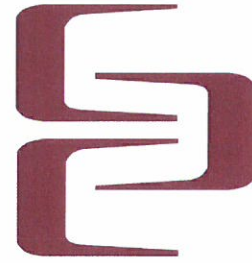


College of New Caledonia



CNC Main Campus Prince George

College of New Caledonia 2012 Carbon Neutral Action Report

Executive Summary

The College of New Caledonia remains committed to reducing its overall energy consumption and the promotion of green initiatives. A highlight for the 2012 period were extensive lighting retrofits at the main campus, and continued planning for a complete upgrade to our aging Power Plant facility. Power Plant upgrades will include the installation of new highly efficient cooling towers and chiller mechanicals, as well as complete renewal of the main power distribution centre. We continue to explore every avenue available to reduce energy consumption, while maintaining a healthy internal environment for all of our occupants.

Actions taken to reduce greenhouse gas emissions in 2012

- CNC's Energy Management Program began expansion to the Regional Campuses. Walkthrough audits of these facilities have identified several energy conservation opportunities, and monthly energy reporting to Regional Managers is underway.
- CNC applied to the Provincial Government for \$1.7 million to upgrade the Main Campus Power Plant and HVAC peripherals. An RFP was drafted for engineering services to prepare a long-term space heating, cooling, and ventilation strategy. Phase 1 of this project was awarded and was completed in the 2012/2013 fiscal period. Phase 1 included the replacement of our inefficient cooling towers and chillers, as well as the total replacement of our aged power distribution centre.
- Security personnel continue with the nightly manual shut down of Prince George Main Campus common area lighting. This ongoing initiative is estimated to save an average of 84,000 kWh/year.
- Fortis BC provided funding for two walkthrough-level energy audits in 2011: one for the Main Campus and one for the Brink Building. The audits made recommendations that could save approximately 3,880 GJ (approximately \$26,800) annually if implemented. The majority of these savings will be realized during our comprehensive Power Plant upgrade.
- In Fiscal Year (FY) 2011, work was initiated with the Human Resources department to identify jobs within the College with strong links to energy consumption. In FY2012, CNC worked closely with staff to ensure that energy conservation played a significant role in the job description used to replace the Power Plant Supervisor. Responsible for Power Plant and building systems operation, this role is more closely linked to energy consumption within the organization. Work will continue in FY2013 to include energy conservation language and expectations in the job descriptions and performance evaluation criteria for targeted areas.
- Monthly reporting of energy consumption and cost data to Regional Campuses began in 2011.
- CNC recognizes that engaging the student body is very important in developing an energy conservation/sustainability culture on campus. A Green Team was established in the Student Residence in the autumn semester of 2011. An energy awareness and reporting strategy remains under development that will target residents for conservation. With installation of the Residence's pulse output sub-meter, both electricity and natural gas consumption can now be monitored and reported to residents.

2012 Greenhouse Gas Emissions: 2700 tonnes

Offsets Applied for to become Carbon Neutral in 2012: 2700 tonnes

Plans to Continue Reducing Greenhouse Gas Emissions 2013-2014

- In 2013 CNC will continue to build upon its foundation of energy management best practices in the following areas:
 - Energy efficiency projects
 - Capital projects with energy efficiency opportunities
 - Major Capital Projects
 - Non-capital initiatives
 - Program expansion at regional campuses
- Continue to work with the Purchasing Department and project teams to ensure that language is included in purchase documentation (RFPs, RFQs, tenders, service contracts, etc.) that requires life cycle energy consumption to be considered in evaluating equipment specifications and project design.
- Work with the Facilities Services Department through review and recommendations where applicable to amend the existing preventative maintenance program to ensure that each major type of energy consuming equipment is maintained to achieve peak energy efficiency.
- Continuous monitoring of campus classroom configurations to permit class clustering to minimize to number of zones to be heated and/or cooled.
- Initiate a daylight harvesting program by installing area light monitoring systems to reduce or eliminate electrical lighting requirements based on natural light intensity levels.
- Audit fleet vehicle needs based on passenger load, and replace vehicles with smaller more fuel efficient units where practical.
- Continue and complete optimization opportunities as identified in the energy audit for the John A Brink Technological Centre.
- CNC will continue to work very closely with BC Hydro and Fortis Gas representatives to identify all new opportunities/incentives available to assist with energy reduction costs.
- CNC forecasts project budgets will continue to be very specific to allocation well into the future. Recognizing that this will reduce the College's flexibility to implement non-essential energy conservation projects; CNC will roll over incentive dollars received from major projects into micro projects to support additional energy conservation initiatives.



