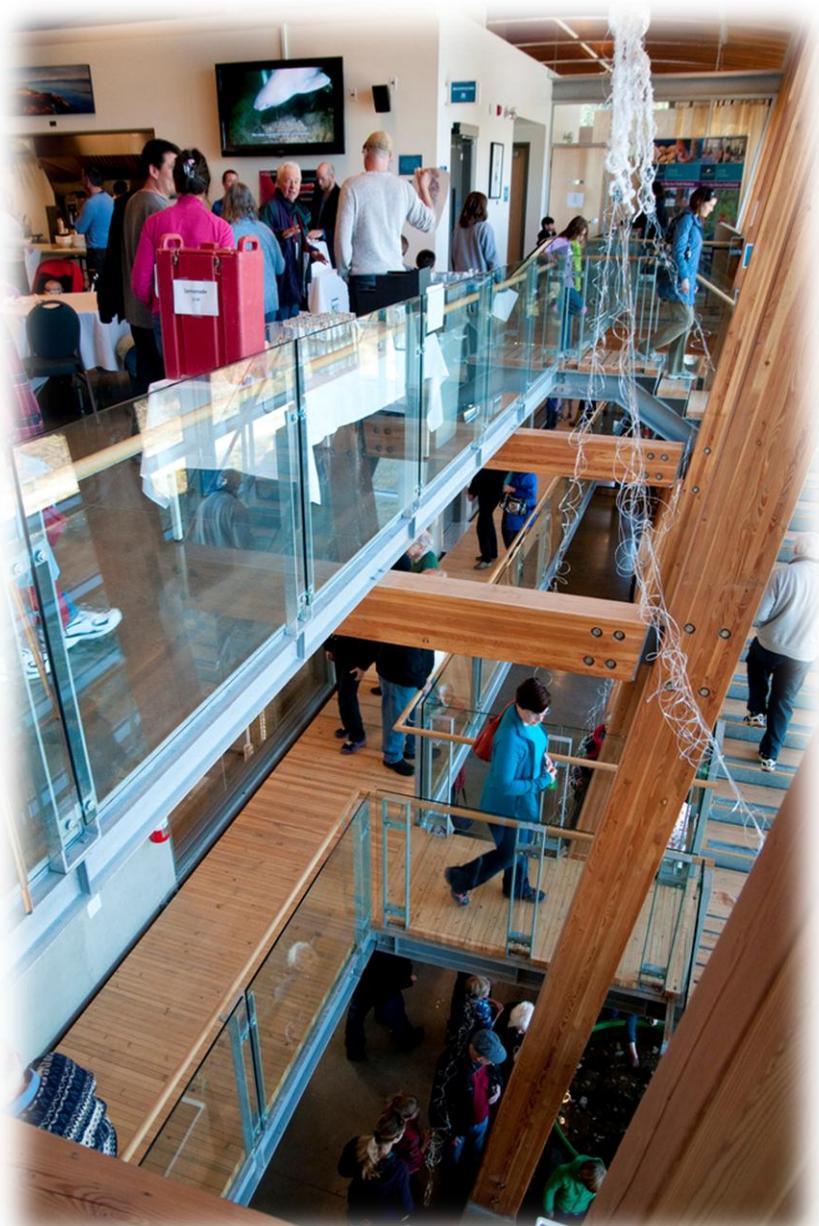


2013 Carbon Neutral Action Report

May 30, 2014





Deep Bay Marine Field Station gained LEED® Platinum accreditation in 2013. The facility offers opportunities for research, education, and celebration.

Executive Summary

Teaching and learning, procurement, and behaviour outreach programs have contributed to Vancouver Island University's (VIU) efforts in decreasing its carbon footprint in 2013. The university's [Academic](#) Plan and related integrated planning documents guide curriculum development and institutional action in sustainability.

VIU strives to build and support a community of resilience and positive action by meeting the educational goals of its students, and responding to community needs. Through its exploration of resilience to climate change, VIU is providing community leadership by building strong relationships with diverse stakeholders, and in so doing is an active member in combined community action on climate change. As evidenced in the Blue Carbon Memo of Understanding, VIU is working to make a positive local impact as well as creating applications that could have global significance. Additionally, a number of programs are providing education to, or service to, the community on climate change and sustainability issues.

The VIU community works to model and mentor active, informed, and responsible global citizenship, and to constantly review and refine its sustainability practices and processes. That, combined with the commitment and persistence of students, staff, and faculty, puts VIU on track to meet goals set out in BC's Greenhouse Gas Reduction Targets Act; to guide operational priorities; to inform program and curriculum development; and to clearly establish VIU as a place where green ideas are encouraged, nurtured, and enthusiastically practiced.



