

## Carbon Neutral Action Report Vancouver Island University

### Executive Summary

Vancouver Island University recognized the importance of conserving energy as a first step to reducing its carbon emissions, and has retained an Energy Manager to focus on that task, in partnership with the BC Hydro Power Smart Program. In addition, the VIU Board of Governors recently approved the Campus Master Plan, in which "Sustainability" is the foundation; the Plan includes a Sustainability Policy. This policy has five key, inter-related components including Institutional, Social, Fiscal, Operational and Environmental Sustainability. Through both conservation and sustainable development, VIU strives to achieve the maximum possible reduction of emissions produced by the development and operation of all campuses. All future developments will be constructed to a LEED Gold standard, and will make use of alternative energy sources wherever feasible, in order to mitigate future carbon emissions.

### Objectives

Energy conservation and carbon emission reduction not only serves to meet the obligations of VIU to senior government, but also serves as a tool to attract and retain students, faculty, and staff.

People wish to study and work at institutions with strong environmental commitments, thus even with projected population growth on our campuses, consumption will decrease, and carbon emissions will be reduced.

VIU's sustainable practices not only include environmental stewardship, but also social & financial sustainability, or "Triple Bottom Line."

## Part 1: Actions Taken to Reduce Greenhouse Gas Emissions in 2008

### Overview

VIU signed the University Leaders for a Sustainable Future (ULSF) Talloires Declaration.

VIU signed the University & College Presidents' Climate Change Statement of Action for Canada.

VIU is a member of the Association for the Advancement of Sustainability in Higher Education (AASHE).

VIU pledged to become a Power Smart Partner with BC Hydro in 2008.

VIU has established an Energy Management Program, including the implementation of 3 tactical components:

1. energy saving projects;
2. a Communications Plan designed to encourage an energy conservation culture;
3. a Monitoring, Targeting, and Reporting system that will provide the necessary data to observe, improve, and demonstrate the effectiveness of the Program.

VIU signed the Public Sector Energy Conservation Agreement in 2008.

VIU hired an Energy Manager in November of 2008.

VIU carried out a Transportation Demand Management Report in 2008.

VIU established a "Campus Sustainability Committee."

VIU's sustainable practices not only include environmental stewardship, but also social & financial sustainability; or "Triple Bottom Line".

### 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	Fuel consumption will be reduced in a measurable manner, vehicle fleet will be reduced in size to meet operational needs.	Considering the use of a Gator/electric vehicle for trades vehicle, to replace existing van.
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In Progress	Fuel economy, safe vehicle for driving.	Regular preventative maintenance program based on kilometres of usage, for routine maintenance activities. Facilities requires Trades vehicles to be checked on a weekly basis. Facilities requires that commercial vehicles under its care be checked by the driver prior to each trip. All checks are documented.
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	Complete	Visual observations of trades vehicles.	Policy established to reduce idling periods of operational vehicles. Reviewed with Trades staff at Operational Meetings.

Encouraged car pooling in fleet vehicles	In Progress	Required by policy when possible for all business travel.	Sustainability Committee recommendations on avoidance of excessive emissions.
Encouraged use of public transit/active transportation	Complete	Measured use of: (1) "Carpool parking permits"; (2) "RideShare" program; (3) "Pro-pass" program; (4) Parking meter revenue.	(1) Carpool parking permits for 2 or more persons are eligible for a 50% fee reduction & designated stalls. (2) RideShare is a program used to connect commuters for carpooling. (3) Pro-pass uses automatic payroll deduction for transit passes, and includes reduced rider-rates & tax incentives. (4) Parking rates were increased by 100% in 2008.
Encouraged alternatives to travel in fleet vehicles – bicycles, scooters, electric carts	In Progress	Reduced or rationalized fleet.	Investigating alternatives to current fleet vehicles: Electric vehicles / smaller vehicles where possible.
Established travel reduction goals	In Progress	Measure employee travel and compare to previous year's data.	Sustainability Committee recommendations on avoidance of excessive emissions.
Adopted a travel policy	In Progress	Measure employee travel and compare to previous year's data.	Sustainability Committee recommendations on avoidance of excessive emissions.
Users encouraged to drive the vehicle best suited to their purposes.	In Progress	Visual observations.	Routine activity of the vehicle reserve process.