New High Efficiency Lighting in Corridors

Penny Fahlman, Vice President Finance and Administration

May 14/2013
Date

College of New Caledonia
BRITISH COLUMBIA • CANADA



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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	Increased accountability measures implemented to heighten awareness of fuel consumption, kilometers driven and safety awareness. Department fleet vehicle usage chargebacks highlighted to reduce fleet vehicle use to a minimum.	Continue to promote practice.	2010	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress	Communications issued for drivers at CNC to observe anti-idling behavior + anti-idling signs have been posted at the Prince George campus.	Continue to promote practice.	2010	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Encourage carpooling in fleet vehicles. Purpose of trip and number of occupants in vehicle required upon vehicle request to ensure right-sizing and most fuel efficient vehicle available is utilized.	Continue to promote practice.	2009	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Secure bicycle storage is available and use of public transit and walking are encouraged.	Maintain secure storage areas and promote alternate modes of transportation such as public transit, walking, etc.	2008	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Fuel consumption is part of the new vehicle procurement evaluation criteria.	Audit fleet vehicle needs based on passenger load, and replace vehicles with smaller more fuel efficient units where practical. Continue Practice.	2011	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "rightsizing" principles	Ongoing/In Progress	Vehicle right-sizing continues as part of the new vehicle procurement evaluation criteria.	Continue practice.	2010	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Entire fleet is subject to weekly maintenance checks and scheduled maintenance based on vehicle mileage.	Continue Practice	2010	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through ""workstation tune-ups""	In Development	Help staff reduce personal energy use through ""workstation tuneups""	Initiate education program for all staff.	2012	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Periodic reminders to staff/students to reduce electricity by unplugging devices and switching off power bars.	Continue practice.	2009	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Periodic reminders to staff/students to reduce electricity by unplugging devices and switching off power bars.	Continue practice	2009	No End Date (Continuous)

College of New Caledonia - 2012 Carbon Neutral Action Report

Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Periodic reminders to staff/students to close blinds at the end of the day. Selected rooms not in regular use during vacation/holiday periods are locked up and blinds are drawn.	Continue practice.	2009	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress	Ongoing	Continue practice.	2009	No End Date (Continuous)
Actions Towards Carbon Neutrality					
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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Provide tips to staff on saving energy in the office while working outside of regular business hours	In Development	Begin development of energy reduction plan for staff working outside of regular business hours.	Complete development of plan and initiate.	2012	No End Date (Continuous)
Encourage use of stairs instead of elevators	In Development	Post signs encouraging staff and students to use stairs over elevators for health benefits and to reduce energy.	Continue practice	2012	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Various signs and posters throughout the institution promote this practice.	Continue practice.	2009	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	Student Residence turned hot water supply off to washers and posted signs indicating that units will only work on cold water setting.	Develop and implement Hot Water conservation plan for the Culinary Arts Program	2009	No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	Currently maintaining 2010 levels.	Continue and expand practice within main campus, as well as in all regional campuses.	2009	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress	Regional server complete.	Incorporate virtualization within all regional areas.	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	Default settings from computer as new units are introduced.	Continue practice.	2009	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	Ongoing/In Progress	Continually reviewed and devices removed as funding permits.	Continue practice.	2009	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multifunction devices	Ongoing/In Progress	Majority of equipment is set on to this feature.	Continue practice.	2009	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	Current Standard of Practice	Continue practice.	2009	No End Date (Continuous)
Leased buildings					
Establish energy performance baseline for leased buildings	In Development		Engage consultant and develop baseline benchmarks as funding permits.	2012	No End Date (Continuous)
Lease space with operations and maintenance performance labelling/certification (e.g., LEED EB:O&M)	In Development		Incorporate into future lease agreement discussions where applicable	2012	No End Date (Continuous)
Lease space with commercial interiors performance labeling/certification	In Development		Incorporate into future lease agreement discussions where	2012	No End Date