Pat Eagar
Vice-President, Administration and Finance
Vancouver Island University

Carbon Neutral Action Report

May 30, 2014

2013 Greenhouse Gas Emissions

Total 2013 Greenhouse Gas emissions from all sources, as outlined in the Greenhouse Gas Reduction Targets Act are 2565 tCO₂e. Total offset exempt—40 tCO₂e—is the result of fuel used for school buses. The breakdown of emissions is as follows:

2012/2013 tCO ₂ e comparison	2013	2012	Change	% Change
Buildings <i>(all campuses and facilities)</i>	2037.37 tCO ₂ e	2966.05 tCO ₂ e	-928.68	-31.31%
Mobile Combustion	391.20 tCO ₂ e	255.62 tCO ₂ e	135.58	53.04%
Office Paper	102.22 tCO ₂ e	97.71 tCO ₂ e	4.51	4.62%
Estimated Emissions	34.13 tCO ₂ e	45.22 tCO ₂ e	-11.09	-24.52%
Total Offset Exempt	40.00 tCO ₂ e	30.00 tCO ₂ e	10.00	33.33%
Total	2524.92 tCO₂e	3334.60 tCO₂e	-809.68	-24.28%

The decreases in the table shown above may be attributed to a number of factors including temperature, operational changes, and behaviour shifts, as well as the use of Verdiem software which puts networked monitors and CPUs into a low power state but still allows daily updates to take place.

Mobile combustion increase may reflect a larger cohort in the HEO program compared to previous years, and the upturn in office paper use suggests some follow up awareness education; however, in-scope, 0% recycled content paper procured has plummeted from 53% in 2010 to 11% in 2013.

Offsets Applied to Become Carbon Neutral in 2013

Total offsets in 2013 total 2525 tCO₂e. An update in building inventory resulted in a credit of 15 tCO₂e from 2012 and was applied. With the purchase of 2510 tCO₂e offsets, VIU was carbon neutral in 2013.



Emissions Reduction Activities

“Through the promotion of excellence in learning, we inspire our students and the people of Vancouver Island and coastal British Columbia as a trusted educational partner in the search for sustainable cultural, economic, environmental and social prosperity.”

*Vancouver Island University
Visionary Goal*

VIU’s Academic Plan, the cornerstone of the institution’s strategic planning, is strongly aligned with carbon neutrality and exemplifies ‘*where green ideas work.*’ With the intent of securing a healthy, sustainable environment for all, Sustainability is a core theme that is promoted to VIU’s global community through progressive operational practices, community engagement, partnerships, and education.

Through deliberate and active energy reduction, VIU works to lead by example by providing opportunities for students, staff, and community engagement in reduction of greenhouse gas emissions, and by structuring platforms for experiential education in a broad range of areas related to healthy, resilient communities. Broad areas of exploration include

Renewable Energy -- Exploration of energy alternatives, including a “geo-exchange” system that would use the flooded coal mine shafts beneath the campus as an energy source, continue to be pursued.

Transportation -- Development of a long-term mandate for transportation management VIU is being launched and key elements for sustainable solutions include reduction of single occupant cars on campus, and alternative transportation options.

Food Security -- A Healthy Communities Coordinator, in partnership with the student-led Campus Food Strategy Group and other internal and external stakeholders, has been engaged to review and analyse food procurement practices at the institution with the intent of the “campus community having access to safe, affordable, nutritious food that is produced in a sustainable way” (The Campus Food Systems Project).



There are multiple benefits of reducing energy use and GHG emissions at VIU from both an operational and community perspective. Operationally, VIU has avoided energy costs with upgrades such as the Verdiem software implementation. Thoughtful paper procurement and use results in more efficient use of resources, and ongoing HVAC monitoring ensures systems are running at best efficiency

From a VIU community standpoint, opportunities for students and staff to engage in energy reduction initiatives aids in developing positive attitudes and social norms around energy saving behaviours, so encourage persistent action as well as widening the community of sustainability practitioners. Too, by offering opportunities for experiential learning, the institution sets scaffolding for both constructivist and connectivist learning and engenders students and staff with leadership in sustainable action.

2013 Achievements and actions pursued to minimize the institution's carbon emissions include

Operational

- *LEED® Platinum accreditation*--awarded to Deep Bay Marine Research Station
- *Demand Control Ventilation*—Building 356 was upgraded with this system which will result in reduced heating loads, and therefore lower GhG emissions
- *Bike shelter (upper)* –Space room 20 bikes, 'fixation' station, charging for 4 bikes
- *Replacement of inefficient equipment*—many coolers in the cafeteria were replaced with more energy-efficient models
- *"Demand Control Ventilation"* -- Equipment and software have been installed in Building 356 on the Nanaimo Campus, primarily to manage excessive carbon dioxide build-up, but with the additional benefit of reducing greenhouse gas emissions during the cooler seasons. The reduced heating load is expected to result in reduced GhG emissions.

