

## Carbon Neutral Action Report Thompson Rivers University

### Executive Summary

Thompson Rivers University recognizes the need to achieve carbon neutrality as part of an overall environment and sustainability strategy. Environment and sustainability is one of the seven guiding principles of the university and is featured prominently in the Strategic Plan. An Environmental Advisory Committee has been established, reporting jointly to the Board and Senate, with representation from all segments of the TRU community. A director of Environment and Sustainability has been appointed who is preparing a detailed environment and sustainability plan for the campus. One of the three key components of the plan will be carbon neutrality. Thompson Rivers University has begun a partnership with BC Hydro for a comprehensive energy reduction process including the hiring of an energy manager, an energy audit, and follow up activities. Prior to this initiative, significant energy saving plans have been undertaken including a lighting retrofit of the Science Building, energy reduction in the Information Technology area and the use of heat from the computer bank to provide 20 per cent of the heating requirements in the building. The new LEED Gold House of Learning is another visible commitment of the university to carbon neutrality. Employee and student initiatives are also important and "Green Team" projects are planned for 2009. In 2008, Thompson Rivers University had the highest number of faculty involved in a province-wide teach-in on climate change. The bookstore also purchases and actively promotes sustainable products. In addition, food services have virtually all biodegradable material. Supplementary activities are planned in areas that are energy efficient, such as waste recycling, and including individual behaviour changes. Specific targets and timelines will be published in the Environment and Sustainability Plan.

In addition to the overriding objectives, Thompson Rivers University has imbedded the reduction of green house gases in the governance of the University by explicitly identifying Environmental Sustainability as one of the seven fundamental principles governing the institution. This is further supported by specific actions in the University Strategic Plan.

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

### Overview

Installation of a monitoring system in major buildings allows for remote monitoring of energy use to provide a baseline for the development of an energy reduction program. The emphasis in 2008 was put on the organizational structure and senior level commitment to support reducing green house gas emissions; a fundamental principle of the University. To implement that principle, reduction in greenhouse emissions is essential. These commitments are reflected in specific activities in the University Strategic Plan and supported by an Environmental Advisory Committee which reports to the Board and the Senate. An international search was successful in recruiting a highly qualified and experienced individual who assumed the position of director of Environment and Sustainability on January 1, 2009. Within this emerging framework, specific greenhouse gas reduction actions were also initiated, such as a major lighting retrofit of the Science and Nursing building and the installation of energy meters in major buildings which record existing energy use. In 2008, Thompson Rivers University ranked sixth out of nineteen colleges and universities in the use of the BC Hydro energy program. A new vehicle maintenance policy was implemented and changes made to enable the use of waste heat from the university central computer bank to heat the building that houses the IT function. Plans are also underway to implement a revised computer-based records system which will be implemented in 2009. The new system will significantly reduce paper use in 2009.

<b>1.1 Mobile Fuel Combustion</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Complete	Reduce green house gas emissions	Regular vehicle maintenance program established Jan 08
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	In progress		Draft policy in progress
Encouraged use of public transit/active transportation	Complete	Reduce green house gas emissions	Installed car pool promotional material on fleet vehicles. Web site links to car pool & BC Transit web sites.
<b>1.2 Stationary fuel combustion and electricity</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Undertaken Monitor turn-off challenge	Complete	Reduce electricity consumption	Power down all of our printers and multi-media projectors at night
Replaced # computers with EnergyStar models	Complete	Reduce electricity consumption- 0.214 MWH	New desktops have 80 plus power supplies. TRU uses LCD monitors which use a third of the electricity of similar size CRT
Turned off lights in unused rooms	Complete	Reduce electricity consumption	Passive controls installed
Replaced Refrigerators (EnergyStar rated appliance)	Complete	Reduce electricity consumption	Replaced fridges.
Installed multi-function devices (and removed stand-alone printers/faxes)	In progress	Reduce electricity consumption	Reduced personal printers, promote the use of wing multi-function devices and document scanning.
Replaced standard bulbs with CFLs	Complete	Reduce electricity consumption	Replaced 2,500 light bulbs.
Installed motion activated lights	Complete	Reduce electricity consumption	
Undertaken lighting retrofit	Complete	Annual savings of 30% or 356,000 KWH	Lighting in the Science Bldg and Arts & Education Bldg were retrofitted
Implemented server virtualization	Complete	Savings in KWH	Move physical servers to virtual servers - currently over 100 servers visualized, investigating virtualized desktops/# virtualized servers
Utilized desk-top power management settings on computer	In progress	Savings in KWH	Implementing Power Management Software
Initiated corporate computer shut-down/wake-up for maintenance	Complete	Savings in KWH (.3 Mwh/annum)	All computers in student labs auto power down at midnight.
Heat Recovery	Complete	Reduce approximately 20% of the total heating	Recover the heat from the <b>Information Technology Data Centre</b> to
Lights out data centre	Complete	Reduce electricity consumption	Data centre runs 24/7 without lights on
<b>1.3 Supplies</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Committed to use 30% recycled paper	Complete		Paper in washrooms. Virtually all paper purchased and used is 30% recyclable.
Committed to use 100% recycled paper	Complete		100% recycled paper is used for select services such as printing degrees and certificates
Initiated automatic double sided printing	In progress		Plans were put in place to replace all existing copiers with multi-functional machines with double-sided default settings
Committed to hold paperless meetings	Complete		Outlets installed in executive meeting room. Board & Senate meetings use FilePro instead of mass printouts.
Developed document library (online and one printed copy) for large documents	Complete		Implementation of Wiki technology across campus

