



JIBC

CANADA'S *leading*
PUBLIC SAFETY
EDUCATOR



2011 CARBON NEUTRAL ACTION OVERVIEW REPORT

JUSTICE INSTITUTE OF BRITISH COLUMBIA - 2011 CARBON NEUTRAL ACTION REPORT

EXECUTIVE SUMMARY

The 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 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 improve sustainability through environmentally responsible practices. In 2006 we began implementing operational changes which have resulted in significant reductions in energy and water consumption at our New Westminster Campus. Our efforts resulted in a 38% reduction in 2008 natural gas consumption when compared to 2006; a 6% per year decrease in electricity usage when comparing 2008 with the preceding 2 years. In addition we achieved a reduction of 31% in 2008 water consumption when compared with 2006.

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 detailed recommendations for cost-effective options to improve the energy efficiency of both facilities. Several of the recommendations were implemented at our New West campus in 2009 and 2010 and implementation at our Maple Ridge campus began in 2011.



Tracey Ternoway,CA
Vice-President,
Finance and Administration

We are pleased to report that we have continued to reduce energy use and water consumption in 2011. At our New West campus, weather adjusted data indicates energy savings of approximately 28% resulting in a decline in greenhouse gas emissions of approximately 30% compared to our 2008 baseline. Water consumption has also been reduced by approximately 15% compared to 2008.

JIBC has established and continues to maintain a comprehensive recycling program that includes paper, cardboard, 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 contractor to use certified "green" cleaning products at our New Westminster and Maple Ridge campuses.

GREENHOUSE GAS EMISSIONS AND OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2011

- Buildings - 631 tonnes
- Fleet - 105 tonnes*
- Supplies - 78 tonnes
- Offsets applied to become carbon neutral in 2011 - 814 tonnes

*Greenhouse Gas emissions reported for fleet operations are net of 4 tonnes which represent biomass emissions from the renewable fuel portion in emissions. As stated in Methodology for Reporting B. C. Public Sector Greenhouse Gas Emissions Version 2.0, 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 the Justice Institute'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.



OVERVIEWS

ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2011



Green Campus Team

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

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

In 2011 the Team was instrumental in implementing the following initiatives:

Waste reduction at New Westminster campus - office waste bins and bags were replaced with small unlined bins, staff empty these small bins into larger centrally located bins thereby reducing the number of garbage bags sent to the landfill.

In conjunction with this initiative, compost and metal/plastic recycling bins were placed throughout the facility next to centrally located waste bins which has resulted in an increase in recyclable/compostable materials being diverted from the landfill.

Paper reduction - the Team championed various ideas for paper reduction including, requesting Technology Services to have all networked printers set to default double sided printing; collaborating with divisions to have more reports sent electronically rather than printing; streamlining filing systems to eliminate unnecessary duplication and taking steps to eliminate junk faxes.

Staff engagement - the Green Campus Team regularly contributes to JIBC's weekly staff e-newsletter to raise awareness and challenge staff to think green and has established an email address for staff and student feedback.

Print/Copy Management Project

In 2011, JIBC conducted a detailed assessment of current document technology and its environmental impact. The scope included the Institute's full range of printers, scanners, photocopiers, and multi-function devices.

The assessment confirmed significant opportunities for improvement of business processes and cost with optimization of devices. Based on findings from the assessment, and other research, we have moved forward with a strategy to streamline and optimize output devices and reduce their environmental impact. As part of this strategy, a Request for Proposal (RFP) was issued December 2, 2011, inviting proposals for the provision of printing, photocopying, and multifunctional (print, copy, fax and scanning) solutions for JIBC, including business process improvement. This new strategy will also be a major step toward centralizing procurement and achieving our environmental stewardship and energy management goals. When implemented, the optimized devices are expected to reduce energy consumption and waste generation by approximately thirty percent when compared to the current state.

New Westminster Campus

In 2011 we continued our energy monitoring program with a third party provider of energy monitoring, targeting and reporting services in order 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.

We also continued to schedule HVAC equipment and lighting in various areas to operate only when those areas are occupied and closely monitored equipment operation to ensure maximum efficiency.

Maple Ridge Campus

In order to effectively implement some of the changes recommended in the 2009 Energy Study, we elected to replace the existing building automation system (BAS) which was nearing the end of its service life. The BAS replacement project began in August of 2011.



