had a slightly cooler spring and fall in 2014 as well as the added burden of construction energy used for our Kelowna Trades Complex.

## Offsets Applied to Become Carbon Neutral in 2014

- Total Emissions for 2014: **1,464.82 tonnes**
- Total Emissions for Offsets: **1462.64 tonnes** (2.18 tonnes of CO<sub>2</sub>e do not require offsets due to the ethanol content in fuel for vehicles)
- Total Emissions that require offset purchases for 2014: **1463 tonnes**

## Historical Performance

Reporting Year	Building Area	Students	GHG Emissions			
			Tonnes CO <sub>2</sub> e			
	M <sup>2</sup>	Count	Tonnes	Tonnes / Student	Tonnes / M <sup>2</sup>	Heating Degree Days
2007	57,810	5,258	1,977	0.38	0.0342	3,851
2008	57,810	5,455	2,000	0.37	0.0346	4,131
2009	61,568	5,906	1,902	0.32	0.0309	4,049
2010	65,664	6,331	1,632	0.26	0.0249	3,790
2011	72,419	6,457	1,599	0.25	0.0221	3,804
2012	72,961	6,314	1,487	0.24	0.0204	3,710
2013	75,481	6,245	1,531	0.25	0.0203	3,712
2014	75,481	6,162	1,463	0.24	0.0194	3,753



## **Emissions Reductions Activities in 2014**

### **Purchasing / Consumption**

- Trash Audits were performed on the Vernon and Salmon Arm campuses to help identify opportunities for carbon reduction in our purchasing practices.
- Our “Pay for Printing” program entered its second year which included the introduction of user’s reports to help employees better understand their own printing and copying habits.

### **Transportation**

- An enhanced bus exchange was constructed in front of Okanagan College to make public transit more viable option.
- Okanagan College participated in the First Annual “Campus Commuter Challenge” in the fall of 2014 finishing 2<sup>nd</sup> in the nation for “total KM’s saved” in spite of competing against institutions with much larger populations.
- We continued to expand our “Ride to Work week” and “ICBC Commuter Challenge” programs.
- We “right-sized” one of our fleet vans to a much more efficient Toyota Prius.

### **Energy**

- With funding from the Carbon Neutral Capital Program (CNCP), we were able to replace older inefficient boilers with high-efficiency condensing boilers on our Vernon Campus.
- We are continuing to implement the energy saving opportunities identified through our Building Optimization Program (BOP) on the KLO campus.
- Lighting retrofits continue on all sites and include replacement of fixtures, addition of motion sensors and daylight harvesting. This year also saw the addition of a control system to manage the scheduling of our parking lot lighting on all 4 campuses.
- Sub-metering of our electrical consumption is now in place in Vernon which means all of our campuses have at least basic sub-metering capabilities.
- An Energy Dashboard with a public interface was added to our Student Residence and Heavy Duty Trades shop with further plans to connect our other campuses in the near future. This will help develop the higher level of engagement needed to drive future reductions.



## **Policy & Planning**

- A College-wide official sustainability plan has been developed and is now under review.
- A new Campus Master Plan is currently under development which will be informed by our transportation, energy and sustainability plans.
- We submitted our STARS report in July 2014 and earned a silver result. We update our STARS program rating bi-annually and continue to use the program as a foundation for our carbon reduction activities. We will resubmit again in spring 2016.

## **Education and Engagement**

- Our Institute of Learning and Teaching (an employee group) hosted a number of sustainability Lunch and Learns on all campuses to support our “staff training staff” initiative.
- Sustainability has been added to our orientation processes for new staff and students.

## **Plans to Continue Reducing Greenhouse Gas Emissions 2014 and beyond**

- The Trades Training Complex is underway and should be complete in early 2016. It will be an energy net zero facility.
- A central plant boiler upgrade on KLO campus will be completed in fall of this year.
- The HVAC upgrade to Sunoka Building in Penticton is underway and will be completed in spring 2017
- A boiler upgrade for Salmon Arm main campus (supported by Carbon Neutral Capital Program funding) will be completed this summer.
- Lean methodology will be applied to review processes and to look for efficiencies in a number of departments.
- Additional projects will be planned and budgeted to take advantage of the Carbon Neutral Capital Program.

# 2014 Carbon Neutral Action Report (CNAR)

## - Part 2 ACTIONS

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### Organization Name

Okanagan College

### Actions Taken to Reduce Emissions

#### **1) Stationary Fuel Combustion, Electricity (Buildings): Indicate which actions were taken in 2014:**

Performed energy retrofits on existing buildings

Yes

Built or are building new LEED Gold or other "Green" buildings.

Yes

Undertook an evaluation of overall building energy use.

Yes

Please list any other actions taken to reduce emissions from Buildings:

Boiler Plant Upgrades - Vernon, Kelowna

#### **2) Mobile Fleet Combustion (Fleet and other vehicles): Indicate which actions were taken in 2014:**

Do you have a fleet?

Yes

Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)

Yes

Replaced existing vehicles with hybrid or electric vehicles

Yes

Reduced the overall number of fleet vehicles

No

Took steps to drive less than last year

Yes

Please list any other actions taken to reduce emission from fleet:

Upgraded our video conferencing capabilities.

### **3) Supplies (Paper):Indicate which actions were taken in 2014:**

Used less paper than previous year

Yes

Used only 100% recycled paper

No

Used some recycled paper

Yes



Used alternate source paper (Bamboo, hemp, etc.)