Re-used non-confidential scrap paper	Complete		Printshop reusing paper to create scrap notepads
Used laptops/tablets	Complete		Notebooks & Netbooks
Restructured a process to use less paper	In progress		All payroll documents online in 2009 & Banner Document Management System for all documents as part of Project SAGE.
<b>Actions on non-paper related supplies:</b>			
Encouraged re-use of furniture and equipment	In progress		Ongoing.
Green seal cleaning and paper products	Complete		Green seal cleaning products and paper products
Green Bookstore Merchandise	Complete		Clothing made from recycled material or renewable resources sold in the Bookstore. Stationary products made from recycled or biodegradable materials sold in the Bookstore. Bookstore offers regular promotions on recycled products. Phasing out plastic bags and replacing with a reusable recycled product
Phasing out plastic bags and replacing with a reusable recycled product	In progress		Complete at bookstore; in progress elsewhere
<b>1.4 Travel</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Trained staff in the use of Live Meeting (or other desktop collaborative software)	Complete	# Users	Collaborative Software
Installed Video Conferencing facilities	In Progress		Continued expansion of video conferencing facilities for meetings, courses online between Kamloops & Williams Lake
<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	Complete	TRU had the highest number of faculty participating	Campus wide teach in as part of provincial teach in
Held contests to change behaviour/make pledges	Complete		"Trash Bash" event to clean up campus every year
Provided green tips	Complete		Open Learning encourage online education as a green alternative
Supported professional development	In progress		Attend Hydro seminars on sustainability
Environmental Advisory Committee	Complete		Environmental Advisory Committee established 2008. Sought input from employees and students through working groups.
Student Initiatives	Complete		Students are not employees but are a core group in the participation process. Student groups have hosted BC Sustainable Campuses Conference and other special events in 2008 including a sustainability week and waste audit of major buildings.

<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		Research is underway on water filling stations. Plus, installed 65 sensors (58 faucets & 7 urinals)
Ran dishwasher only when full	Complete		
Reduced/replaced bottled water with filtered or refrigerated water	In Progress		TRU is installing water stations to replace bottled water.
Improved recycling measures	In Progress		Discount on coffee purchases for re-useable containers
Supported composting	In Progress		All garden material is composted
Used re-usable dishes	Complete		Standard practice
Purchased green cleaning products	Complete		Use Green Seal cleaning products.
Use of recycled materials in renovations.	Complete		Carpet tiles made from recycled materials.
Use of biodegradable containers	Complete		Virtually all of the take-out containers in campus food services are now biodegradable

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

### **Overview**

The greenhouse gas emission reductions for the period from 2009-2011 will continue to be made within the structure of the Strategic Plan of TRU. In addition an Environmental Sustainability Action Plan is being developed by a committee with representatives from the two faculty unions, the support staff union, the student union, the administrators' organization and the alumni. The Action Plan will have four themes: Carbon Neutrality, Paperless Campus, Participation, and Stewardship. An Energy Manager will be hired in the latter half of 2009 to implement the results of an energy management study which will be completed by October 2009. The actual energy reductions from these initiatives will come online in 2010 and 2011. In addition to the implementation of the physical changes required for energy reduction, behavioural changes will be encouraged by education and awareness programs and signs over each switch reminding people to shut off the lights. Additional reductions will be achieved through the extension of already initiated programs, including the use of virtual servers to cut down on computer generated energy requirements. New multi-use copiers will be purchased in 2009 which, along with a series of awareness initiatives, including paper use audits, will reduce the amount of paper used in 2010 and 2011. These initiatives will build on the paper reductions achieved by the introduction of a new IT system that will significantly reduce the amount of paper required for administrative functions. Also in the latter half of 2009, a Transportation Demand Management Study will be conducted, which will result in the implementation of measures to reduce vehicle emissions not only in university-owned vehicles but in all vehicles with the campus as their destination.