## 1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Supplied power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress		Tested a model of a smart power bar, for future use as a standard within workstations.
Undertaken Monitor turn-off challenge	In Progress	Visual observations.	Reminders to faculty and staff to turn off monitors when not in use.
Replaced # computers with EnergyStar models	In Progress	Visual observations.	New computers purchased based on IT recommendations have "80-plus" certified power supplies.
Asked staff to close blinds daily	In Progress	Visual observations.	Reminders on a case-by-case / building-by-building basis.
Used air dry setting on dishwashers	Complete	Visual observations.	Air-dry is standard protocol
Turned off lights in unused rooms	In Progress	Visual observations.	Reminders to faculty, staff, and students to turn off lights when not needed - BC Hydro sticker used in some rooms. "Lights-out awareness" being continuously raised.
Replaced Refrigerators (EnergyStar rated appliance)	In Progress		Purchasing standard requires EnergyStar rating for all new appliances

Replaced other appliances (with EnergyStar rated appliance)	In Progress		Purchasing standard requires EnergyStar rating for all new appliances
Installed multi-function devices (and removed stand-alone printers/faxes)	Complete	Visual observations.	Multi-function "terminals" continuously replacing smaller scanners / printers. Duplex-capable printers replacing existing non-duplex, over time.
Replaced standard bulbs with CFLs	In Progress	Visual observations.	Standard maintenance practice to replace incandescent with CFL's.
Installed motion activated lights	In Progress	Visual observations.	Standard maintenance practice has been to install motion sensing switching devices where warranted to control room lighting.
Undertaken lighting retrofit	In Progress	Visual observations.	Standard maintenance practice to replace T12 lamps with modern T8 lamps and electronic ballasts whenever the T12's burn out.
Implemented server virtualization	In Progress	Reduced energy consumption; improved server room cooling.	Conducted investigation of the potential for energy conservation, but not yet thoroughly studied.
Initiated corporate computer shut-down/wake-up for maintenance	In Progress	Visual observations.	Standard IT practice of calling for computers to be restarted and left in standby mode overnight, with monitors off, so that updates can be automatically initiated.
Undertaken building energy audit at LOCATION(s)	Complete	Audit performed / PSECA funding granted.	Thorough audit of the Nanaimo Campus was done in the 2006/07 fiscal year, and PSECA funding sought for implementation.

### 1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Initiated automatic double sided printing	In Progress	Reduced paper consumption.	Some printers on Campus have duplex printing capability, and are set for that option.
Committed to hold paperless meetings	In Progress	Reduced paper consumption.	Computers and projectors set up in meeting rooms to encourage "on the board" presentations. "SmartBoards" have been installed.
Developed document library (online and one printed copy) for large documents	In Progress	Reduced paper consumption.	Network file systems set up for document retention and retrieval, that also work for collaborative purposes.
Used collaborative software to edit on-line	In Progress	Reduced paper consumption.	Some departments / project teams use this. Currently investigating ways to make this process more user-friendly.

Re-used non-confidential scrap paper	Complete.	Reduced paper consumption.	Note pads from used, non-sensitive documents.
Used laptops/tablets	In Progress	Reduced paper consumption.	Laptop computers are available on a loan-out basis from the Library to VIU employees.
Restructured a process to use less paper	In Progress	Reduced paper consumption.	Notes provided on line / power point files.
Chose "Green" items from Distribution Centre	In Progress	Reduced effluent toxicity.	Cleaning chemicals are environmentally sensitive, "green" products wherever possible
Encouraged re-use of furniture and equipment	In Progress	Reduced new furniture requirements.	Active program to re-use old furniture.

#### 1.4 Travel

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Installed Video Conferencing facilities	In Progress	Reduced travel through increased "virtual meetings."	Installed "Smart Boards" and computers in meeting rooms, to encourage "virtual meetings."
Mandated car pooling to government meetings	In Progress	Reduced demand for VIU vehicles.	If multiple persons are travelling to the same destination, users should car-pool. Only one person may claim mileage for the trip.