Educational

- *Weaving sustainability into the curriculum*—a number of courses and programs are actively and meaningfully incorporating sustainability into the curriculum. The [MBA program challenge, working with the Pacific Salmon Foundation](#), is one of many great stories.



Engagement

- *Student Groups*—The Campus Food Strategy Group, ACER (Awareness of Climate change through Education and Research), and Solutions have been working with the campus community to educate, bring awareness, and shift behaviour in a variety of sustainability areas including food security, climate change, and locally-sourced food.
- *Farmers' Market* – Students in the Workplace Essential Skills and Training program hosted a very popular Farmers' Market throughout the fall drawing attention to the benefits of locally sourced food.
- *Behaviour change initiatives* – A number of initiatives supporting energy use awareness, attitude, and behaviour shift were launched and included activities such as a Sustainability Fair, Whacky Woolies week, and PowerQuest.
- *Blue Carbon Memo of Understanding* – a partnership between VIU, the BC government, and the Comox Valley Project Watershed Society to investigate how coastal communities can work together to develop climate change improvements that will be of environmental and economic benefit. “Through these activities, Vancouver Island University will increase its ability to respond to coastal community needs and meet the educational goals of its students. The Province will better understand the opportunity to combine community action on dealing with the impacts of a changing climate, climate change reduction and ecological improvement in coastal ecosystems. Comox Valley Project Watershed Society will build local expertise and capacity, and restore valuable intertidal areas to the benefit of B.C. coastal and First Nations communities (BC Ministry of Environment, 2013).

VIU looks forward to developing breadth and depth in its carbon reducing actions and strategies for 2014.

Resources

BC Ministry of Environment. (2013, April 9). Unlocking coastal BC's blue carbon opportunities. Victoria, BC. Retrieved March 2014, from http://www2.news.gov.bc.ca/news_releases_2009-2013/2013ENV0048-000771.htm

The Campus Food Systems Project. (n.d.). *National Student Food Charter*. Retrieved 2014, from Student Food: <http://studentfood.ca/nsfc>



"Capturing coastal B.C.'s blue carbon opportunities" by
Province of British Columbia

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/2296670b73f1c7eb252badfaa0582552/>

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

Vancouver Island 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.

No

Undertook an evaluation of overall building energy use.

No

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

With the exception of Demand Control Ventilation for Building 356 at the Nanaimo Campus and of energy conservation measures at Milner Gardens, no other retrofits performed, no new building programs constructed to LEED standards, and no overall building energy use evaluations conducted. Note that VIU did acquire additional leased space when a former elementary school near Duncan BC was leased and converted to a Trades Centre, in partnership with the local School District, but that facility was not brought up to LEED standards.

VIU Milner Gardens management converted a majority of lighting to LED; upgraded freezers; installed programmable thermostats; installed timers on pumps/boilers and related equipment; installed storm windows in the office; and insulated large sections of hot water piping.

Western Student Housing (VIU Residences) started a cold water washing pledge and a drive to have residents turn off lights when they are not in use.

VIU's Cowichan Campus obtained LEED® Gold certification, and Deep Bay Marine Field Station received LEED® Platinum certification.

At the Cowichan facility, there was constant scheduling and rescheduling of building equipment so that the energy consumption of the equipment was limited mainly to times of building occupancy. Building operation controls (DDC) were closely monitored and adjusted, and seasonal adjustments of building heating and cooling systems were made to ensure building comfort levels while keeping energy consumption to a minimum.

The campus's mechanical system function was decreased to areas of the building when there was a decreased use of those areas to realize a savings in energy consumption, and use of kitchen equipment and lighting was decreased at times of minimal use to realize savings of energy consumption.

Maintenance was performed to retain the mechanical integrity of the equipment so as to sustain effective energy consumption.

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:

*Increased use of tele- and videoconferencing was made as well as regular mechanical maintenance.
Implementation of listing and tracking of fleet including requirement to look at ever greening and alignment of use to fleet vehicle, for example elimination of assignment of fleet vehicles as part of employment relationship.*

3) Supplies (Paper):

Indicate which actions were taken in 2013:

Used less paper than previous year

No

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:

Many departments printed double-sided when possible and used 30% recycled content or greater paper for day to day use. As an institution, though, 100% recycled content paper was not used exclusively. There has been a shift in paper choice--in 2010, 47% of VIU's in-scope paper use was 30% recycled content or more, and in 2013, that number jumped to 89%.

Alternate-source paper is not currently being used as its availability is limited.

Most departments reported that a paper use analysis was being done in order to find ways of decreasing paper use. One of those strategies was to make better and more extensive use of scanned documents.

Food Services used (and continues to use) compostable paper products including bowls, cups, take out containers and plates.

