

**Executive Summary**

Capilano University is committed to the environment and the University's role as environmental steward. As natural resources become scarcer, Capilano University is taking steps to reduce its institutional impact on the environment. During 2008 Capilano University moved forward in its understanding of institutional energy consumption and Green House Gas emissions (eCO<sub>2</sub>s) and since August 2008 with the release of 3 baseline energy audits has been actively engaged in identifying opportunities and implementing sustainability initiatives to plan for carbon neutrality.

The specific steps taken to support the institutional commitment to carbon neutral government were:

Leadership commitment

- signing of the BC Hydro Power Smart Partner conservation pledge,
- signing of the University and College Presidents' Climate Change Statement of Action, and
- adoption of a Sustainability Policy for the Capilano University

Development of baseline understanding energy consumption

- Completed a baseline energy audit for all 3 campuses
- Established the base level of green house gas emissions (eCO<sub>2</sub>s) for all 3 campuses following Provincial government regulations and using government provided tools.

Identification of potential energy savings initiatives

North Vancouver Campus

- 11 Energy Saving Measures identified in Energy Audit by PRISM Engineering
  - o Cost to implement: \$886,669
  - o Estimated annual savings: \$94,766
- Summary of opportunities for behavioural changes
  - o 2009 - Cost to implement: \$5,000
  - o 2009 - Estimated annual savings: 5% consumption

Squamish Campus

- 5 Energy Savings Measures identified in Energy Study by Prism Engineering
  - o Cost to implement: \$20,450
  - o Estimated annual savings: \$7,346 (33% of current usage)
- Summary of opportunities for behavioural changes
  - o 2009 - Cost to implement: \$3,000
  - o 2009 - Estimated annual savings: 5% consumption

Sunshine Coast Campus

- 4 Energy Savings Measures identified in Energy Study by Prism Engineering
  - o Cost to implement: \$21,410
  - o Estimated annual savings: \$8,016 (36% of current usage)
- Summary of opportunities for behavioural changes
  - o 2009 - Cost to implement: \$3,000
  - o 2009 - Estimated annual savings: 5% consumption

Identification of potential (external) funding support

- Applied for PSECA funding totalling \$ 481,000
- BC Hydro Energy Manager Program \$100,000 renewable for 4 years

Actions taken to Reduce Emissions

1. Structural Changes

- Installed an energy efficient boiler system
- Installed vending misers on all vending machines at all 3 campuses
- Installed efficient pre-rinse spray valves in Food Services operation
- Identified Power Save software and piloted energy conservation pilot project for computers on the North Vancouver campus.

2. Sourcing Changes

- Analyzed paper consumption on campus and made a decision to switch from 100% virgin to 30% post consumer waste content.

3. Behavioural Changes

- Planned and began implementation of a 'Print Smarter' employee awareness campaign focused on energy reduction, equipment maximization, internal printing processes review and employee training on Multi-functional Printing devices to reduce paper consumption on campus
- Engaged students, faculty, staff and administration; working towards a common goal of community involvement to reduce energy consumption.

<b>Objectives</b>	<p>Employee Engagement</p> <ul style="list-style-type: none"> <li>• Successful management of change within the institution embraces employee involvement and contribution to environmentally sustainable solutions.</li> </ul> <p>Formation of EMS Energy Management Task Team. Capilano U encourages participation by all stakeholders.</p> <p>Social Responsibility</p> <ul style="list-style-type: none"> <li>• Re-commitment to recycling and refresh program with Telus and Tac Mobility for cell phones &amp; batteries. All re-furbished cell phones are distributed to Vancouver Women and Children's Shelter for use as emergency units on the TELUS Mobility network at no charge to them.</li> <li>• Donation of all surplus computers and monitors to 'computers for schools' program – diverting the surplus computers from disposal and extending their useful life-cycle</li> <li>• Distribution of surplus serviceable food from large catering events to the homeless; Union Gospel Mission and Vancouver Food Runners programs where possible.</li> <li>• Recycling of books; donating to Better World Books; funds raised from selling used books are directed to funding education in under-developed countries.</li> </ul> <p>Promoting Healthier Communities</p> <ul style="list-style-type: none"> <li>• Monthly wellness newsletters distributed throughout the institution.</li> <li>• Discounted corporate fitness memberships</li> <li>• 'Sun Run' team (Capilano Blues) established and promoted internally</li> <li>• Idle Free Campus Program – North Vancouver campus.</li> </ul>
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**Part 1: Actions Taken to Reduce Greenhouse Gas Emissions in 2008**

