

Executive Summary

The University of the Fraser Valley has assumed a position of environmental leadership, not just in meeting the legislative requirements of the Greenhouse Gas Reduction Targets Act, but to inspire environmental awareness and change within our university and the greater community. In 2010, our Board established the forward vision for the University with a set of *Strategic Directions*. Among other goals, the University has committed, “to be a leader of social, cultural economic and environmentally responsible development in the Fraser Valley”.

In both our University operations and our capital projects, we are constantly seeking new ways to reduce our environmental footprint. We strive for continuous improvement in energy conservation and saving in our operations, and our capital projects are now designed to achieve a sustainability metric of LEED gold (or equivalent).



UFV entered into an energy management agreement with BC Hydro in 2010 and contracted an Energy Manager to identify energy conservation opportunities in all aspects of our operations. This work will inform a strategic energy management plan to be developed, linking our commitment to energy conservation with measureable energy saving outcomes.

Overview

Our leadership in environmentally responsible development is multifaceted, including campus and facility operations, campus planning and capital projects, curriculum development, and community outreach. In all aspects, our most notable achievements have been with the support of our students. UFV recognizes our students as our community’s ultimate sustainability investment, and actively supports student engagement and leadership in its sustainability initiatives.



In 2010, the University continued with a number of sustainability innovation projects within our facilities operations. This work is now facilitated by two student internship positions in sustainability, one focussed on facilities operations, the other on campus planning for social sustainability. These positions are held from year to year by senior students with an active record of university engagement in sustainability issues and initiatives. The thematic projects of this year’s sustainability coordinators are composting and social sustainability in campus design.

2010 Greenhouse Gas Emissions

The carbon footprint for the University (Scope 1&2) for 2010, registered at 3061 tonnes in accordance with the SmartTool, recording and reporting protocols. That value was slightly lower than the 2009 recorded baseline. The 2010 University carbon footprint, expressed on a (full time equivalent, "FTE") per capita student basis, was .378 tCO₂e per FTE, a reduction of 8% over the previous year. High classroom occupancy rates coupled with strong enrolment growth are contributing factors.

Offsets Applied to become Carbon Neutral in 2010

In 2010, the University purchased offsets from the Pacific Carbon Trust valued at \$76,517 dollars. Offset cost savings are now sought in all our energy conservation feasibility analyses, particularly as they reduce Scope 1 emissions.

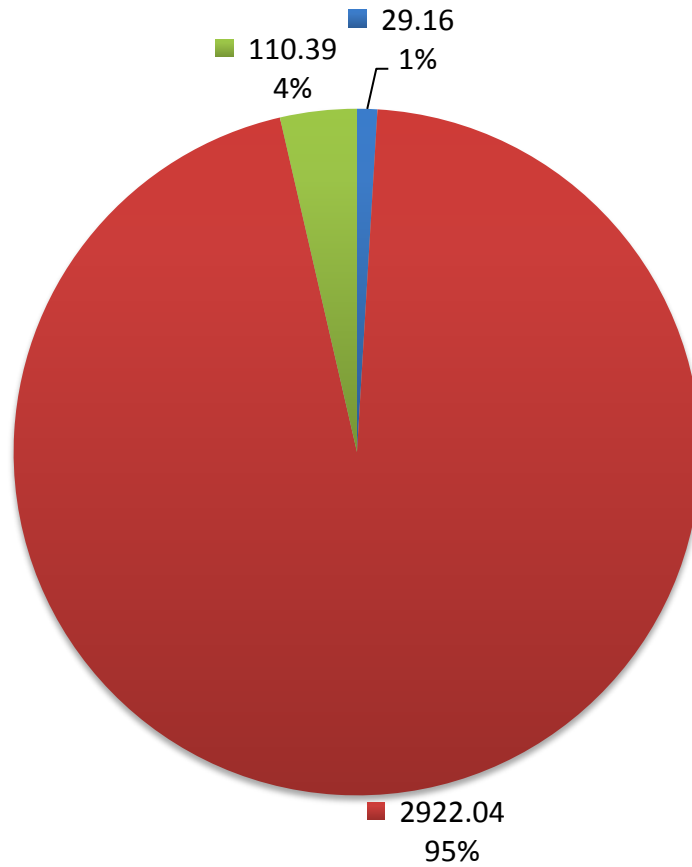
Emissions Reduction Activities

UFV continues to benefit from a growing student culture of sustainability, a culture actively promoted by the sustainability coordinators. There is a growing acceptance of public transit with increased ridership, and the use of water fill stations continues to grow in popularity, both initiatives of previous years. Many initiatives, in community engagement, partnership and outreach are underway. One example is the University partnership with a local social service community group to enable the recycling of on campus returnable beverage containers. This conveys the added benefit, supporting an element of social sustainability, integrally important to most environmental advocates.

