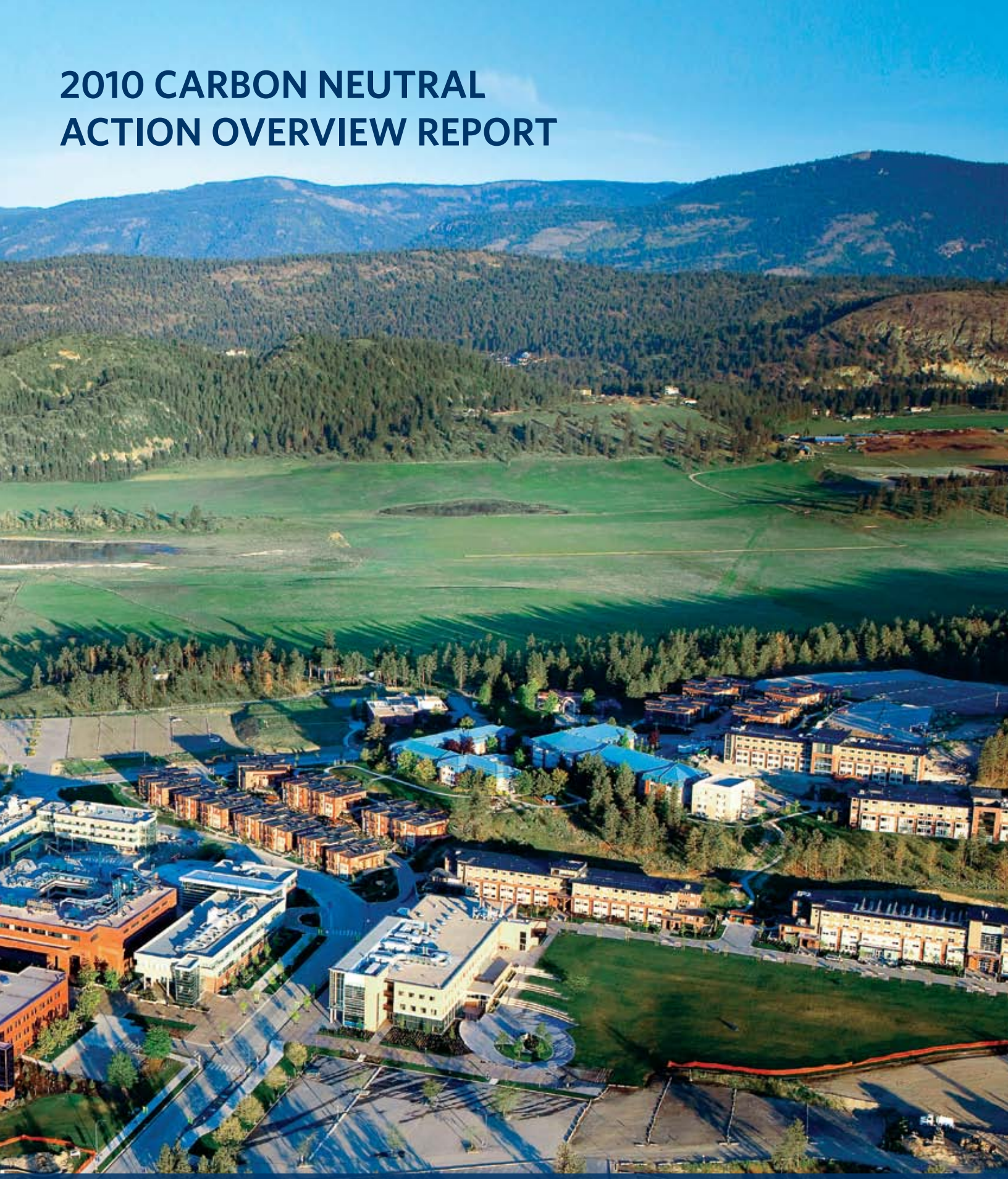
2010 CARBON NEUTRAL ACTION OVERVIEW REPORT



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

OKANAGAN CAMPUS

ENVISIONING A SUSTAINABLE FUTURE

The Okanagan Sustainability Office was established to deliver on UBC's sustainability vision and on the commitments set forth by the Okanagan campus.

We are committed to:

- Create a campus culture that demonstrates advances and integrates all facets of sustainability across its academics and operations.
- Develop a dynamic and resilient learning and working environment by fostering sustainability in teaching, learning and research across all disciplines and by engaging students, faculty and staff to support all aspects of sustainability.
- Enable collaborative links among academic and operational sectors of the campus to build and strengthen a sense of community and to develop the campus as "a living laboratory".
- Establish clear goals and targets for sustainability performance across all sectors of the campus and develop monitoring and reporting protocols to track and report on performance on an annual basis.

This report was produced by University of British Columbia, Okanagan Sustainability Office. It supplements the Carbon Neutral Action Template (attached) and provides a high-level overview of the actions taken by the campus to reduce carbon emissions and create a culture of sustainability.

ACKNOWLEDGEMENTS

Thank you to the many committed staff and stewards of sustainability who contributed to the development of this report and to the achievements realized to advance our collective sustainability goals.

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EXECUTIVE SUMMARY

Building a campus is like building a community.