<b>Overview</b>	<p>Actions taken to Reduce Emissions</p> <p>1. Structural Changes</p> <p>The following initiatives completed in 2008 are expected to save \$231,281 and reduce energy consumption by 5,705,854 ekWh over 5 years.</p> <ul style="list-style-type: none"> <li>• Installed an energy efficient boiler system</li> <li>• Installed vending misers on all vending machines at all 3 campuses</li> <li>• Installed efficient pre-rinse spray valves in Food Services operation</li> <li>• Identified Power Save software and implemented pilot energy conservation project for computers on the North Vancouver campus. Pilot savings projections for 2009 on North Vancouver campus roll-out to be \$35,129 and a reduction of 783,000 kWh over 5 years.</li> </ul> <p>2. Sourcing Changes</p> <ul style="list-style-type: none"> <li>• Analyzed paper consumption on campus and made a decision to switch from 100% virgin to 30% post consumer waste content.</li> </ul> <p>3. Behavioural Changes</p> <ul style="list-style-type: none"> <li>• Planned and began implementation of a 'Print Smarter' employee awareness campaign focused on energy reduction, equipment maximization, internal printing processes review and employee training on Multi-functional Printing devices to reduce paper consumption on campus</li> <li>• Engaged students, faculty, staff and administration; working towards a common goal of community involvement to reduce energy consumption.</li> <li>• Continued with Idle Free Campus Program at the North Vancouver Campus</li> </ul>
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**1.1 Mobile Fuel Combustion**

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In Progress	# of alternate vehicles, % of fleet	Currently assessing an electric dump truck.

**1.2 Stationary fuel combustion and electricity**

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Undertaken workstation tune-ups to help staff understand what they can do to reduce personal energy use	In Progress	# workstations, % employees	2008 - Planning for a campus-wide awareness event. Campaign to be held in 2009
Supplied power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress	# workstations, % employees	Planning for a campus-wide awareness campaign to be held in 2009

Replaced # computers with Energy Star models	In Progress	# CPUS, # monitors, % workstations	Total # of CPUs installed: 464 - 341 ENERGY STAR ONLY (255 Seanix installed, 86 Seanix pending) -123 ENERGY STAR & EPEAT GOLD (95 Apple, 28 Dell)  Total # of monitors: 315 - 298 EPEAT SILVER (255 Samsung SyncMaster, 19 LG Various, 16 Dell 2408WFP, 8 Apple Display) - 17 NO EPEAT, ROHS only (Wacom Cintiq 21UX )  Total # of laptops: 63 63 ENERGY STAR & EPEAT GOLD (25 - Tecra A9's, 6 - Protégé R500, 2 - Satellite Pro P200, 15 – Apple)
Encouraged staff to use stairs	In Progress	# of employees,	Health & Wellness have ongoing programs to encourage and engage employees to participate in walking activities on campus. This includes monthly wellness brochures with fitness tips, awareness campaign and contests.
Replaced Refrigerators (Energy Star rated appliance)	Completed		Total of 3 refrigerators purchased 2 - ENERGY STAR 1 - not ENERGY STAR
Installed multi-function devices (and removed stand-alone printers/faxes)	In Progress	# printers removed	Print Smarter' campaign; campus-wide awareness & training began Dec 2008, ending June 2009
Replaced standard bulbs with CFLs	In Progress	metrics: # of bulbs removed, estimated kWh savings	have identified all standard bulbs on North Vancouver campus, need to confirm switch
Undertaken building energy audit at LOCATION(s)	Completed	Baseline audit of all buildings at all 3 campuses	Prism Engineering contracted to audit and report on North Vancouver, Squamish and Sunshine Coast campuses. Extensive audit of North Vancouver campus included energy analysis of each of the buildings along with identification of specific potential energy conservation initiatives

