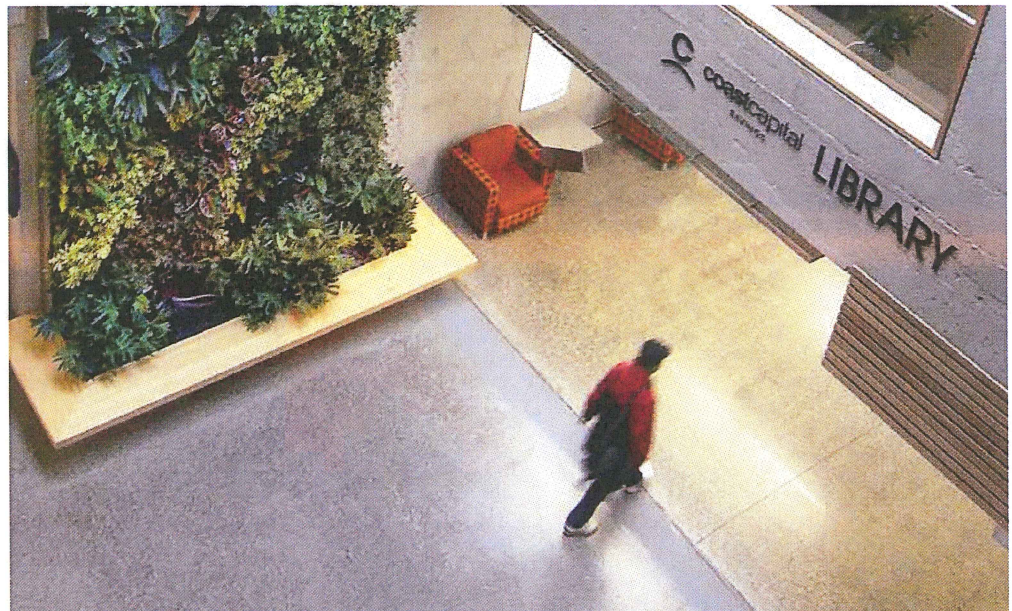


Carbon Neutral Action Report 2013

Prepared by Facilities Services



Kwantlen Polytechnic University – 2013 Carbon Neutral Action Report

Executive Summary

Kwantlen Polytechnic University (KPU) is the only polytechnic university in Canada, “we provide a unique array of programs and services that link students to their careers, their communities, and to their lives beyond the classroom”... “serving primarily students in the Metro Vancouver regions south of the Fraser River...” Our Strategic Plan “Vision 2018” defines our mission “KPU offers all learners opportunities to achieve success in a diverse range of programs that blend theory and practice, critical understanding, and social and ethical awareness necessary for good citizenship and rewarding careers.”

To achieve this KPU will embed learning outcomes within the University’s academic plan that prepare students for global citizenship and rewarding careers, enhance internationalization at KPU to allow learners and educators to develop a better understanding of the global challenges facing society, and integrate sustainability into the core curriculum across disciplines.

During the course of 2013 KPU continued to expand on its fundamental commitment to model responsible behavior in sustainability. In continuing to fulfill our commitment we are developing new credentialed programs which integrate sustainability as a keystone philosophy. Thereby spreading our commitment of creating positive change, through the broad scope of programs we offer to serve the needs of our community. The Strategic Energy Management Plan (S.E.M.P.) remains to be a key element for fulfilling our commitment to energy conservation and reduction of CO² emissions, and we will continue to pursue sustainable actions via the 2014 S.E.M.P.

2013 Greenhouse Gas Emissions

KPU’s 2013 total emissions from all sources as reported by SMARTTool are 2545.81 tCO²e, resulting in a reduction of 120.25 tCO²e, or a 4.5% drop from 2012 emission levels. Energy efficiency improvement projects reduced overall energy consumption regardless of comparatively colder average seasonal temperatures from those in 2012. Improvements to building systems resulted in an increase in facility efficiency at our Surrey campus, as illustrated by an 8.8% reduction from 693 tons of carbon emissions produced by heating systems to 632 tons of carbon emissions in 2013. Continuing to enhance environmental sustainability efforts on campus is a keystone of our organization’s vision.