The system changes implemented during the BAS project will allow more precise control of the building heating and lighting systems, as well as better data collection for trend analysis and systems optimization. Energy saving features of the new BAS includes:

- Occupancy sensors in classrooms to control lighting and ventilation to conserve energy when rooms are unoccupied.
- Carbon monoxide sensors to reduce unnecessary running of circulation fans in unoccupied areas.
- Ambient light sensor in the main building hall will switch off interior lighting when ambient lighting from windows and skylights reaches adequate levels.
- Exterior building and street lighting automatically controlled based on a sunrise and sunset times, reducing unnecessary lighting.

We also modified one of the water recycling systems for Fire Fighter training which is expected to reduce energy consumed by this system by 90%.

We also installed a new water extractor washing machine which will eliminate the use of gas fired dryers for Fire Fighter turnout gear.

Chilliwack Campus



In 2011 we successfully installed 14 solar panels to supplement heating for domestic hot water at our Student Residence. The energy efficiency retrofit project was completed as part of the Public Sector Energy Conservation Agreement (PSECA) between the BC Government and Solar BC, with funding from PSECA, Fortis BC, and the JIBC Foundation.

This was part of \$2.8 million invested by the Provincial Government in solar panel installations on 24 schools, nine colleges and universities, and five hospitals.

Victoria Campus

Prior to moving into our new Campus location in January of 2011, we retrofitted the existing lighting with energy efficient T8 fixtures and removed redundant lighting.



PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS 2012 – 2014

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

Maple Ridge Campus

- Complete BAS replacement project started in 2011.
- Add campus to energy monitoring program with third party provider of energy monitoring, targeting and reporting services in order 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

- Continue energy monitoring program and engage third party provider of energy monitoring, targeting and reporting services in order 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.
- Investigate feasibility of participating in BC Hydro's Continuous Optimization Program for Commercial Buildings to help identify additional energy saving operational improvements.
- Continue to upgrade inefficient lighting as funding becomes available.

Victoria Campus

- Expand our landfill diversion through composting and expansion of our recycling program. We will add composting and paper cup recycling to our existing recycling program at the Victoria Campus.





JUSTICE INSTITUTE OF BRITISH COLUMBIA

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Justice Institute of British Columbia - 2011 Carbon Neutral Action Report

Actions Towards Carbon Neutrality							
The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the <i>Greenhouse Gas Reduction Targets Act</i> .							
Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)							
This section is either not applicable, not yet evaluated, or was completed before 2011							
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress			A project to replace the building automation system (BAS) for our Maple Ridge Campus was started in 2011. The new system will incorporate several energy saving upgrades. In addition we modified one of water recycling systems for Fire Fighter training which is expected to reduce energy consumed by this system by 90%.	Maple Ridge Campus 2012 - Complete BAS replacement project which was started in 2011. New Westminster Campus 2012 - Investigate feasibility of participating in BC Hydro’s Continuous Optimization Program for Commercial Buildings to help identify additional energy saving operational improvements.	2012	2014
IT power management							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	5	% of computers shut down automatically outside of regular business hours	Approximately five percent of desktop computers now shut down at night.	Further evaluation of implementing full shutdown of computers.	2011	2014
Implement server virtualization	Ongoing/In Progress	50	% of servers have been virtualized since start year indicated	The percentage of virtualized servers increased from approximately 25 to 50% in 2011.	Continue to virtualize existing servers and add new servers as virtual machines onto fewer hosts rather than adding native hosts.	2010	2014
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	50	% of computers have auto-sleep settings applied	Implemented Windows 7 software which has better capabilities for enforcing sleeping behaviour onto machines.	Further deployment of Windows 7 with its superior auto sleep control.	2011	2014
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	In Development			Printer usage evaluation project undertaken to document existing equipment and usage. RFP issued to select vendor to implement reduction.	Select vendor and reduce number of standalone printers.	2011	2013
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	In Development			Printer usage evaluation project undertaken to document existing equipment and usage.	Select vendor and reduce number of standalone printers and apply auto sleep settings.	2011	2013
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	35	% of computers are ENERGY STAR rated	Replacement of older equipment with Energy Star compliant equipment.	Continue to replace older equipment with Energy Star equipment.	2009	No End Date (Continuous)
Behaviour change program							
Encourage use of stairs instead of elevators	Ongoing/In Progress			The JIBC Wellness Committee encourages staff to use stairs with posters displayed at our New Westminster Campus.	Wellness Committee poster campaign will be continued.	2004	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Turn off the lights stickers and posters are displayed at all campuses; Maintenance, Security and Janitorial Staff are regularly encouraged to ensure lights are turned off in unoccupied areas.	Turn off the lights campaign will be continued.	2008	No End Date (Continuous)
Supplies (Paper)							
Paper Type							