A handwritten signature in black ink, appearing to read "J. Hogan", written over a horizontal line.

Jackie Hogan
Chief Financial Officer
University of the Fraser Valley

University of the Fraser Valley Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO₂e*)



Total Emissions: 3061.59

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion and Electricity (Buildings)
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2010

Total offsets purchased: **3060.66**. Total offset investment: **\$76,516.50**. Emissions which do not require offsets: **0.93** **

*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.

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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 (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)						
Vehicle fuel efficiency						
Replace vehicles with more fuel-efficient models	In Development	100 % of vehicles are fuel- efficient models		Purchase of some Hybrids as part of our Fleet management program.	2012	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100 % of vehicles are subject to regular maintenance for fuel efficiency	Vehicles are scheduled for regular 5,000 km interval maintenance services through applicable automotive dealership.	Fleet vehicle maintenance will be addressed by the institution with the departments having access to fleet vehicles. Preventive Maintenance schedules will be created to ensure vehicles receive the regular servicing as per the manufacturer's suggested guidelines.	2011	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	In Development	100 % of small maintenance vehicles are fuel-efficient		Purchase of some Hybrids as part of our Fleet management program.	2012	No End Date (Continuous)
Behaviour change program						
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	100 % of current drivers are trained	All new drivers received training	All new drivers will receive training	2005	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		It is standard practice that vehicles are not left idling or unattended with keys in the ignition.	Fleet operations will be addressed by the institution with the departments having access to fleet vehicles. An awareness program will be developed to deter idling practices.	2011	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)						
Planning/management						
Enrol in a building energy benchmarking program (e.g., GREEN UP)	In Development	322 ekWh/m2/yr (Elec + Gas performance - Abbotsford Campus) for 09/10 fiscal	As part of our Energy Manager program, we are now internally benchmarking our buildings using PUMA online software.	Continue to monitor internal benchmarking values. Investigate public benchmarking programs such as GreenUp.	2010	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	5 % of buildings have a real time metering system installed	BC Hydro Continuous Optimization program commenced in 2010 for Trades & Technology building - includes Northwrite real-time metering.	Work towards approval of additional Continuous Optimization projects at UFV (and subsequent real-time metering)	2010	No End Date (Continuous)
Owned buildings						
Establish energy performance baseline for owned buildings	Ongoing/In Progress	80 % of owned buildings have an established energy performance baseline	As part of our Energy Manager program, we have established a performance baseline for all Abbotsford campus buildings and Hangar-4.	Continue to use this baseline to track energy performance against. Consider extending this to the remainder of UFV owned buildings.	2010	2012
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	6 % of owned buildings are certified LEED NC Gold or LEED NC Platinum	Our current capital project in Chilliwack involves reusing 5,300 square metres of an existing facility to build a new 14,000 square metre academic building on the Canada Education Park campus and will achieve LEED Gold certification.	Construction, monitoring, LEED Certification	2009	2012

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	32	% of buildings built or renovated since start year indicated used the integrated design process	The Integrated Design Process challenges all disciplines to bring the latest in real-world technologies and best practices to our projects with a goal of leading our institution in continuous improvement. The integrated design process has been adopted for the last 4 capital projects, and is being implemented in the current campus development project in Chilliwack.	Monitor project, manage changes, commission building, campus relocation.	2009	2012
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	30	% of owned buildings have undergone energy retrofits since start year indicated	Lighting retrofit in Abbotsford B-building main lecture hall to LED. Insulation of hangar doors at Aerospace Centre. Energy efficient chiller replacement and cooling tower optimization in Abbotsford B-building.	Continue to retrofit buildings/equipment on a case-by-case basis. Planned upgrade of boiler plant in Abbotsford B & A-west building.	1998	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	25	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	No major retrofits at Abbotsford campus in 2010.	Consideration of energy upgrades as part of the planning process for any future building retrofits at UFV.	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	75	% of retrofits since start year indicated had lighting systems upgrades	Lighting retrofit in Abbotsford B-building main lecture hall to LED.	Consideration of energy upgrades as part of the planning process for any future building retrofits at UFV.	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	75	% of retrofits since start year indicated had control system upgrades or adjustments	No major controls upgrades as part of building retrofits at Abbotsford campus in 2010.	Include controls upgrades as necessary as part of future retrofit projects. As older HVAC equipment is replaced, pick this up on the newer ESC controls system.	2005	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	25	% of retrofits since start year indicated had insulation improvements	No major retrofits at Abbotsford campus in 2010.	Implement building envelope and window upgrades on a case-by-case basis during future retrofits	2008	No End Date (Continuous)
Install an on-site renewable energy demonstration project	In Development	0	% of retrofits since start year indicated had on-site renewable energy components	Planning of new Students Union Building at Abbotsford campus to include a geothermal exchange system.	Construction of new SUB building to include geothermal	2008	2012
IT power management							
Install power management software which shuts down computers outside of regular business hours	In Development			Evaluation	Not yet determined. Solution will not be implemented until Microsoft Active Directory is rolled out in 2012.	2012	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress			Updated hardware, increasing virtual hosting capacity by approximately 4x. Virtualization is now the first choice for new server deployments in Abbotsford Data Center, except where performance requirements call for a dedicated server. Some software vendors still do not support virtualization, therefore must have dedicated servers to qualify for support.	Migrate several file/print services to virtual machines. Expand virtualization to new data center at Chilliwack, Canada Education Park campus.	2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Completed in 2010	80	% reduction in printers, copiers, and/or fax machines since start year indicated	Stand alone printers still remain even though the MFD's were installed in 2010	Education and incentive programs to assist in removing old, local desktop printers.	2010	2011
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Completed in 2010	100	% of devices have auto-sleep settings applied	Clone settings implemented upon installation of new printers.		2000	2010
Appliances and electronic devices							