<b>1.5 Employee Engagement</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Provided climate change education	In progress	Increased awareness of the issues.	Education sessions such as these are a regular benefit of employment on Campus.
Provided conservation education	In progress	Increased awareness of the issues.	Education sessions such as these are a regular benefit of employment on Campus.
Held contests to change behaviour/make pledges	In progress	Increased awareness of the issues.	Bike to Work Week.
Developed Green Teams	In progress	Increased awareness of the issues.	Initiated work to develop Campus teams volunteering to work toward energy conservation.
Provided green tips	In progress	Increased awareness of the issues.	Reminders sent to Campus on reducing consumption through simple personal steps.
Supported professional development	In progress	Increased awareness of the issues.	Training for staff on environmental and energy conservation topics.
<b>1.6 Sustainability Actions (others)</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Took water conservation measures – low flow showers or toilets, fix leaks	In Progress	Reduced water consumption.	Low Flow toilets and showers are a standard requirement for new building construction. When replacement is necessary, low flow devices are used.
Ran dishwasher only when full	Complete	Standard Protocol	Food services / Culinary Arts only run dishwashers with full loads
Reduced/replaced bottled water with filtered or refrigerated water	In Progress	Reduced bottled water consumption.	Available tap water meets Canadian Drinking Water standards; looking into options for using tap water (possibly filtered) to eliminate bottled water.
Improved recycling measures	In Progress	Reduced solid waste disposal. Increased waste products diverted from landfill.	Full recycling programs are in operation at the larger buildings, with lesser programs at smaller and more remote buildings.
Supported composting	In Progress	Reduced solid waste disposal. Increased waste products diverted from landfill.	Composting is carried out at the two cafeterias and in several other buildings.
Used re-usable dishes	In Progress	Reduced solid waste disposal. Increased waste products diverted from landfill.	Dishes used within the two cafeterias are re-usable; unless food is ordered "to-go".

Purchased green cleaning products	In Progress	Reduced toxicity of the effluent system.	Standard practice.
Used green (low-e paints)	In Progress	Reduced complaints of odours during retrofit projects.	Low VOC paints in use as a standard practice.
Supported sustainable procurement practices	In Progress		Continuously updating to more sustainable products.
Adopted low-carbon contracting practices	In Progress	Reduced indirect emissions to report.	Harbour Air sea-plane service to Vancouver is carbon neutral.

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

<b>Overview</b>	Subject to funding, VIU plans to establish a "Sustainability Office". VIU is currently undergoing a "Geo-Exchange Feasibility Study" to determine whether flooded coal mine shafts beneath the Campus are a viable source of Geothermal energy. VIU is planning a new Campus Transit Exchange with the Nanaimo Regional Transit System including increased service.		
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### 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	Reduced vehicle fuel consumption, over time.	Numbers and types of vehicles for use on Campus are being considered in accordance with the Campus Master Plan, seeking higher efficiency types / electric vehicles.	2009 through 2011
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In Progress		A rigorous fleet maintenance program exists, and will continue.	2009 through 2011
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	In Progress		Reminders to Facilities staff from time to time.	2009 through 2011
Encourage car pooling in fleet vehicles	In Progress		This is a standard recommendation from the Sustainability Committee.	2009 through 2011
Encourage use of public transit/active transportation	In Progress	Reduced parking meter revenue. Increased demand for student bus passes.	(1) Transit exchange will be developed at "the heart of the campus". (2) Bus frequency will increase; double-deckers / express routes proposed for future. (4) Parking rates will increase another 25% and 20% in 2009 and 2010 respectively.	Proposed 2010/11
Encourage alternatives to travel in fleet vehicles – bicycles, scooters, electric carts	In Progress	Reduced vehicle fuel consumption, over time.	Changing Grounds vehicles to electric type, over time.	2009 through 2011