### 1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 100% recycled paper	Completed	Quantity of paper purchased by size & by % recycled content	Paper Analysis compiled, recycled content paper tested in MFDs, networked & stand-alone printers.
Encouraged re-use of furniture and equipment	In Progress		Surplus Goods are re-allocated within other areas of the institution, where ever possible.
Classroom tables; repair rather than disposal	Completed	# of tables repaired, \$\$\$ savings, solid waste reduction	Tables designated for disposal were refinished by manufacturer, instead of being either a) recycled or b) disposed as solid waste. Change in process resulted in cost savings, waste disposal savings to institution
Carpet Installation	Completed	amount of waste diverted from landfill	Sustainable carpeting installation, included the recycling of the old carpet.
Couch purchase	Completed	# couches, \$\$\$ savings	7 used couches were purchased and installed on the North Vancouver and Sunshine Coast campuses.

<b>1.4 Employee Engagement</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Provided conservation education	In Progress	# presentations, # tips posted	Power Point Presentations, tip of the week to Intranet 'Frontlines'.
Developed Green Teams	In Progress	# participants	Currently developing a plan for student and employee 'go green' teams.
Provided green tips	In Progress	# tips posted	Green tips posted weekly to 'Frontlines', University's internal website.
Supported professional development	Completed	Professional Development Seminar	Energy Manager presented 1/2 day educational seminar to Faculty
Capilano University Sustainability Policy	Completed	Policy adopted by Executive	Policy written with input from Faculty, staff and students of the University
Established Energy Management Task Team	Completed	Task team comprised of Director of Contract Services & Capital Planning, Director of Buildings & Grounds, Dean of Tourism, Dean of Business, Health and Safety Representative, Energy Manager established	Regular meetings to establish direction of sustainability initiatives on campus
Sustainability Pledge	In Progress	Policy adopted in principle by Executive; wording to be finalized	Sustainability pledge being piloted in several areas, including tourism to ensure wording accurately reflect the needs of the institution.
Student Awareness & Engagement - external events	Completed	no metrics	Instructors provided with information for the Go BeYond Teach-in, BC Hydro Student 'Invent the Future' campaigns. Information circulated; posters, emails, and to intranet 'Frontlines'
<b>1.5 Sustainability Actions (others)</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Improved recycling measures	In progress	Expanded recycling programs; amount and type of waste diverted,	Added recycling of Styrofoam, plastics (hard & soft), textbooks, to the existing recycling programs. Added 'recycling champions' within the institution; daycare, library, IT services, Bookstore
Supported composting	In progress	amount of waste diverted from landfill	Improved pre-consumer waste composting initiative in Food Services (contractor/provider). Preparation of implementation plan for roll-out of post-consumer waste composting in Birch Food Court for 2009.
Used re-usable dishes	In progress	none defined	Green catering' available for internal catering orders. 'Take a Plate' campaign organized by Capilano Students Union to encourage Food Services customers to take their meal on a reusable plate rather than disposable ones
Supported sustainable procurement practices	In progress		Added environmental sustainability and waste reduction criteria to RFQs and RFOs.
Local Food Choices - Regional Diet	In progress		Work with local supplier and Food Services contractor ARAMARK to identify local food sources for inclusion in menu items at the North Vancouver Campus. Currently this includes; seasonal produce, and some seafood
Fair Trade Coffee	completed		All coffee offered for sale in Food Services, including catering services, except 'flavoured' are fair trade certified and/or organic