College of New Caledonia - 2012 Carbon Neutral Action Report

(e.g., LEED CI)			applicable.		(Continuous)
Lease space in buildings with new construction performance labelling/certification (e.g., LEED NC)	In Development		Incorporate into all future lease agreements wherever possible.	2012	No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	In Development		Incorporate into all future lease agreements wherever possible.	2012	No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	In Development		As funding permits.	2011	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	In Development		As funding permits.	2011	No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	In Development		As funding permits.	2011	No End Date (Continuous)
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
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	All new buildings are constructed to LEED Gold standards.	Continue practice.	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Major Lighting retrofits completed.	Major Power Plant Heating and Cooling Retrofits planned and in progress.	2008	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Complete upgrade of cooling system mechanicals at CNC Main Campus as well as a refrigerant management audit at all Regional facilities.	2012	No End Date (Continuous)
Planning/management					
Reduce office space (square meters) per employee	Ongoing/In Progress	New buildings and renovations continue to be designed with shared or reduced office space requirements.	Continue practice.	2009	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	Brink building has real time metering.	Initiate real time metering, monitoring, measuring and reporting structures for all campus buildings.	2010	2010
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Complete mechanical heating, cooling, ventilation retrofits in progress for CNC Main Campus. This includes New Boilers, Chillers, and Cooling Towers.	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Upgraded lighting systems in Main Campus, Satellite buildings.	Continue upgrades in classrooms and common areas as funding permits.	2008	No End Date (Continuous)

College of New Caledonia - 2012 Carbon Neutral Action Report

Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Upgrade/adjust control systems during retrofits.	Upgrade all mechanical drives from direct drive to Variable Speed/Frequency controls as funding permits. Increase levels of lighting controls to incorporate additional motion sensors, and daylight harvesting technology.	2008	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	Improve building insulation (including windows) during retrofits	Continue practice	2008	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	In development	Launch in conjunction with Communications and Continuing Education groups.	2010	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Continued Practice	Continue practice.	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	Continuous evaluation of software availability and upgrades to enhance electronic options.	Continue practice	2009	No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	Continued standard of practice.	Continue practice.	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress	Completed moving payroll to electronic.	Continue practice.	2012	No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	Continuing to develop paper purchasing strategy.	Evaluate supply options and product availability at end of current supply contract in 2013.	2008	No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Ongoing/In Progress	Continuing to develop paper purchasing strategy.	Evaluate supply options and product availability at end of current	2008	No End Date
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
	Progress		supply contract in 2013.		(Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	Continuing to develop paper purchasing strategy.	Evaluate supply options and product availability at end of current supply contract in 2013.	2008	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	2 sided printing set as default on all network printers.	Continue practice.	2012	No End Date (Continuous)

College of New Caledonia - 2012 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					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	Ongoing/In Progress	Continued to train staff as required.	Continue practice.	2008	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress	Continued to encourage staff to use this technology.	Continue practice.	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	Encouraged practice.	Continue practice	2008	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Encouraged practice.	Continue practice	2008	No End Date (Continuous)
Policy and budgeting					
Create a low-carbon travel policy or travel reduction goal	Not Yet Evaluated				No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	In Development	Software being evaluated.	Evaluate and implement.	2011	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress	Continued practice	Continue practice.	2008	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	Continued practice.	Continue practice.	2009	No End Date (Continuous)
Education, Awareness, and Engagement					
Awards/Recognition					
Establish a sustainability/green awards or recognition program	In Development	Establish a sustainability/green awards or recognition program	Ongoing development and implementation	2013	No End Date (Continuous)
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Funds available for staff to attend workshops, conferences, and training.	Promote attendance at events.	2009	No End Date (Continuous)
Include green options in employee performance measurement system	In Development	Develop plan to include green options in employee performance measurement system	Ongoing	2013	No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Ongoing/In Progress	Information has been provided through various forums (email, library displays, etc.	Continue practice.	2009	No End Date (Continuous)