### **2.1 Mobile Fuel Combustion**

<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In Progress		Replaced old flatbed with new in Stores	
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In Progress		See 1.1	
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	In Progress		Policy is being developed and will apply to all vehicles entering the campus	Implementation by Dec 31, 2009
Encourage car pooling in fleet vehicles	In Progress		Car pool bumper stickers installed on fleet vehicles	
Encourage use of public transit/active transportation	In Progress		Will look at all aspects of traffic on campus including public transit, private vehicles, pricing policy, etc. Transportation Demand Study will be initiated. Also, TRU has just finalized an agreement for an employee bus pass to be offered at a discounted rate & paid through payroll deductions.	Study completed December 31, 2009. Implementation by September 2010

## 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		Educational programs planned.	
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress		Supplying smart power bars	
Replace # computers with EnergyStar models	In Progress			
Turn off lights in unused rooms	In Progress		Signage reminders over all switches	
Replace Refrigerators (EnergyStar rated appliance)	In Progress			
Replace other appliances (with EnergyStar rated appliance)	In Progress			
Install multi-function devices (and remove stand-alone printers/faxes)	In Progress	Reduction in paper use will be monitored in the purchasing department	Campus-wide replacement of existing printers with multi-functional devices with double-sided default settings.	Machines in place in the latter half of 2009. Full savings realized in 2010
Replace standard bulbs with CFLs	In Progress			
Install motion activated lights	In Progress			
Undertake lighting retrofit	In Progress			
Implement server virtualization	In Progress			
Utilize desk-top power management settings on computer	In Progress			
Initiate corporate computer shut-down/wake-up for maintenance	In Progress			
Unplug unused equipment	In Progress		Use of smart bars	
Undertake building energy audit at LOCATION(s)	Planned	Energy reductions will be measured both on a location and project by project basis	Campus wide energy audit will be initiated as part of a comprehensive partnership with BC Hydro to reduce energy use	Audit to be completed by December 31, 2009. Savings will be achieved through the reporting period and beyond
Initiate or complete a building energy retrofit	In Progress			
Reduce cooling	In Progress		Run the data centre 15% hotter	
Virtual desktop initiative	In Progress		Desktop virtualization in the new House of Learning (GOLD LEED) building	
Paperless Administration	In Progress		We have gone paperless in all administrative processes	

<b>2.3 Supplies</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Commit to use 30% recycled paper	In Progress	central paper purchase receipts	All paper purchased will be at least 30% recycled	Sep-09
Commit to use 100% recycled paper	In Progress		Continue to use as appropriate	
Initiate automatic double sided printing	Planned		The new multi-purpose copiers will have double-sided as the default setting	Dec-09
Commit to hold paperless meetings	In Progress		Expand the use of paperless meetings	
Develop document library (online and one printed copy) for large documents	Planned		Investigate document management within TRU portal	
Re-use non-confidential scrap paper	In Progress			
Use laptops/tablets	In Progress			
Restructure a process to use less paper	In Progress	Reduction in paper based upon central purchasing records	The campus is essentially going paperless for core administration and financial transactions. The new Sage System will be introduced. Pay stubs, employee records, and a wide variety of transactions will be paperless.	01-Apr-09
<b>Actions on non-paper related supplies:</b>				
Purchase cradle to cradle goods	In Progress	Cradle-to-grave' explicitly required in all RFP's for purchases	Purchasing policy to be revised. Purchasing staff are already building 'cradle-to-grave' considerations into RFP's while the policy is being developed	Sep-09
Encourage re-use of furniture and equipment	In Progress			
Utilize green internet options for advertising	In progress		All public postings on BC Bid	
<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>
Install Video Conferencing facilities	In progress		Continued expansion of video conferencing facilities for meetings, courses online between Kamloops & Williams Lake	
<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		Teach ins are held annually. An environment and suitability speaker series will include presentations on climate change.	Sep-09
Hold contests to change behaviour/make pledge	In progress			
Hold contests/support to generate ideas	In progress			
Develop Green Teams	Planned		Green Teams will be established in each building and selected programmes	Sep-09
Support Green Teams (resources)	Planned		Green Teams will be supported by the resources of the Environment and Sustainability Division	Sep-09
Provide green tips	Planned		Website planned.	
Support professional development	In progress			
<b>2.6 Sustainability Actions (others)</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Take water conservation measures – low flow showers or toilets, fix leaks	In progress			
Reduce/replace bottled water with filtered or refrigerated water	In progress			
Improve recycling measures	In progress		Campus wide plan to be developed in 2009	
Support composting	In progress		Kitchen and cafeteria waste to be added in 2009	
Use re-usable dishes	In progress			
Purchase green cleaning products	In progress			
Use green (low-e paints)	In progress			
Support sustainable procurement practices	Planned		Policy will be updated in 2009	
Adopt low-carbon contracting practices	Planned		In new buildings and retro fits	