Actions Taken to Reduce Emissions - continued

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

Strategies for reducing carbon emissions in future years include the following:

- *Fewer plastic bags issued at the Bookstore, and the promotion of our re-usable bags*
- *Promote biking to work, carpooling and public transit*
- *Reduce paper use, turn off computer screens, speakers, adding machines*
- *Shutting down equipment when not in use.*
- *Replacing old equipment with new efficient equipment which includes: Pot washer, dishwasher, and stoves.*
- *Removal of two old coolers.*
- *Laundry machines in student housing will be replaced with new energy-efficient appliances.*
- *Analysis of emissions for fleet upgrades of the next 3 years*
- *Continued use of Verdiem power management software, which, over the past year, has been the installed in 1350 systems with an estimated annual savings of 266,730.9 kWh.*
- *Continued efforts to virtualize server infrastructure. Older, less efficient physical boxes are being moved into a more efficient virtual environment.*
- *New servers and network equipment are more energy efficient than previous generations, and with the regular refresh of our equipment, this will become more evident in energy savings.*
- *Use of free air cooling in our data centres during the colder months will be continued with a push for expanding this opportunity.*
- *Savings to be gained by taking advantage of shared data centres and storage that are offered through our peer institutions, such as Data-Safe offered through BCNET will be explored and analysed.*
- *Efficient building operation through continued monitoring, evaluation, adjustment, and maintenance of building systems, controls, and equipment to maintain optimum operating conditions within building occupancy comfort levels as related to minimal energy consumption levels.*
- *All building systems, controls, and lighting will be monitored and assessed for efficiency and replaced as necessary and as funding permits.*
- *Milner Gardens will continue to look for ways to reduce electrical consumption through better insulation and upgrades to lighting and equipment.*
- *Consideration of a flex week model over the summer period will be explored for some areas*

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.)

No

Made desktop web-cameras available to staff

Yes

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

No

Encourage carpooling to meetings

Yes

Education and Awareness

Have created Green, Sustainability, Energy Conservation, or Climate Action Teams.

No

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

Yes

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.

No

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

Yes

Provided green tips on staff website or in newsletters

Yes

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

No

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

Yes

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

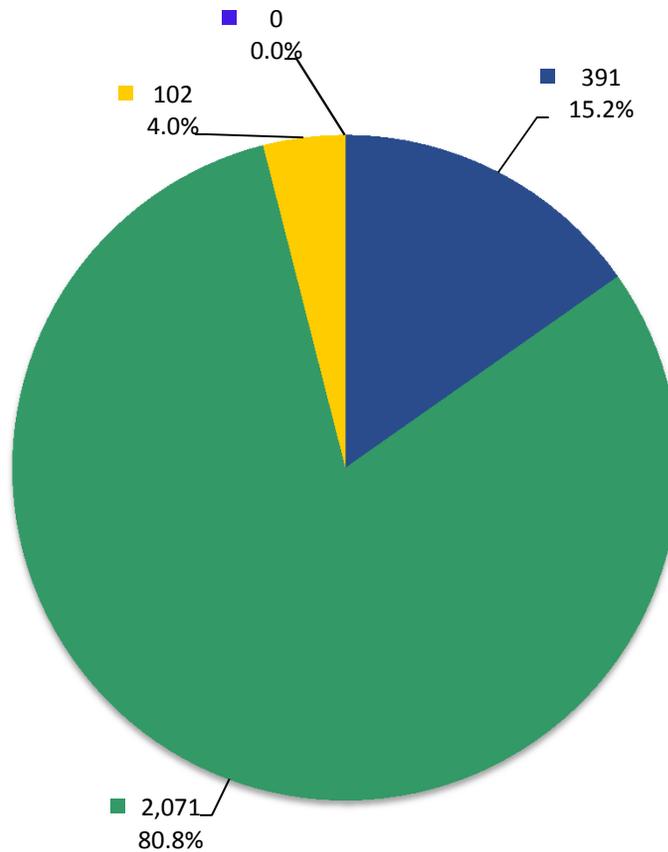
Incorporated lifecycle costing into new construction or renovations

No

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

Some office areas have instituted a self-managed recycling program that goes beyond what is offered at VIU or have taken advantage of no cost programs that collect and re-/upcycle more challenging items such as Keurig beverage containers. The Trades and Applied Technology department has instituted an extensive recycling program for Hair Dressing consumables and waste.

Vancouver Island University Greenhouse Gas Emissions by Source for the 2013 Calendar Year (tCO₂e*)



Total Emissions: 2,565

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

Offsets Applied to Become Carbon Neutral in 2013 (Generated May 21, 2014 3:09 PM)

Total offsets required: **2,525**. Total offset investment: **\$63,125**. Emissions which do not require offsets: **40** **

*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.