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	75	% of fridges are ENERGY STAR rated	Replacements are Energy Star rated wherever possible	Replacements will be made with Energy Star rated appliances	2009	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			Replacements are Energy Star rated wherever possible	Replacements will be made with Energy Star rated appliances	2009	No End Date (Continuous)
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress	15	As incandescent bulbs burn out they are replaced with compact fluorescent bulbs	Replacements are CFL where possible	Replacements are CFL	2009	No End Date (Continuous)
Behaviour change program							
Help staff reduce personal energy use through "workstation tune-ups"	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Encourage use of stairs instead of elevators	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Promote hot water conservation	In Development			UFV has hired an Energy Manager and Sustainability Coordinator to develop and deploy behavioural change programs. All items to the left have been considered under this program, and additional items have been implemented as shown in 'Other...' Education, Awareness, Engagement.	Further development of behavioural change programs to drive energy reduction, including the items listed to the left.	2010	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	5	% of total paper purchased contains 100% recycled content	Evaluating the efficacy of moving to 100% recycled.	Committee review.	2009	No End Date (Continuous)
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	40	% of network printers or photocopiers are set to automatic double-sided	This percentage represents the Employee side of printing. All labs are still single sided.	Evaluate and research whether or not double sided printing in the labs is viable.	2011	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Completed in 2010	80	% of network printers have 'print and hold' settings applied	All employee MFD's have this capability. All student lab printers are pay/release stations.		2000	2010
Electronic media in place of paper							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development			Preliminary evaluation of Microsoft Sharepoint.	Deployment of Microsoft Sharepoint in a test environment with potential production deployment in 2012.	2011	2012
Post materials online that were previously printed	Ongoing/In Progress			In IT Department, detailed reference information such as reference and documentation is being posted on the web in a user accessible knowledge base rather than printed. We are working to build user awareness of this resource.	Continue to provide more information in the form of web based content, rather than printed reference guides. Continue to build user awareness of web based help and reference material.	2010	No End Date (Continuous)
Behaviour change program							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development			Testing SharePoint within ITS department	Act on recommendations from testing	2011	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	In Development			The Registrar is evaluating the move to Ipads and laptops in lieu of paper agendas and minutes.	Testing of Ipad by Registrar.	2010	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress	5	% of staff currently are reusing scrap paper	Print Services creates note pads from scrap paper.	Evaluating possibilities for reuse of scrap paper	2002	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 organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Business Travel						
Policy and budgeting						
Create a low-carbon travel policy or travel reduction goal	In Development			Committee formed to develop policy for travel.	2011	2012
Education, Awareness, and Engagement						
Other Education, Awareness, and Engagement Actions						
Develop a pledge to encourage students, staff, and faculty to commit to behavioural changes to reduce energy consumption.	Ongoing/In Progress	150	Students/staff/faculty have signed the Pledge	Promotion of "My Green Pledge" at Welcome Back BBQ and other events. Pledge also available online.	Continue to encourage others to sign the pledge and follow through with actions for reducing energy	2010 No End Date (Continuous)
Provide energy tips and reminders to students and staff (e.g. e-newsletters, newspaper articles, posters)	Ongoing/In Progress	3	opportunities have been undertaken so far to achieve this action	E-newsletter sent to staff. Newspaper article in campus paper. "Green tips" emails started to those who have signed pledge.	Further promotion of energy awareness using media as an avenue.	2010 No End Date (Continuous)
Develop a dedicated energy management website	Ongoing/In Progress			Energy management website developed, including energy tips and forum for soliciting ideas for energy reduction.	Promotion of website across organization	2010 No End Date (Continuous)
Prepare a Strategic Energy Management Plan to incorporate energy reduction targets	Ongoing/In Progress			Draft Strategic Energy Management Plan developed	Finalization of plan, including reduction targets. Plan will be a "living" document and updated as required.	2010 No End Date (Continuous)