## 2.2 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress	Fewer desktop loads on overnight (by visual observation).	Purchased sample power bars for test purposes. Considering work station standards to include the power bars.	Proposed 2010/11
Undertaken Monitor turn-off challenge	In Progress	Visual observations.	Announcements / reminders	2009 through 2011
Replace # computers with EnergyStar models	In Progress	Visual observations.	The University's PC standard has included an "80 Plus" power supply since 2007. Current standard is the Dell Optiplex, which meets EPEAT standard.	2009 through 2011
Ask staff to close blinds daily	In Progress	Visual observations.	Reminders to faculty and staff to close blinds, preventing solar gain in summer & heat-loss in winter.	2009 through 2011
Use air dry setting on dishwashers	In Progress	Visual observations.	Standard practice	2009 through 2011
Turn off lights in unused rooms	In Progress	LEED points.	Reminders to faculty and staff to switch off lights when finished with the room. In addition, planning on replacement of light switches in some rooms with occupancy sensors. New building design guidelines has occupancy sensors in all instructional rooms that will turn off lights after a set time frame. This has been implemented in our newest building (Bldg 250) as a result of the guidelines.	2009 through 2011
Replace Refrigerators (EnergyStar rated appliance)	In Progress	Visual observations.	Standard practice	2009 through 2011
Replace other appliances (with EnergyStar rated appliance)	In Progress	Visual observations.	Standard practice	2009 through 2011
Install multi-function devices (and remove stand-alone printers/faxes)	In Progress	Visual observations.	Multi-function terminals are replacing smaller scanners / printers on an as-needed basis. Duplex-capable printers replacing existing one sided printing machines.	2009 through 2011
Replace standard bulbs with CFLs	In Progress	Specified in Lighting Improvements spec.	Standard practice	2009/10



Install motion activated lights	In Progress	Specified in Lighting Improvements spec.	Occupancy sensors to be installed in key buildings within the PSECA funded projects implementation.	2009/10
Undertake lighting retrofit	In Progress	Specified in Lighting Improvements spec.	PSECA funded Lighting Improvements to be implemented starting May of 2009.	2009/10
Implement server virtualization	In Progress	Reduced energy consumption and improved cooling of the server room.	Seeking funding for engineering study and implementation.	2010/11
Utilize desk-top power management settings on computer	In Progress	Visual observations.	VIU IT Department considering implementation within the 2009/10 fiscal year.	2009/10
Initiate corporate computer shut-down/wake-up for maintenance	In Progress		Standard practice	2009 through 2011
Unplug unused equipment	In Progress	Visual observations.	Reminders to faculty and staff to practice the SOP. Use the desk top power in conjunction with the "smart strip" to turn off other peripherals.	2009 through 2011
Undertake building energy audit at LOCATION(s)	In Progress	Looking forward to BC Hydro funded energy studies, as a result.	BC Hydro Opportunity Assessments to be completed on GR Paine Horticultural Centre, Milner Gardens, and Powell River Campus, summer of 2009.	2009/10
Initiate or complete a building energy retrofit	In Progress	Looking forward to additional PSECA-funded projects in the future.	Implementation of PSECA funded projects in 2009/10 will result in significant energy conservation measures. Identifying Total Energy Retrofit opportunities within targeted buildings, to consider for future PSECA funding.	2009/10
Telephone / communication devices rationalization.	In Progress	Potentially fewer fax machines as an additional result.	New VOIP system to be implemented in 2009, has the ability to displace fax machines, using Microsoft Fax or other faxing software.	2009/10
Work toward duplex printing as a standard	In Progress	All printers used on Campus will eventually be capable of printing in duplex mode, and settings will be selected to automatically default to duplex printing mode.	As of February 2009, all printers recommended for use on Campus by the IT Department are duplex capable. IT currently has a policy to adjust the settings of duplex-capable printers already on inventory to default to duplex setting automatically, as each new machine is installed.	2009 through 2011
On-line document collaboration	In Progress	Reduced paper consumption, during review and collaboration activities.	VIU has created a Digital Archive Management System.	2009 through 2011

## 2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Initiate automatic double sided printing	In Progress	Reduced paper consumption	As described earlier in the Report.	2009 through 2011
Commit to hold paperless meetings	In Progress	Reduced paper consumption	Facilities is leading on this initiative, by experimenting with video conferencing - to use as model for other Campus departments.	Proposed 2009/10
Develop document library (online and one printed copy) for large documents	In Progress	Reduced paper consumption	Facilities Services and Campus Development stores and shares major documents, such as guidelines, etc.. FSCD working with others on Campus to develop a means of on-line document review, collaboration, sharing.	Proposed 2009/10
Use collaborative software to edit on-line	In Progress	Reduced paper consumption	Facilities Services and Campus Development is considering on-line tools that will encourage collaboration on large documents. FSCD established a server location & is leading with pilot document review program for its projects.	Proposed 2009/10
Re-use non-confidential scrap paper	In Progress		Standard practice	2009 through 2011
Use laptops/tablets	In Progress		Encouraged	2009 through 2011
<b>Actions on non-paper related supplies:</b>				
Purchase cradle to cradle goods	In Progress	Seek opportunities for further cradle to cradle procurement.	The meeting chairs purchased from Steelcase used in Building 250 are certified "cradle to cradle." The product is called the "move" chair.	2009 through 2011
Choose "Green" items from Distribution Centre	In Progress		Standard practice	2009 through 2011
Encourage re-use of furniture and equipment	In Progress		Standard practice	2009 through 2011