Justice Institute of British Columbia - 2011 Carbon Neutral Action Report

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Purchase 30% post-consumer recycled paper	In Development	50	% of total paper purchased contains 30% recycled content	The Print Shop which prints the majority of the Institute’s course materials continued using paper with 30% recycled content.	Expand use of 30% recycled content paper throughout the Institute.	2010	No End Date (Continuous)
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Completed in 2011			All networked printers with this capability have been set to default double sided printing.		2009	2011
Electronic media in place of paper							
Use electronic document library for filing common documents	Completed in 2011			All departments have access to shared drives.		2009	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			Selected course materials have been converted into electronic format and some groups are filing reports in electronic format; we intend to expand this practice going forward.	We intend to expand this practice going forward.	2009	No End Date (Continuous)
Behaviour change program							
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Some groups currently encourage staff to hold paperless meetings. In 2011 we formed a Green Campus Team to provide a forum for the advancement and implementation of environmental sustainability initiatives such as this at the JIBC.	We intend to expand this practice going forward.	2010	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress			In 2011 we formed a Green Campus Team to provide a forum for the advancement and implementation of environmental sustainability initiatives such as this at the JIBC.	We intend to expand this practice going forward.	2010	No End Date (Continuous)

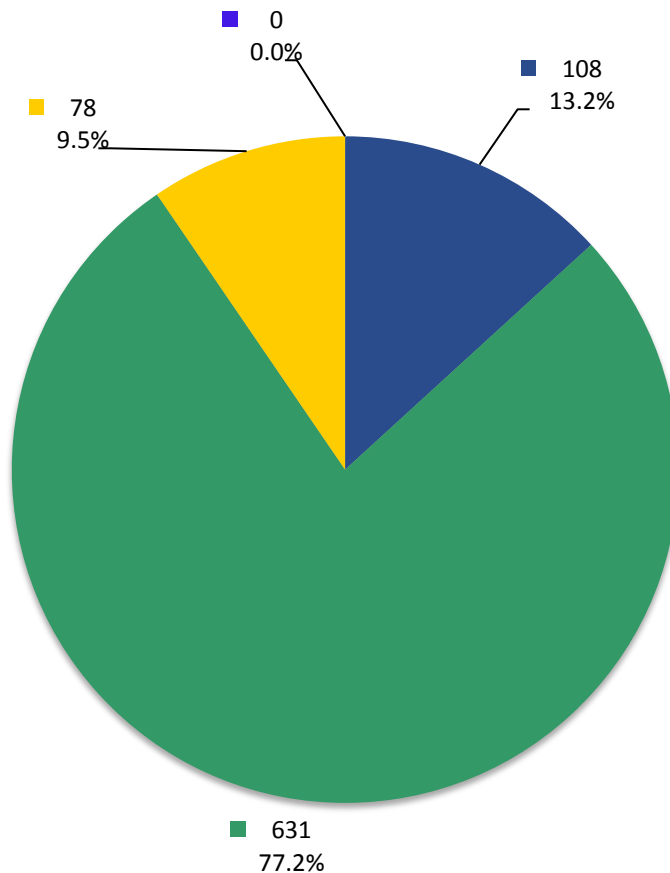
Justice Institute of British Columbia - 2011 Carbon Neutral Action Report

Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
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**Justice Institute of BC
Greenhouse Gas Emissions by Source
for the 2011 Calendar Year (tCO₂e*)**



Total Emissions: 818

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

Offsets Applied to Become Carbon Neutral in 2011 (Generated May 18, 2012 11:09 AM)

Total offsets required: **814**. Total offset investment: **\$20,350**. Emissions which do not require offsets: **4** **

*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.