

CARBON NEUTRAL ACTION REPORT 2013



**JUSTICE
INSTITUTE**
of BRITISH COLUMBIA



EXECUTIVE SUMMARY



PETER KINGSTON

Vice President, Finance & Administration

Justice Institute of British Columbia (JIBC) is Canada's leading public safety educator - a dynamic post-secondary institution recognized nationally and internationally for innovative education and applied research in the areas of justice and public safety. JIBC offers a range of applied and academic programs (certificates, diplomas, and degrees) that span the spectrum of safety – from prevention to response and recovery.

JIBC is committed to reducing its carbon footprint and improving sustainability through environmentally responsible practices. In 2006 we began implementing operational changes that have resulted in significant reductions in energy and water consumption at our New Westminster and Maple Ridge campuses.

We have continued to reduce energy use and water consumption in 2013. At our New Westminster campus, weather-adjusted data indicates a reduction in energy consumption of 32%, which has resulted in a corresponding decline in greenhouse gas emissions of

approximately 30% when compared to our 2008 baseline. Water consumption in 2013 has also been reduced by approximately 37% compared to 2006.

At our Maple Ridge campus, weather-adjusted data also indicates energy savings of approximately 30% when compared to our 2007 baseline for this campus.

In 2009, JIBC, in partnership with BC Hydro, completed an energy study of its New Westminster and Maple Ridge campuses to review the facilities' energy using systems; provide energy consumption baseline information; and develop detailed recommendations for cost-effective options to improve the energy efficiency of both facilities.

Several of the recommendations were implemented at our New Westminster campus in 2009 and 2010, and implementation at our Maple Ridge campus was completed in 2012.

JIBC has established, and continues to maintain, a comprehensive recycling program that includes

paper, cardboard, compost, printer toner cartridges, electronic equipment, fluorescent lamps, batteries, plastics, glass, metals, pallets, and kitchen cooking oil. In addition, we encourage the use of re-usable dishes in our food services operation and require our janitorial contractors to use certified "green" cleaning products at our New Westminster, Maple Ridge and Okanagan campuses. In 2012 we expanded our recycling program by adding Styrofoam to the list of products we recycle.

In 2012, we also extended our composting program and more than doubled the amount of compostable materials being diverted from the landfill, from approximately 2,400 kilograms in 2011 to approximately 5,000 kilograms in 2012.



GREEN CAMPUS TEAM

JIBC's Green Campus Team was formed in 2011, with members representing all schools and divisions at JIBC, to provide a forum for the advancement and implementation of environmental sustainability initiatives; facilitate cross - divisional communications on best practices, and to encourage staff and student participation.

The Team also tracks performance, and will establish benchmarks for future comparisons and targets for items such as fleet emissions, paper consumption, facilities energy consumption and waste management.

In 2012, the Team was instrumental in gaining Institute support for the elimination of binders for the majority of courses that still utilize paper-based materials. In November, the team brought forward a proposal for more sustainable alternatives to delivering course materials and received approval to eliminate binders effective April 1, 2013.

The team also continues to promote the use of online delivery for course materials and administrative reports.

GREEN GAS EMISSIONS & OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2013

BUILDINGS:
525 tonnes

FLEET:
83 tonnes*

SUPPLIES:
65 tonnes

**PRIOR YEAR
ADJUSTMENTS:**
-1

**OFFSETS APPLIED TO
BECOME CARBON
NEUTRAL IN 2013:**
672 tonnes

* Greenhouse Gas emissions reported for fleet operations are net of 3 tonnes, which represent biomass emissions from the renewable fuel portion in emissions. As stated in "BC Best Practices 2012, Methodology for Measuring Greenhouse Gas Emission," the carbon dioxide emissions resulting from the combustion of biogenic fuel sources must be reported, but do not require offsets.

In addition, it was estimated that fugitive emissions from stationary cooling comprises less than .01 % of JIBC's total emissions, and that ongoing effort to collect or estimate emissions from this source annually is disproportionately onerous. Thus, these emissions have been deemed to be out of scope and are not included JIBC's total greenhouse gas emissions profile or offset purchase.

ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2013

We continued our energy monitoring program with a third party provider of energy monitoring, targeting and reporting services to ensure energy reduction targets are being met, and that periods of off-target energy performance are quickly identified so that corrective actions can be taken.

NEW WESTMINSTER CAMPUS

We partnered with BC Hydro by joining the Continuous Optimization Program for Commercial Buildings. The program consists of two primary integrated components. The first component is re-commissioning, which includes activities that identify opportunities to optimize building energy use through the implementation of low-cost operational improvements and retrofits.

The second component of the program is an electrical meter upgrade to provide for comprehensive analysis and reporting. The investigation phase of the program was launched, and the upgraded meter was installed at the New Westminster campus in November 2012.

In 2013, we completed the investigation stage of the program which included:

- Performing diagnostic monitoring and functional tests.
- Developing a master list of findings and recommended operational improvements and retrofits.

In 2013, we also added a hot water recirculation system to the scope of our domestic hot water pipe replacement project. Recirculation water temperature and flow schedules are now controlled by the building automation system which has eliminated the need to cycle the hot water boilers in order to maintain set point temperature during unoccupied periods.

TECHNOLOGY SERVICES

Technology Services continued replacing physical servers with “virtual” servers as part of a long-term program to lower energy consumption and costs. Older technology required each server operating system to run on its own physical

device, but as processor speeds have increased and newer methods have been developed, we are able to lower energy consumption by hosting multiple server operating systems on one physical device. The percentage of JIBC virtualized servers increased from 70% to 80% in 2013.

We also continued upgrading our computer operating system in 2013. The new system has superior energy saving features that include dimming computer screens, slower disk rotational speed and superior auto sleep mode when computers are not in use. This project is expected to be completed in 2014.

Video conferencing technology was installed in three classrooms in New Westminster, Victoria, and Kelowna. This has resulted in travel reductions for students and instructors.

PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS 2014 – 2016

We will continue the energy monitoring, targeting and reporting program at our New Westminster and Maple Ridge campuses.

JIBC's Green Campus Team will continue to provide a forum for the advancement and implementation of environmental sustainability initiatives at the Institute and encourage staff and student participation.

We also plan to implement a sustainable procurement policy that will encourage sustainable

purchasing practices and outline the parameters that we expect our suppliers to work within. With new travel, courier and cartage agreements we plan to start tracking and managing our carbon footprint associated with these activities.

At our New Westminster campus in 2014 we plan to review and implement selected energy conservation measures identified during the investigation phase of BC Hydro's Continuous Optimization program.

In addition, our existing chiller is nearing the end of its useful life and we plan to replace it with a high efficiency model in 2015. The new chiller is expected to reduce electrical consumption at the New Westminster campus by approximately 5% per year.

At our Maple Ridge campus we plan to investigate the feasibility of adding a heat exchanger to an existing heating \ ventilation system and upgrading exterior lighting to LED.



JUSTICE INSTITUTE

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*Justice Institute of British
Columbia (JIBC) is Canada's
leading public safety educator
recognized nationally and
internationally for innovative
education in justice, public safety
and social services.*

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Chilliwack, BC V2R 5Y8

TEL **604.847.0881**

Maple Ridge Campus
13500 – 256th Street
Maple Ridge, BC V4R 1C9

TEL **604.462.1000**

Okanagan Campus
825 Walrod Street
Kelowna, BC V1Y 2S4

TEL **250.469.6020**

Pitt Meadows Campus
18799 Airport Way
Pitt Meadows, BC V3Y 2B4

TEL **604.528.5891**

Victoria Campus
810 Fort Street
Victoria, BC V8W 1H8

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JIBC



@JIBCnews



JusticeInstitute

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

Created Friday, March 28, 2014

Updated Tuesday, April 01, 2014

<https://fluidsurveys.com/surveys/cas-z/2013-cnar-form-bps-actions/58588e17c6be2cbb8a266856908d0d6f/>

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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

Justice Institute of British Columbia

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.