**Part 2: Plans to Continue Reducing Greenhouse Gas Emissions 2009 -- 2011**

**2.1 Mobile Fuel Combustion**

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In Progress	metric: # of vehicles; metric: % of fleet	Currently test-driving electric vehicles for use in landscaping, grounds maintenance	3-6 months - 2009
Provide driver training to reduce fuel use	Planned	# of employees using the fleet trained, # employees in general trained	Determine who will be trained, the supplier to provide training, training location (on-site or off), training timelines and cost benefit analysis needs to be prepared.	2010
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Planned	frequency of maintenance	Determine what the current maintenance program is, bench-mark and do gap analysis. Cost benefit analysis (to include potential GHG reduction) for implementation of new program prior to making any changes.	2010
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	Planned	none defined	There is limited anti-idling signage on campus. Planning and implementation of an anti-idling campaign is planned	2009 to 2011
Encourage alternatives to travel in fleet vehicles – bicycles, scooters, electric carts	In Progress	metric: # of alternatives,	Currently test-driving electric vehicles for use in landscaping, grounds maintenance	3-6 months - 2009
Change from gas to electric lawn maintenance equipment	Planned	metric: # of alternatives,	Needs identification and analysis, market scan for alternative equipment, development of budget and timeline for replacement of existing equipment.	2010 to 2011
Change to manual lawn and yard maintenance equipment	Planned	metric: # of alternative	Needs identification and analysis, market scan for alternative equipment, development of budget and timeline for replacement of existing equipment.	2010 to 2011

**2.2 Stationary Fuel Combustion (including electricity)**

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Undertake workstation tune-ups to help staff understand what they can do to reduce personal energy use	Planned	# workstations tuned-up; % of employees participating,	Annual Awareness Campaign to be implemented	Spring/Fall 2009, annual & ongoing
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress	# workstations tuned-up; % of employees participating,	1st annual Awareness Campaign to be implemented; subject to funding availability	Spring/Fall 2009, annual & ongoing
Undertaken Monitor turn-off challenge	In Progress	none	Currently posted as a 'tip of the week' on Frontlines as part of the energy conservation awareness Power Save software will automate this.	Spring/Fall 2009
Replace # computers with Energy Star models	In Progress	# CPUs, # monitors replaced, % workstations	Part of Green purchasing practices; computers are energy star rated, laptops EPEAT rated, monitors energy star rated.	ongoing
Ask staff to close blinds daily	In Progress	none	Posted as an energy conversation tip to Frontlines	ongoing
Encourage staff to use stairs	In Progress	# of employees,	Health & Wellness have ongoing programs to encourage and engage employees to participate in walking activities on campus. This includes monthly wellness brochures with fitness tips, awareness campaign and contests.	ongoing
Turn off lights in unused rooms	In Progress	metrics: visual audits	Included as part of 'From Energy Use to Energy Management' PowerPoint presentation to Executive, Administration, Faculty, Staff and Students. Posted to Frontlines as an energy conservation tip of the week.	ongoing
Replace Refrigerators (Energy Star rated appliance)	In Progress	metrics: # purchased, % in use	Standard Purchasing Practice - all new appliances must be energy star rated.	ongoing
Replace other appliances (with Energy Star rated appliance)	In Progress	metrics: # purchased, % in use	Standard Purchasing Practice - all new appliances must be energy star rated.	ongoing
Install multi-function devices (and remove stand-alone printers/faxes)	In Progress	metrics: upgrade training for 200 users, metrics: kWh savings	goal: removal of 45 stand-a-lone printers, increase use of existing MFD	by end of 2009

