

Carbon Neutral Action Report

2012

British Columbia Institute of Technology





Executive Summary

BCIT is integral to British Columbia. As the largest polytechnic institute in Western Canada, the institute plays a distinct role in the economic, social, and environmental prosperity of the province—constantly looking for innovative ways to tackle challenges that affect the lives of all British Columbians.

BCIT's commitment to environmental sustainability is a key part of the institute's forward-thinking mindset, and the impetus behind the "Greening Campus" initiative, whose activities are outlined in this Carbon Neutral Action Report.

Designed to showcase BCIT's leadership in sustainability education and applied research, the "Greening Campus" initiative transforms the BCIT campuses into living laboratories of environmental stewardship and sustainability practices. The initiative has successfully undertaken specific goals to make BCIT greenhouse-gas neutral, a net energy producer, a zero-waste producer, and water-balanced.

Executive Approval

Lorcan O'Melinn
Vice President, Finance & Administration



2012 Greenhouse Gas Emissions

In 2012, total GHG emissions for BCIT were 9,676 tCO₂e.

Offsets Applied to Become Carbon Neutral in 2012

In 2012, 9,673 tCO₂e were purchased from Pacific Carbon Trust to become carbon neutral (3 tCO₂e were Biomass Emissions which do not require offsets). An additional 96 tCO₂e were purchased as an adjustment to offsets from 2011.

Emissions Reduction Activities in 2012

Key initiatives taken between January 1, 2012 and December 31, 2012 to reduce greenhouse gas emissions include:

- Completed the conceptual design and planning for the NRCAN Clean Energy Fund (CEF) demonstration project which entails the installation of a 250 KW Photovoltaic array on the Burnaby Campus coupled with 500 KWh of Lithium Ion battery storage, and two DC Fast Charge EV charge stations grid tied to the Campus electrical distribution system. Partners on this project include BC Hydro, Siemens, Panasonic, and Schneider Electric.
- Negotiated agreement with the Electric Power Research Institute (EPRI), BC Hydro, and Greensmith Energy Management Systems to install

a 75kWh Lithium Ion Battery Energy storage system adjacent to the new CoGen facility in SE8.

- Continued development of BCIT's own Energy Management System (EMS) by the BCIT Group for Advanced Information Technology (GAIT), by introducing a new mesh network to support wireless smart meter communications. Six existing building gas meters were retrofitted with wireless mesh communication modules and added to the Campus Utility Monitoring smart meter grid. Added nine new sub meters to the smart meter grid for additional building level monitoring.
- Improved parking lot safety and addressed significant deferred maintenance backlog by replacing 76 HID 250 W parking lot Cobra head fixtures with 142 W LED fixtures. Initiated planning for phase III parking lot safety improvements.
- Increased the Green Team membership and established annual funding to support activities resulting in an increase in bike to work participation.
- Completed a waste stream audit of the Burnaby Campus



Plans to Continue Reducing Greenhouse Gas Emissions: 2013-2016

Key areas of greenhouse gas reduction that BCIT will be focusing on over the next three years.

- Continue with communication of sustainability initiatives in the institute's lunch and learn presentations, newsletters, website, and other social media.
- Continue to expand the Campus Utility Monitoring smart meter grid.
- Enrol Satellite Campuses in BC Hydro Continuous Optimization program
- Develop terms of reference for next generation building perimeter lighting specs.
- Implement parking lot lighting safety program phase III based on available funding.
- Introduce Pilot food waste recycling program at Burnaby Campus.
- Expand on-site compost program
- Expand the Waterless urinal pilot program to select locations on the campus.
- Working with key stakeholders, expand the number of bike lockers on all Campuses.
- Expansion of the EV charging network at all Campuses.
- Multi-functional devices will be strategically placed throughout the campus to replace the many

standalone printer stations on the campus.

- Water filling stations are being installed in select locations to reduce the use of bottled water.

More Information About Sustainability at BCIT

For additional information about sustainability at BCIT, please visit our website at www.bcit.ca/sustainability/