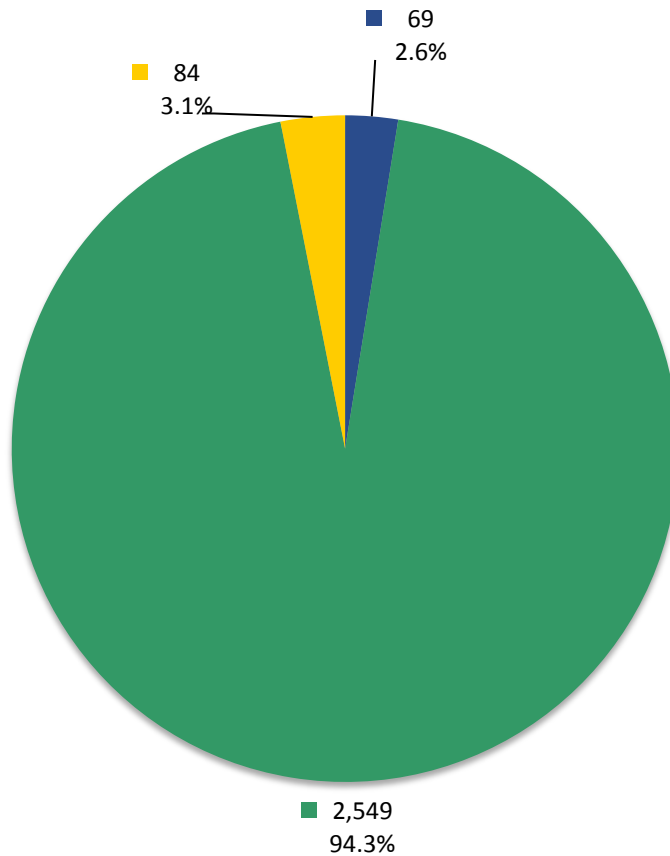
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Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	Information has been provided through various forums (email, library displays, etc.	Continue practice.	2009	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	Information has been provided through various forums (email, library displays, etc.	Continue practice.	2009	No End Date (Continuous)
Provide sustainability education during new staff orientation	Ongoing/In Progress	Information has been provided through various forums (email, library displays, etc.	Continue practice.	2009	No End Date (Continuous)
Team-building					
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
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	Green Team Established.	Optimization of education plan to all staff and students.	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	Responsibility reassigned to CNC Manager Facilities Services	Explore programs and resources for continued support.	2009	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress	Information provided at open houses and other events.	Continue practice	2009	No End Date (Continuous)
Other Sustainability Actions					
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress	Low value items are taken to second hand stores for reuse and higher value items are taken to asset recovery for auction.	Continue practice.	2008	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	Existing Practice	Continue practice.	2008	No End Date (Continuous)
Commuting to and from home					
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	Practice encouraged through various forums.	Continue practice	2008	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress	Facilities available for use.	Continue practice	2008	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress	Secure storage available.	Continue practice.	2008	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.)	In Development	Formal policy to be developed.	Develop and roll out.	2013	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,	In Development	Formal policy to be developed.	Formal policy to be developed and implemented.	2012	No End Date (Continuous)

College of New Caledonia - 2012 Carbon Neutral Action Report

carpeting, etc.)					
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	In Development	Reviewing green cleaning products for increased use in the facility.	Complete product audit and implement green alternatives.	2013	No End Date (Continuous)
Waste reduction/diversion					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	Reviewing trash compaction containers to reduce truck pick up and hauling of garbage to landfill.	Install Trash compaction units, and continue with additional recycling options for all facilities.	2008	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress	Hazardous waste reduction plan in place for electronics including computer parts and monitors, batteries, paints, fluorescent bulbs	Continue practice.	2009	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	Efficient models installed when units are replaced or renovations occur.	Continue practice.	2008	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	Project tendered for upgrades to Cooling Towers. Landscape water saving features incorporated into all new landscaping. Rain sensors on Irrigation systems installed.	Complete Cooling tower upgrade, and continue with all water use reduction strategies.	2009	No End Date (Continuous)
Introduce a storm water management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Ongoing/In Progress	Vegetated roof and rain gardens introduced with PGTEC building.	Continue to explore all available options.	2009	No End Date (Continuous)

**College of New Caledonia
Greenhouse Gas Emissions by Source
for the 2012 Calendar Year (tCO₂e*)**



Total Emissions: 2,702

- 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 11:25 AM)

Total offsets required: **2,700**. Total offset investment: **\$67,500**. Emissions which do not require offsets: **2** **

*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.