No

Please list any other actions taken to reduce emissions from paper use:

Upgraded paper consumption reporting to division level which is expected to provide more awareness.

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### Actions Taken to Reduce Emissions - continued

Explain how you plan to continue minimizing emissions in 2015 and future years:

We have a moderate level of video conferencing in place, but most staff is not familiar with its operation - we plan to offer enhanced training to make it more effective.

We hope to expand the reporting structure of our pay-for-print service with the expectation that awareness will bring stronger action.

We will continue to upgrade our heating systems and building performance whenever possible.

If you wish to list any other "sustainability actions" outside of buildings, fleet, paper and travel check "yes". This reporting is optional.

Yes

**Actions to Promote Sustainability and Conservation - Optional**The following are actions that fall outside the scope of the Carbon Neutral Government Regulation, but which many organizations still undertake and may wish to report on. This section is optional for reporting.

**Business Travel**Created a low-carbon travel policy or travel reduction goal (Low-carbon: Lowest emission of greenhouse gases per kilometre per passenger)

No

**Virtual Meeting Technology**Installed web-conferencing software (e.g., Live Meeting, Elluminate, etc.)

Yes

**Made desktop web-cameras available to staff**

Yes

**Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)**

Yes

**Encourage carpooling to meetings**

Yes

**Education and Awareness**Have created Green, Sustainability, Energy Conservation, or Climate Action Teams.

Yes

**Provided resources and/or dedicated staff to support these teams**

Yes

**Provided behaviour change education/training for these teams (e.g., community-based social marketing)**

No

**Established a sustainability/green awards or recognition program**

No

**Support green professional development (e.g., workshops, conferences, training)**

Yes

**Planning for Climate Change** Have assessed whether extreme weather events and/or long term changes in climate will affect our organization's business areas

No

**Long term changes in climate have been incorporated into our organization's decision making.**

No

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**Actions to Promote Sustainability and Conservation - Optional (continued)**

**Staff Awareness and Education** Provided education to staff about the science of climate change

No

**Provided education to staff about the conservation of water, energy, and raw materials**

No

**Provided green tips on staff website or in newsletters**

No

**Alternate Work/Commuting Options** Allow for telework/working from home

No

**Staff have the option of a compressed work week**

No

**Commuting by foot, bicycle, carpool or public transit is encouraged**

Yes

**Shower or locker facilities are provided for staff/students who commute by foot or by bicycle**

Yes

**Secure bicycle storage is provided**

Yes

**Other Sustainability Actions** Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models

Yes

**Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features**

No

**Have put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities**

No

**Have implemented a hazardous waste reduction and disposal strategy  
(Hazardous Waste: E.g., electronics including computer parts and monitors,  
batteries, paints, fluorescent bulbs)**

(No response)

**Have incorporated minimum recycled content standards into procurement  
policy for consumable, non-paper supplies (e.g., writing instruments, binders,  
toner cartridges, etc.)**

Yes

**Established green standards for goods that are replaced infrequently and/or  
may require capital funds to purchase (e.g., office furniture, carpeting, etc.)**

No

**Incorporated lifecycle costing into new construction or renovations**

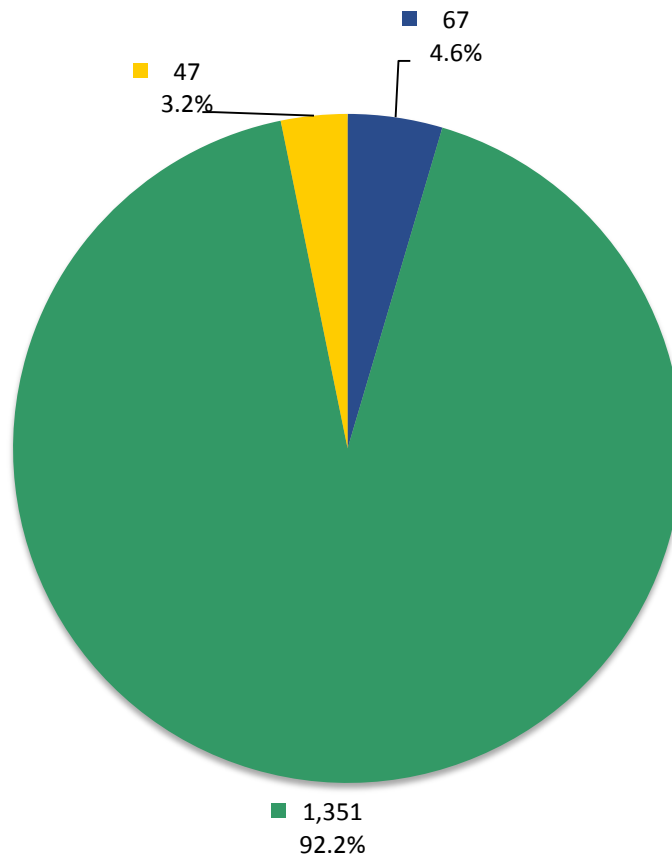
Yes

**Please list and other sustainability actions you wish to report not included in the  
previous list.**

(No response)



# Okanagan College Greenhouse Gas Emissions by Source for the 2014 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 1,465**

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

## Offsets Applied to Become Carbon Neutral in 2014 (Generated June 23, 2015 4:33 PM)

Total offsets required: **1,463**. Total offset investment: **\$36,575**. Emissions which do not require offsets: **2** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

\*\* Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.