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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 Greenhouse Gas Reduction Targets Act.					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	This has been common practice at BCIT prior to 2009.	Continue to conduct fleet driver training to reduce fuel use to new employees.	2008	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	In Development	Introduced a pilot anti-idling policy for all landscape equipment.	Evaluate results from pilot program and build on success.	2013	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	This has been common practice at BCIT prior to 2009.	Continue to encourage fleet carpooling.	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	This has been common practice at BCIT prior to 2009.	Continue to promote alternative modes of transportation like BCIT's "Bike to Work Week."	2008	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	1. Increased the service vehicle fleet by 5 new electric powered vehicles (golf carts). 2. Had firmware upgrades applied to 2 Level 2 EV charge stations which allowed for a wider range of EVs to use them.	1. Ongoing review of service vehicle requirements. 2. Install 2 new Level 2 EV charge stations at the Gateway building. 3. Replace 1 Level 2 EV charge station at the CARI building. 4. Install 2 new Level 2 EV charge stations at the Downtown campus.	2010	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	In Development	None	Identify opportunities to downsize on case by case basis when older models are replaced; funding dependant.	2013	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Part of routine maintenance of vehicles.	Continue with maintenance program.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through ""workstation tune-ups""	Ongoing/In Progress	Continued with the messaging to and helpful tips in e-mails, newsletters, lunch and learns, etc.	Continue with the messaging to and helpful tips in e-mails, newsletters, lunch and learns, etc.	2010	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Communication sent to staff through BCIT Announcements to "power down" during school breaks. All cafeterias turn off lights and equipment (fridges, ovens, and grill exhaust vents) during school breaks and long weekends.	Continue promotion of "power down" during school breaks.	2012	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Not Yet Evaluated				No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Not Yet Evaluated				No End Date (Continuous)
Encourage use of stairs instead of elevators	Not Yet Evaluated				No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Continuation of the light saver program. "Turn off the lights" stickers included in New Employee welcome package.	Continuation of the light saver program.	2009	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	Installed new high efficiency Hobart Advansy dishwasher in SE2. Unit incorporates on demand hot water and heat recovery from discharges.	Continue to identify possible improvement.	2010	No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Completed (in Previous Year)				No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Implement server virtualization	Completed (in Previous Year)				No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed (in Previous Year)				No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Completed (in Reporting Year)	15% reduction in single stand alone printers. Installation of new MFD's in place of single stand alone printers completed.		2009	2012
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Completed (in Previous Year)				No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Completed (in Previous Year)				No End Date (Continuous)
Leased buildings					
Establish energy performance baseline for leased buildings	Not Yet Evaluated				No End Date (Continuous)
Lease space with operations and maintenance performance labelling/certification (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Lease space with commercial interiors performance labelling/certification (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Lease space in buildings with new construction performance labelling/certification (e.g., LEED NC)	Not Yet Evaluated				No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Not Yet Evaluated				No End Date (Continuous)
Other Stationary Fuel Combustion					
Install an on-site renewable energy demonstration project.	Ongoing/In Progress	1. Feasibility study to implement micro-grid command and control technologies into Burnaby campus high voltage substations. Evaluating GE micro-grid controller applications. 2. Conceptual design and planning for the NRCAN Clean Energy Fund (CEF) project which entails the installation of a large 250 kW Photovoltaic array on campus, coupled with 500 kWh of Lithium Ion battery storage and two DC FAsT Charge EV stations. 3. Developed terms of reference for campus Utility master planning process. 4. Negotiated agreement with the Electric Power Research Institute (EPRI), BC Hydro, and Greensmith Energy Management Systems to have a 75 kWh Lithium Ion Battery Energy storage system installed in close proximity to the new CoGen facility in SE8. 5. Installed ~15 kW PV array on the roof of the new Gateway building.	1. Develop design standards for micro-grid integration into Goard Way substation renewal project. 2. Perform Detailed Design and much of the construction for the CEF project. 3. Initiate campus Utility master plan. 4. Complete installation & commissioning of EPRI battery storage system.	2010	No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	Ongoing/In Progress	1. Made changes to GAIT's Energy Management System (EMS) and installed gear in BCIT's Maquinna residence to monitor temperature of the electric hot water tanks, and enable Demand Response to optimize energy consumption. 2. Modified the EMS to display new metering data for the Factor IV project in cooperation with the School of Construction & the Environment. New buildings metered are NE2, NE4, NE6, and NE8. 3. Applied to BCH for Continuous Optimization program for CARI,	1. Integrate the data from the Tantalus system into our own Energy Management System. 2. Integrate data into our EMS from a new heat meter that will monitor thermal energy delivered to building NE1 from BCIT's central plant. 3. Implement the COP program for the approved buildings.	2010	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		DTC, BMC, and ATC (satellite campuses).			
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Ongoing/In Progress	Finalizing LEED Gold certification for SW1 Gateway project.	LEED certification is a requirement for all new construction projects.	2010	No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	None	Comply with required minimum LEED Gold Standard for new buildings.	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Sustainability and energy consumption are key considerations evaluated in all maintenance upgrade projects.	Continue to incorporate energy and sustainability initiatives in all maintenance upgrade projects.	2010	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	In Development	Pilot program to reduce the number of small AC units in building NE1.	Review the maintenance and operational history of small AC units and consolidated into larger cooling systems where practical.	2013	No End Date (Continuous)
Planning/management					
Reduce office space (square meters) per employee	Ongoing/In Progress	Wherever possible, we have applied provincial Government Office Space Standards (GOSS) to new and renovated offices. On average, the GOSS guidelines are approximately 5% more efficient than BCIT's previous space standards.	Continue to apply Government Office Space Standards (GOSS) to future developments and renovations.	2010	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	1. Smart utility meters were installed in buildings NE23, NE8, SE2/SE8, SE16, SE10, SE1, SE6, and NE8. 2. Installed energy meters for new chiller at CARI building. 3. Installed power monitoring in 6 computer labs in SE6 & SE12. 4. Pilot program: retrofit communications module to existing gas meters and connect to campus utility meter grid. Buildings: NE1, NE2, NE3, NE4 & NE6. 5. Acquired electrical meters, software, hardware, and data communication gear from Tantalus Systems that allows monitoring of electrical generation from the Photovoltaic (PV) on building SE10, the VBINE wind turbine at AFRESH, and some computer labs in SE12. 6. Acquired Itron ERTS from Tantalus to allow us to monitor 6 gas meters on campus.	1. Continue to expand campus utility meter grid. Add Royal Oak and SW1 Gateway buildings. 2. Evaluate gas meter pilot program and expand where practical. 3. Connect the Itron gas ERTs to the Tantalus system.	2010	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	1. Replaced old inefficient chiller at CARI building with new high efficiency Turbo Core unit. Installed efficiency monitoring metering to evaluate part load and shoulder season inefficiencies. 2. NE8 full HVAC upgrade: constant volume make-up air units and fixed exhaust system upgraded to full on demand variable air volume delivery and extraction system. 3. GNW shop exhaust fan upgrade: constant volume fixed exhaust system upgraded to full on demand variable air volume extraction system. 4. SE1 & SE6 heatpump upgrade 5. SE12 machine room cooling upgrade to high efficiency cooling system.	1. Feasibility study for HVAC upgrade for NE10, NE12, SE16, NE1-3rd floor, and SE2-1st floor. 2. Feasibility study for BCH continuous optimization program for ATC, BMC, DTC, and CARI.	2010	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	1. Parking lot HID lighting pilot program. Phase 1: installed 19 LED lights. 2. Parking lot HID lighting pilot program. Phase 2: 76 HID 250 W	1. Replace 90 HID parking lot lights with lower wattage LED. 2. Pilot program for interior LED harvesting lighting replacement in SE1 atrium.	2010	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		Cobra Heads replaced with 142 W LED fixtures. 3. Pilot interior LED program. 60 fixtures complete - replacing 2 lamp, T8 30W with 1-30W plus harvesting. 4. Feasibility study SE2 outdoor corridor HPS fixture replacement options. 5. Pilot program PAR50 pot light retrofit with LED. 6. Pilot program outdoor canopy walkway HPS lighting replacement with LED fixtures. 7. Feasibility study SE16 lighting control upgrade.	3. SE16 lighting control upgrade. 4. Expand interior lighting LED program as funding permits. 5. Replace SE2 outdoor corridor HPS lighting with high efficiency LED lighting. 6. Design/Development and planning for next generation building perimeter lighting. Replace HID wall packs with LED.		
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	1. Phase 2 Marine Campus DDC control upgrade. 2. SE16 DDC control upgrade feasibility study underway. 3. ATC feasibility study for demand control ventilation in shop areas.	1. Implement SE16 partial DDC control upgrade. 2. Implement demand control ventilation in ATC shops.	2009	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	1. Marine Campus 3rd floor envelope upgrade c/w thermal paned windows. 2. SE8 building envelope upgrade planning underway.	1. Phase 2 envelope upgrade for marine campus planning underway. 2. SE14 envelope upgrade planning underway 3. SE8 building envelope upgrade	2010	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	Continued training staff on use of SharePoint and other collaborative software.	Continue training staff on use of SharePoint and other collaborative software.	2008	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Introduced Sharepoint to store meeting agendas that are accessed online by attendees. This is now standard at the sustainability meetings.	Continue to encourage use of Sharepoint for meeting agendas.	2009	No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	SharePoint software widely introduced across the campus. Average number of page views per day increased from 306 in 2011 to 1860 in 2012. Average number of unique vistors per day increased from 7 in 2011 to 50 in 2012.	Continue to increase awareness of SharePoint.	2011	No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	1. Historical archive database and website created to digitize BCIT's historical pictures, video and audio, documents, and publications. 2. BCIT Library replaced some journal subscriptions with online databases eliminating paper versions. 3. More fillable pdf forms were made available through various departmental websites.	1. Program Advisory Committee and EDCO will be utilizing SharePoint for document sharing.	2009	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Completed (in Previous Year)				No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Completed (in Previous Year)				No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Completed (in Previous Year)				No End Date (Continuous)