Replace standard bulbs with CFLs	In Progress	metrics: # of bulbs removed, estimated kWh savings	have identified all standard bulbs on North Vancouver campus, need to confirm switch	within 12 months of funding approval
Install motion activated lights	Planned	metrics: estimated kWh savings at each campus	Contingent on PSECA funding for Sunshine Coast and Squamish campuses.	within 12 months of funding approval
Undertake lighting retrofit	Planned	metrics: estimated kWh savings	Contingent on PSECA funding for Sunshine Coast and Squamish campuses.	within 12 months of funding approval
Implement server virtualization	In Progress	metrics: estimated kWh savings	Capilano IT services is slowly moved servers over to our Blade Server / SAN / VMware environment; basically following our typical server replacement schedule. A detailed evaluation for the benefits being realized (kWh savings) needs to be developed.	2009
Utilize desk-top power management settings on computer			Included as part of 'From Energy Use to Energy Management' PowerPoint presentation to Executive, Administration, Faculty, Staff and Students. Posted to Frontlines as an energy conservation tip of the week.	by Dec 2009
Initiate corporate computer shut-down/wake-up for maintenance			See Power Save Software installation noted below	
Unplug unused equipment			Will be incorporated as part of the workstation tune-ups	Spring/Fall 2009, annual & ongoing
Power Save Software installation	In Progress	metrics: # workstations, estimated kWh savings, \$\$ savings (5 year analysis)	Have pilot tested software, and are finalizing full roll-out details for 1150 workstations	by Dec 2009
Lighting upgrade - existing T12s replaced by T5s & T8s	In Progress	metrics: # tubes replaced, estimated kWh savings, \$\$ savings (5 year analysis)	Have identified all T-12's on campus, need to prioritize and install new T8's/T5's depending on location	within 12 months of funding approval
Power Meters installation	In Progress	ability to see energy (gas, electricity and water) at a building level rather than at a campus level.	Prism Engineering has been contracted to identify and recommend the optimum power meter to meet the requirement of the BC Hydro Building optimization program and the overall needs of the institution. Power meters will assist in the identification of potential energy conservation measures.	by end of 2009
DDC system - new software	In Progress	ability to control the buildings HVAC and lighting	Prism Engineering has been contracted to identify and recommend the optimum DDC system for the North Vancouver campus. The current system is out of date, and needs replacement. Once identified a long-term strategy for the replacement can be planned	Installation is contingent on funding. Expectation installation could be completed within 1 year of funding approval.

## 2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Commit to use 30% recycled paper	Completed	Qty of paper purchased; 100% 8.5x11 and 8.5x14 to be 30% pcw	Paper is centrally purchased; switch to 30% recycled content	completed February 2009
Initiate automatic double sided printing	In progress	# MFDs defaulted to duplex printing,	'Print Smarter' campaign: internal awareness campaign to increase users commitment to duplex printing and maximizing use of MFDs. MFDs will be fully defaulted to duplex	Jun-09
Develop document library (online and one printed copy) for large documents	Planned		Document Management has been identified as a technology project	Contingent on resources, including HR and funding
Use collaborative software to edit on-line	In progress	metrics: none defined at this time	Software for on-line, shared course outline editing currently being evaluated	within 12 months of funding approval
Restructure a process to use less paper	Planned	Reduction of 75% in printed phone books.	Phone books to be printed 'on-demand', rather than printed and distributed to all employees. Phone book available on-line	Fall 2009
<b>Actions on non-paper related supplies:</b>				
Encourage re-use of furniture and equipment	In progress	Diversion of waste	Re-allocate within institution, repair where feasible	ongoing