2013 Mobile emissions totaling 16.77 tCO²e, which were generated by KPU’s seventeen assorted vehicles and a variety of outdoor-power equipment, were reported in our total emissions as fleet emissions and revealed a 16.44% decrease from 2012 levels. A significant portion of this decrease in emissions is reasonably attributable to variances resulting from changes in operational activities. As in past years this source remains well below 1% of our total emissions. In addition it can be inferred that there is an additional reduction in carbon emission resulting from reduced travel by students and staff because of course realignments, eliminating the need to commute between Richmond and Langley campuses.

Annual Fugitive Emissions generated by refrigeration equipment remain well below 1% of our total emissions and were not reported in 2013, as permitted under regulatory guidelines. A reporting template to submit the data to the SMARTTool reporting system is in development, to further enhance emissions tracking and reporting precision.

Offsets Applied to be Carbon Neutral in 2013

KPU has completed our Carbon Offset Purchase Order Form from Pacific Carbon Trust and purchased carbon offsets for the total 2545 tons of carbon emissions requiring offsets, as identified in SMARTTool for the total emissions calculated for 2013.

Emission Reductions Activities

Actions Taken to Reduce Greenhouse Gas Emissions in 2013:

- The University established the Environmental Sustainability Committee co-chaired by the Dean of Science & Horticulture and the Executive Director Facilities Services, which produced a report "Sustainability at KPU: Where are we now?"
- Development of departmental green teams started with the Horticulture green team being the first to be formed, implementing monthly 'Green Team' meetings to seek reduction in fuel use at Horticulture Field Labs.
- The Langley Institute of Sustainable Horticulture laboratory was awarded LEED Gold status.
- We've continued providing interactive presentations on energy conservation and sustainability issues, at information sessions at the start of semesters and at new employee events.
- Our Energy & Sustainability Website provides information and green tips to raise awareness on energy conservation and sustainability. <http://kwantlen.ca/sustainability.html>
- The installation of accurate sub metering enabled us to install an interactive touch screen display in the Langley Horticulture building, which allows access to energy use data for the Greenhouse operations and permits students and employees to view how much electricity and natural gas are being used for greenhouse processes.
- We updated records from previous years to monitor our energy performance baseline.
- Facilities Services- energy conservation lighting technology upgrade projects, reduced annual lighting expenses by an estimated \$13,486.00 per year in electrical and maintenance costs.
- Completed Surrey boiler loop bridge removals, and the system was adjusted to reflect changes to fluid flows, which results in better efficiency of the condensing boilers in the system. This reduces natural gas energy consumption, resulting in decreased greenhouse gas production.
- We've continued the practice of ensuring that all computers purchased are "80 plus" certified and monitors are "Energy Star" certified.
- More use of video- conferencing for inter-campus meetings to reduce travel (FSH Curriculum Committee meetings).
- The specific realignment of courses between Environmental Protection Technology and Agriculture courses to eliminate the need for students to commute between the Richmond and Langley campuses.

Plans to Continue Reducing Greenhouse Gas Emissions 2014– 2018:

- Investigating use of LED's to replace existing HPS/SON-T lamps in Horticulture greenhouses to reduce electricity consumption.
- School of Horticulture exploring options to install green / living walls in West Wing lobby, Health Science lobby and student seating areas.
- Horticulture is planting trees and other vegetation on Langley campus as part of Plant Identification courses, with added benefit to long-term sequestration of carbon emissions.
- Sustainability outreach initiative by Environmental Protection Technology students during sustainability week.
- The School of Horticulture is exploring the opportunities for installation of a rain water collection system for collecting from building roofs at field labs, to conserve water and reduce consumption from external supply.
- Commitment to KPU-wide green-waste and post-consumer food waste composting.
- Yearly solid waste audit performed by students; research vermin-composting facilities to generate data with eventual aim to compost Kwantlen green and cafeteria waste.
- 'Branching Out 2014' Student conference with theme: "Careers that work towards building resilient cities with limited (water) resources".
- KPU continues to develop new credentialed programs, advocating the philosophy of sustainable practices, and will integrate sustainability into the core curriculum across disciplines.
- The Richmond \$36 Million Chip and Shannon Wilson School of Design building, scheduled to open in 2015, is being designed and constructed to achieve a minimum of LEED Gold.
- Any new construction or major renovations will include LEED equivalent. All renovation and construction projects will use integrated design process.
- The Strategic Energy Management Plan is updated annually to identify further energy conservation projects.