Yes

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

In 2012 we partnered with BC Hydro by joining the Continuous Optimization Program for our New Westminster campus buildings. The program consists of two primary integrated components. The first component is re-commissioning, which includes activities that identify opportunities to optimize building energy use through the implementation of low-cost operational improvements and retrofits. The second component of the program is an electrical meter upgrade to provide for comprehensive analysis and reporting. The investigation phase of the program was completed at the end of 2013.

At the New Westminster campus we also added a hot water recirculation line to the scope of our domestic hot water pipe replacement project. Recirculation water temperature and flow schedules are controlled by the building automation system which has eliminated the need to cycle the hot water boilers in order to maintain set point temperature during unoccupied periods.

Technology Services continued replacing physical servers with "virtual" servers as part of a long-term program to lower energy consumption and costs. Older technology required each server operating system to run on its own physical device, but as processor speeds have increased and newer methods have been developed, we are able to lower energy consumption by hosting multiple server operating systems on one physical device. The percentage of JIBC virtualized servers increased from 70% to 80% in 2013.

We also continued upgrading our computer operating system in 2013. The new system has superior energy saving features that include dimming computer screens, slower disk rotational speed and superior auto sleep mode when computers are not in use. This project is expected to be completed in 2014.

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:

(No response)

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:

(No response)

Actions Taken to Reduce Emissions - continued

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

In 2014 we plan to implement selected energy conservation measures identified through BC Hydro's Continuous Optimization Program in 2013, we also plan to replace the existing chiller at the New Westminster campus with a high efficiency model. The new chiller is expected reduce electrical consumption by approximately 5% per year.

At our Maple Ridge campus we plan to investigate the feasibility of adding a heat exchanger to an existing heating \ ventilation system and upgrading exterior lighting to LED.

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)

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

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

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

No

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.)

No

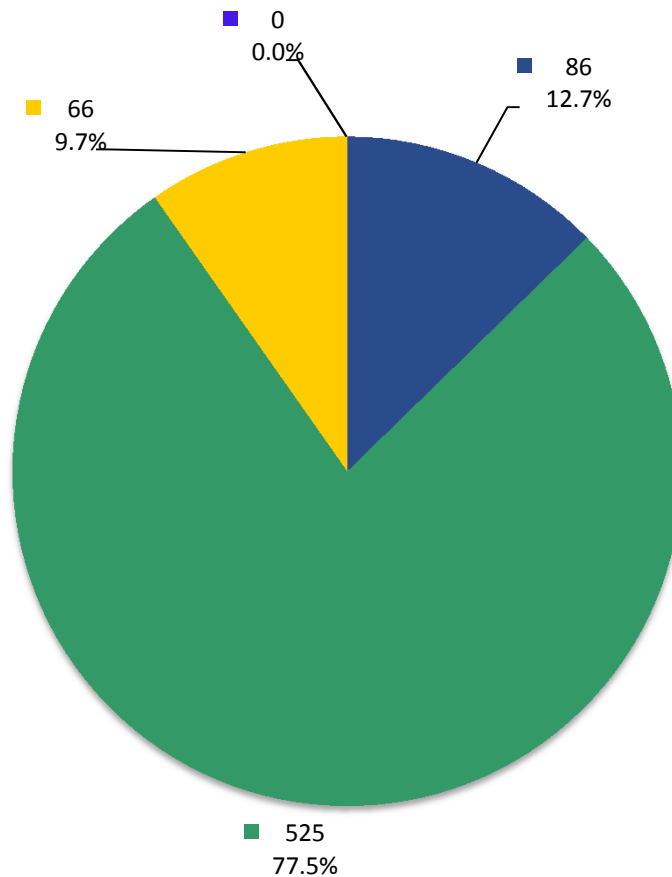
Incorporated lifecycle costing into new construction or renovations

Yes

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

In 2013 we consolidated all office supplies purchases to a single vendor which has resulted fewer delivery trips.

**Justice Institute of BC
Greenhouse Gas Emissions by Source
for the 2013 Calendar Year (tCO₂e*)**



Total Emissions: 677

- 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 2:38 PM)

Total offsets required: **673**. Total offset investment: **\$16,825**. Emissions which do not require offsets: **3** **

*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.