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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					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	Ongoing/In Progress	Continued self support of teleconferencing.	Continued self support of teleconferencing.	2011	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Not Yet Evaluated				No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	No steps taken in 2012.	Encourage staff to carpool to meetings.	2009	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Staff encouraged to cycle to work and meetings through "Bike to Work" Week and the "Commute Smart" campaign.	Continue promotion of "Bike to Work" week and "Commute Smart."	2008	No End Date (Continuous)
Policy and budgeting					
Create a low-carbon travel policy or travel reduction goal	Ongoing/In Progress	Alternate means of communication encouraged instead of travel.	Continuation of travel reduction review and processes for development of travel alternatives.	2009	No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	Encouraged the use of video conferencing technology wherever possible. Including the technology for student instruction.	Continue with the promotion of the technology to staff and faculty.	2008	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress	New laptops distributed in computer roll-out program are fitted with web-cameras.	Continue roll-out of web-camera fitted laptops.	2012	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	Continued with the promotion of video-conferencing technology to staff and faculty.	Continue with the promotion of video-conferencing technology to staff and faculty.	2008	No End Date (Continuous)
Education, Awareness, and Engagement					
Awards/Recognition					
Establish a sustainability/green awards or recognition program	Ongoing/In Progress	No steps taken in 2012.	More to reinstate "Earth Apple" award.	2008	No End Date (Continuous)
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Education committee workshops held.	Committee has developed online "Climate Science Literacy" course for all staff. Will be launched in 2013.	2009	No End Date (Continuous)
Include green options in employee performance measurement system	Not Yet Evaluated				No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Ongoing/In Progress	Commitment to "Climate Science Literacy" course.	Committee has developed online "Climate Science Literacy" course for all staff. Will be launched in 2013.	2009	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	Provide employee's with "Energy Checklist".	Continue with energy savings education initiatives and info-programs.	2009	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	Monthly features on sustainability initiatives on the website and newsletter.	Monthly features on sustainability initiatives on the website and newsletter.	2010	No End Date (Continuous)
Provide sustainability education during new staff orientation	Not Yet Evaluated				No End Date (Continuous)
Team-building					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	"Green Team" membership increased from 40 to 70.	Continue to monitor increase in "Green Team" participation.	2008	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	Green Team activities are funded and supported by staff.	Continue to fund Green Team activities and encourage staff participation.	2011	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g.,	Ongoing/In	Communication to encourage participation in Green Team initiatives	Continue with communication to encourage participation in Green	2011	No End Date