Emissions and Offsets Summary:

Organization X GHG Emissions and Offsets for 2013 (TCO²E)	
GHG Emissions created in calendar year 2013 (from SMARTTool Homepage)	
Total Emissions	2546
Total Emissions for Offsets	2545
Adjustments to GHG Emissions Reported in Previous Years (from SMARTTool Homepage)	
Total Emissions	0
Total Emissions for Offsets	0
Credit owing from PCT at end of 2012 reporting year (if applicable – from May 15 Invoice):	
Credit Owing	2651
Total Emissions for Offsets for the 2013 Reporting Year (from Offset Invoice):	106

KPU is committed to providing enriched learning experiences that help prepare students for global citizenship and success in life through fundamental academic skills, inquiry-based curriculum, reflective scholarship and student-faculty interaction, and the critical role of a supportive academic community.

Further information about KPU's plans and current initiatives in energy and environmental management, are available at the URL's below:

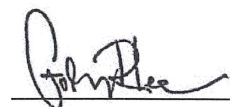
Facilities Services

<http://www.kpu.ca/sustainability>

Supply and Business Services

Green Index: <http://www.kpu.ca/supply/green>

Signature



Gordon R. Lee

**Deputy Vice Chancellor and
Vice President Finance and Administration**

Date

June 2, 2014

2013 Carbon Neutral Action Report (CNAR) - Part 2 ACTIONS

Created Tuesday, February 04, 2014

Updated Friday, May 30, 2014

<https://fluidsurveys.com/surveys/cas-z/2013-cnar-form-bps-actions/229f47d35753716be801dc4d83c33718/>

Page 1

Please complete the following sections of the 2013 Carbon Neutral Action Report form. Save your work frequently to prevent it from being lost. You can also save a copy for your own use as either a WORD or PDF file using the buttons at the bottom of each page.

This is Part 2 of the Carbon Neutral Action Report form. This section reports on actions taken to reduce emissions during the 2013 calendar year. This information will be included in your final Carbon Neutral Action Report posted on the Ministry of Environment website.

When the form is complete press the submit button on the last page to automatically submit the information to the Climate Action Secretariat (CAS). Do not press submit before you are ready – this may result in a loss of work.

In addition to completing this survey (Part 1 2), you are required to submit your completed Overview (Executive Summary) and Self-Certification Checklist. The 2013 Overview template was included in the email sent and can also be found on the LiveSmart leaders Community.

Please ensure you meet the following reporting deadlines:

A DRAFT 2013 CNAR is due to CAS by March 31, 2014. The draft is comprised of the Overview ONLY (no executive sign-off required).

The FINAL 2013 CNAR is due to CAS by May 30, 2014. The final 2013 CNAR includes Part 1 Part 2 survey form and Overview.

The Self-Certification Checklist is due to CAS by May 15, 2014.

For more information about the Carbon Neutral Government process, please refer to *Becoming Carbon Neutral 2013*, or should you have any questions please contact climateactionsecretariat@gov.bc.ca.

Organization Name

Kwantlen Polytechnic University

Actions Taken to Reduce Emissions

1) Stationary Fuel Combustion, Electricity (Buildings):

Indicate which actions were taken in 2013:

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:

-Performed lighting energy efficiency upgrade projects to reduce electricity consumption.

-Installed electrical sub metering to monitor electrical consumption and identify savings opportunities then implemented improvements to capitalize on them.