<b>2.4 Travel</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Train staff in the use of Live Meeting (or other desktop collaborative software)	In Progress	Reduced travel.	Pilot - Facilities & Campus Development - SmartBoard + Skype for videoconferencing. Staff training will follow after trials.	Proposed 2009/10
Install Video Conferencing facilities	In Progress	Reduced travel.	FSCD has had Skype installed on the Meeting Room computer to permit virtual attendance at meetings in other communities.	Proposed 2009/10
Initiate Travel Policy	In Progress	Reduced travel.	Standard recommendation of the Sustainability Committee, with potential revisions in the future.	2009 through 2011
Mandate car pooling to government meetings	In Progress	Reduced demand for VIU vehicles.	Standard recommendation of the Sustainability Committee.	2009 through 2011
Sea Plane Service to and from Vancouver is available from a carbon neutral carrier	In Progress	Optional carbon-neutral travel	Faculty and staff have the option is using the services of Harbour Air, a carbon neutral carrier, for transportation to and from Vancouver meetings.	2009 through 2011
<b>2.5 Employee Engagement</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Provide climate change education	In Progress	Increased awareness and increased conservation culture.	Energy Manager is required to make presentations to faculty and staff groups, on energy conservation.	2009/10
Provide conservation education	In Progress	Increased awareness and increased conservation culture.	Energy Manager is required to make presentations to faculty and staff groups, on energy conservation.	2009/10
Hold contests to change behaviour/make pledge	In Progress	Increased awareness and increased conservation culture.	Planning for presentations and contests aimed at Faculty, staff, and students is underway now, for presentation in the Fall of 2009.	2009
Hold contests/support to generate ideas	In Progress	Increased awareness and increased conservation culture.	Planning for presentations and contests aimed at Faculty, staff, and students is underway now, for presentation in the Fall of 2009.	2009

Develop Green Teams	In Progress	Increased awareness and increased conservation culture.	The Energy Manager is working with "SOLUTIONS: a sustainability network" to develop the teams and their roles in conserving energy.	2009
Support Green Teams (resources)	In Progress	Increased awareness and increased conservation culture.	The Energy Manager is working with "SOLUTIONS: a sustainability network" to develop the teams and their roles in conserving energy.	2009
Provide green tips	In Progress	Increased awareness and increased conservation culture.	The Energy Manager is working with "SOLUTIONS: a sustainability network" to develop the teams and their roles in conserving energy.	2009
Support professional development	In Progress	Increased awareness and increased conservation culture.	VIU continues to support the Energy Manager and others in FSCD, through seminars and workshops.	2009/10

## 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	In Progress	Monitoring, Targeting, and Reporting system.	VIU has established a Monitoring, Targeting, and Reporting system, that monitors consumption of energy and of water. A portion of the PSECA funding allocated in 2009 is for water conservation, as well as for energy conservation.	2009/10
Run dishwasher only when full	In Progress		Standard practice	2009/10
Reduce/replace bottled water with filtered or refrigerated water	In Progress	Under review	Most departments do not provide bottled water; options are being investigated to remove entirely.	2009-2011
Improve recycling measures	In Progress	Recycling program enhancement	FSCD is considering new options to enhance the recycling and composting programs on Campus in Nanaimo.	2009/10
Support composting	In Progress	Standard practice	FSCD is considering new options to enhance the recycling and composting programs on Campus in Nanaimo.	2009/10
Use re-usable dishes	In Progress	Standard practice	The two cafeterias on Campus in Nanaimo make use of re-usable dishes.	2009
Purchase green cleaning products	In Progress	Standard practice	The cleaning contract at each Campus of VIU includes requirements for the use of green products.	2009

Use green (low-e paints)	In Progress	Standard practice	FSCD specifies the use of low VOC paints where considered appropriate for the application. 2009
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