## 2.5 Employee Engagement

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide conservation education	In Progress	# Power Point presentations, # tips of the week posted, # training session, # people trained	Presentation: "From Energy Use to Energy Management" to Executive, Administration, Faculty, Staff and Students. conservation tips posted to intranet 'Frontlines', 'Print Smarter' Awareness campaign training on use of Canon Multifunctional Devices (MFDs) Presentation focuses on who we are as stewards of our campus; energy consumption, cost (financial and green house gas), and what we can do together to lessen the impact on natural resources by changing our current behaviours and business practices.	January 2009 and ongoing. 3 major awareness campaigns planned for each of 2009, 2010 and 2011
Hold contests to change behaviour/make pledge	In Progress	# employees committed to duplex printing	'Print Smarter' Campaign: enter to win \$100 gift certificate by committing to duplex printing	ends May 2009
Hold contests/support to generate ideas	Planned	# participants	Campus wide (employees, students) scavenger hunt focused on sustainability on campus, health and wellness and linked to 2010 Olympic sustainability goals.	Oct-09
Develop Green Teams	In Progress	# participants	Planning: Currently developing an action plan for student and employee 'go green' teams. Includes roles & responsibilities, reporting structure, goals and targets.	2009 & ongoing
Support Green Teams (resources)	In Progress		As part of the develop green teams action item, determining the funding requirements for the volunteer initiative, and for individual awareness events	2009 & ongoing
Provide green tips	In Progress	# tips posted	Weekly energy saving tips posted to Frontlines (internal website). The focus of the tips is in alignment with the Awareness campaign.	2009 to 2010
Support professional development	In Progress	# attendees,	Professional Development Seminar for Faculty - topic to be selected based on the awareness campaign initiative	Spring 2009, 2010, & 2011
Composting (Waste Management) Awareness Campaign	Planned	Amount of compost diverted from landfill	Current compost program (pre-consumer waste) to be expanded to post-consumer waste in the main Food Court.	June - Dec 2009
Energy Manager	In Progress	Meet quarterly expectation and year-end Sustainable Energy Management Plan (SEMP) for BC Hydro	Have successfully completed Q1, and Q2 deliverables.	Q4 - Sept 2009

## 2.6 Sustainability Actions (others)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Take water conservation measures – low flow showers or toilets, fix leaks	Planned	# CUFT reduction in water consumption, # taps converted to low flow, # toilets converted to low flow	Baseline analysis done of current level of water consumption. Need to identify all existing fixtures; taps & toilets, and identify alternative products, costs, resources and timeline for implementation.	2010
Improve recycling measures	In Progress	amount of waste diverted	Expanding the number of recycling collection containers on campus (N.Van campus), 2009 - improve signage and increased communication within institution, establish additional department recycling centers customized to the needs of the department	2009 & ongoing
Support composting	In Progress	amount of waste diverted	Implementing post-consumer waste (from pre-consumer waste only) program	by Dec 2009
Use re-usable dishes	In Progress	# caterings requesting 'green' catering option, % of overall caterings	Plan promotional event to increase awareness of green catering option, 2009 - add in composting container for catering food scraps.	2009
Purchase green cleaning products	Planned		Baseline analysis done of current janitorial supplies. Identify alternative products, costs, resources, including training and timeline for implementation.	2010
Use green (low-e paints)	Planned		Baseline analysis done of current paint supplies. Identify alternative products, costs, suppliers, resources and timeline for implementation.	2010
Support sustainable procurement practices	Planned		formalize 'green purchasing policy'	by Dec 2009
Local Food Choices - Regional Diet	In progress	Reporting metrics: under development	Work with local supplier and Food Services contractor ARAMARK to identify local food sources for inclusion in menu items at the North Vancouver Campus. 2009 - Reporting metrics for evaluation of the impact of the local food choices is being developed by our provider for use by Contractor operator at North Vancouver campus 2009, to 2011 Expanding the current options of seasonal produce, and some seafood to be more broad based. 2009 - Currently analyzing the cost of implementation of 'Cage Free' Eggs for all non liquid egg purchases and menu items.	2009 to 2011
BC Farm to Campus Network	In Progress	Metrics: none developed as yet	Participation in network to assist in implementation of a regional diet in food services, and to identify other opportunities for Capilano University to participate in awareness of sustainable food in BC	Spring 2009 & ongoing