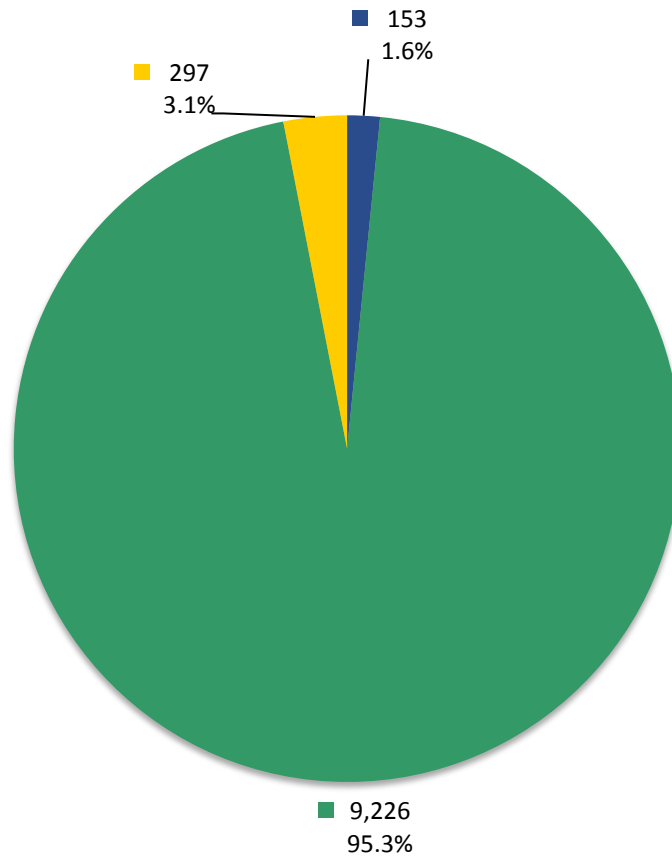
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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
community-based social marketing)	Progress	sent out via BCIT Announcements database.	Team initiatives through BCIT Announcements database.		(Continuous)
Other Sustainability Actions					
Adaptation to Climate Change					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	Not Yet Evaluated				No End Date (Continuous)
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Not Yet Evaluated				No End Date (Continuous)
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	In Development	No steps taken in 2012.	Minimum requirement standard will be established to encourage reuse of materials.	2013	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	In Development	No steps taken in 2012.	Establish a standard to incorporate lifecycle costing in new construction and renovations.	2013	No End Date (Continuous)
Commuting to and from home					
Introduce telework/work from home policy	Not Yet Evaluated				No End Date (Continuous)
Offer staff a compressed work week	Not Yet Evaluated				No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	1. Commuter stations set up in June & November that included free food, beverages, bike information, and a bike mechanic. Total cyclists in June: 79, 30 stopped; November: 74, 32 stopped. 2. April 2012 - launch of BCIT Bikes website: http://www.bcit.ca/cycling/ 3. May 2012 - Dusk to Dawn Spin-a-thon community even to raise awareness about biking to work/school. 4. June 2012 - Bike to Work Week with commuter station. 5. June 2012 - Green Team launched 2012-2013 Commute Smart campaign with focus to reduce SOV use to and on campus. 6. September 2012 - Farmers Market - Bike Committee had an information table plus a bike mechanic. 7. November 2012 - Bike to Work Week with commuter station.	Continue with semi-annual commuter stations and promote "Bike to Work Week". March 2013 - Bicycle commuting fashion included as part of the Commute Smart On The Go Fashion Show event. March 2013 - Workplace Bikeability Assessment at ATC campus and tenant building done by HUB, a Greater Vancouver bike advocacy organization. 2 bike workshops by HUB are included in plans for BCIT's 2013 PD Day.	2010	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress	No steps taken in 2012.	Planning included in future developments/renovations.	2011	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress	New bike parking area with bike lockers and benches created at the east side of SE16 (Recreation Services building)	More lockers planned.	2010	No End Date (Continuous)
Procurement (non-paper supplies)					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress	Toner recycling program initiated. 94% of toner used at BCIT is now recycled. Toner is taken away by RICOH and recycled.	Monitor, review, and evaluate.	2008	No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	In Development	No steps taken in 2012.	Product standards will be established.	2013	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Completed (in Previous Year)				No End Date (Continuous)
Waste reduction/diversion					
Put in place an operations policy to facilitate the reduction and diversion	Ongoing/In	1. Installed water bottle refilling stations in student lounge areas of	1. Install additional water bottle refilling stations.	2008	No End Date