2) Mobile Fleet Combustion (Fleet and other vehicles):

Indicate which actions were taken in 2013:

Do you have a fleet?

Yes

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

No

Replaced existing vehicles with hybrid or electric vehicles

No

Reduced the overall number of fleet vehicles

No

Took steps to drive less than last year

No

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

Regular maintenance is performed on all vehicles to ensure operational efficiency.

3) Supplies (Paper):

Indicate which actions were taken in 2013:

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:

Initiated new multifunction print station technology upgrade to reduce consumption.

Actions Taken to Reduce Emissions - continued

Explain how you plan to continue minimizing emissions in 2014 and future years:

We plan to pursue minimizing emissions through annual updating of the Strategic Energy Management Plan, which analyses energy consumption within the organization, to identify and capitalize on savings opportunities, through implementation of improvements in technology and industry best practices.

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

No

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)

Yes

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

Yes

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

Yes

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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

Yes

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

Yes

Provided green tips on staff website or in newsletters

Yes

Alternate Work/Commuting Options

Allow for telework/working from home

Yes

Staff have the option of a compressed work week

Yes

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

Yes

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)

Yes

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

No

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

Yes

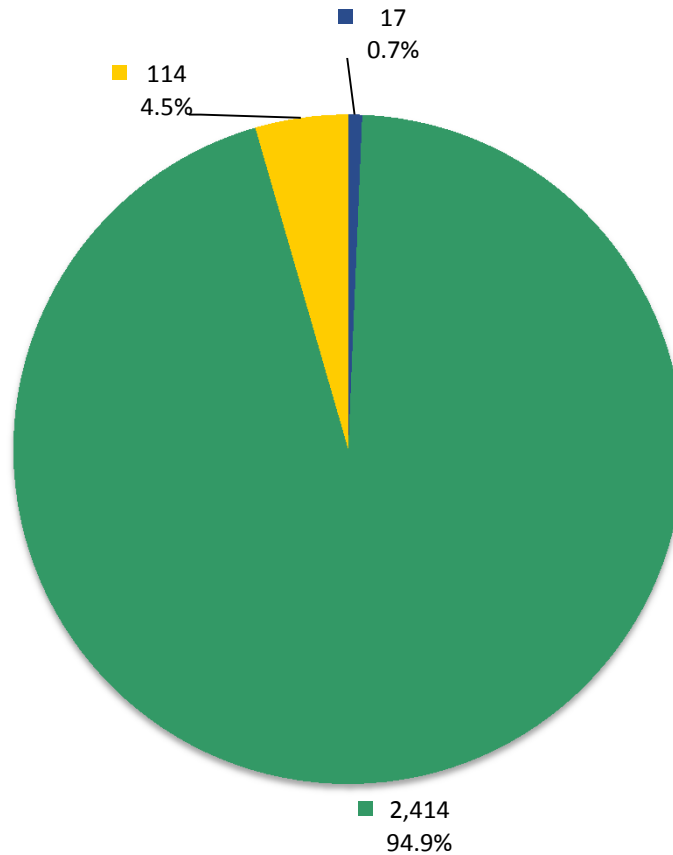
Incorporated lifecycle costing into new construction or renovations

Yes

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

As part of KPU's sustainability initiative under the leadership of president Dr. Alan Davis, the Environmental Sustainability Committee produced a report to serve as a living document that will be periodically updated to display KPU's current and planned sustainable practices. The web link to the report "Sustainability at KPU: Where Are We Now?" can be found under Sustainability at KPU, in the Sustainability & Energy section of the KPU Facilities Services web site at <http://www.kpu.ca/facilities-services>.

Kwantlen Polytechnic University Greenhouse Gas Emissions by Source for the 2013 Calendar Year (tCO₂e*)



Total Emissions: 2,546

- 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 2013 (Generated May 21, 2014 2:39 PM)

Total offsets required: **2,545**. Total offset investment: **\$63,625**. Emissions which do not require offsets: **1** **

*Tonnes of carbon dioxide equivalent (tCO₂e) 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.