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
of building occupant waste from landfills or incineration facilities	Progress	SE16, NE1, and SE14. 2. Feasibility study to expand water bottle refilling stations in key student lounge areas. 3. Initiated a waste audit for Burnaby campus. 4. Expanded deployment of campus recycling containers by 36%. 5. Plastic cutlery is controlled by food service staff and only given out as per customer's request. 6. Eliminated Styrofoam products from the cafeterias and implemented biodegradable or compostable food containers. 7. Developed terms of reference to increase on-site composting from landscape services. 8. Implemented a coffee discount card to customers that use their own mug or water bottle at cafeterias.	2. Implement recommendations from waste audit as funding permits. 3. Implement full on-site recycling of all green waste generated through landscape services at Burnaby campus.		(Continuous)
Implement a hazardous waste reduction and disposal strategy	Completed (in Previous Year)				No End Date (Continuous)
Water conservation					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress	1. Continued pilot program testing waterless urinals in SW1 Gateway. 2. Installed new high efficiency Hobart Advansy Dishwasher in SE2 cafeteria. The new dishwasher will save 500,000 litres of water per year.	1. Evaluate pilot program.	2010	No End Date (Continuous)
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	Ongoing/In Progress	Developed projects to replace cooling towers in SE2 and NE1 with high efficiency towers that utilize VFD's and free cooling.	Implement cooling tower replacement projects in SE2 and NE1.	2011	No End Date (Continuous)
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Ongoing/In Progress	Developed terms of reference for stormwater management in new landscape services contract.	Develop stormwater management principles for Goard Way utility renewal project.	2010	No End Date (Continuous)

**British Columbia Institute of Technology
Greenhouse Gas Emissions by Source
for the 2012 Calendar Year (tCO₂e*)**



Total Emissions: 9,676

- 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 2012 (Generated May 27, 2013 11:22 AM)

Total offsets required: **9,673**. Total offset investment: **\$241,825**. 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.