To responsibly steward the rapid growth and development of this community, UBC's Okanagan campus has placed sustainability at the core of all our planning processes and strategic directions. To date, the campus has grown by 54% in square meters since 2007 and will triple its size from 0.5 million square feet to 1.5 million square feet by the end of the campus build out.

While such rapid growth has increased absolute building carbon emissions by 24.7%, greater efficiencies have been achieved. With a 54% increase in square meters from 2007-2010, the total carbon emissions per square meter has been reduced by 19.1% as compared to 2007 values. Increased efficiency is largely due to the energy efficient design and operation of all new academic buildings and residences on campus, and reductions in natural gas consumption as a result of geothermal heating and cooling which commenced in 2006. The campus has also received a number of awards as a testament to its smart, integrated sustainable building design.

Opened in September 2010, the Arts and Sciences II has been awarded five Green Globes, the highest eco-rating level in this award program reserved for national and world leaders in energy and environmental performance for management, site, energy, water, resources, emissions and indoor environment. Fortis Incentive Program Calculations show the building to be 40% better than Model National Energy Code of Canada for Buildings (MNECB). Water efficiency strategizes a 47% saving on potable water use through low flow fixtures, water efficient landscaping and the use of bio-swales along the west side of the building.

Student Residences Phase 3b opened in September 2010, and features a number energy efficient design elements and attributes. In addition, Student Residences Phase 4, has been awarded a grant of $58,000 for the energy efficiency measures adopted during the design and construction process, which is currently underway. The facility is targeting UBC's REAP third party reviewed green building program, Gold Level at completion in 2011.

While much of the focus on sustainability is associated with the physical infrastructure of the campus, the social sustainability and resilience of the campus community is of equal importance. Campus buildings are designed to foster a sense of community, including four newly established collegia spaces, which offer students a comforting and welcoming place to gather, interact, and engage with each other. A new staff and faculty lounge space was developed in 2010 which extends this philosophy to all members of the campus community who work, live and learn here.

Measures to reduce carbon emissions in 2010 and planned future actions form the basis of the CNAR Actions Template (attached). A high-level overview and additional to reduce emissions "above and beyond" to promote a culture of sustainability are provided on the following pages.

JACKIE PODGER
AVP Administration and Finance
UBC's Okanagan campus

2010 GREENHOUSE GAS EMISSIONS

Total Emissions Calendar Year	2,852.67 tCO2e
Buildings	2,725.82 tCO2e
Mobile Combustion	62.79 tCO2e
Office Supplies	64.06 tCO2e

FUGITIVE EMISSIONS

The following fugitive emissions have been deemed by the British Columbia Provincial Government as out of scope for reporting:

- Gases used for research and medical purposes
- Type R22 HFC's from refrigerating units on campus
- Any emission sources that comprise less than 1% of the campus total GHGs

In-scope HFC's have been tracked by the campus in 2010 and amount to 1.47 tCO2e, which is well below 1% of the total campus GHG emissions.

OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2010

Total emissions offset to become carbon neutral in 2010 as provided for in SMARTTool as "total for offsets" is 2,850.69 tCO2e. Emissions that did not require offsets are listed as "out of scope" in the Carbon Neutral Government Scope clarification for the broader public sector document.

EMISSIONS REDUCTIONS ACTIVITIES

The following provides a high-level overview of specific actions and targets reported in the CNAR Actions Table (attached)

Actions Taken to Reduce Greenhouse Gas Emissions in 2010

A. Mobile Fuel Combustion

- Developed and implemented an anti-idling procedure for facilities fleet, which provides for regular vehicle maintenance, driver training and behavior change to reduce GHG emissions
- Implemented new vehicle replacement practices to electric and energy efficient models
- Completed fuel combustion analysis across the campus

B. Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)

- All new academic buildings are built to a minimum LEED Gold Standard or equivalent. All new residential buildings are built UBC REAP standards
- Geothermal district energy system implemented on campus to heat and cool all new academic buildings
- Implemented energy reduction behavior change program in partnership with Fortis BC

C. Supplies (Paper)

- Implementation of document management strategy
- Established non-confidential scrap paper re-purpose program
- A number of "paperless offices" established on campus

PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS 2011-2013

A. Mobile Fuel Combustion

- Implement anti-idling procedure across academic fleet and on-site contractors
- Implement measures to reduce reliance on fleet vehicles
- Divert the number of trips taken by consolidating needs and encouraging fleet carpooling

B. Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)

- Introduce heat recovery sources into district energy loop
- Explore feasibility of energy dashboard monitoring system
- Complete implementation of energy monitoring on a building-by-building basis

C. Supplies (Paper)

- Implement e-procurement system in FY12/13 to replace the current paper-based program and revamp the current procure to pay program
- Expand upon existing paper re-purpose program and establish paperless office best practices guideline

ABOVE AND BEYOND: *Additional Measures to Reduce Emissions and Promote a Culture of Sustainability*

CAMPUS CULTURE & EXPERIENCE

AWARDS & RECOGNITION

UBC Okanagan's leadership in sustainability was recognized in 2010 by the City of Kelowna's 2010 Mayor's Environmental Achievement Awards.

The campus was recognized for making strides toward sustainability and for demonstrating outstanding commitment to environmental stewardship in the City of Kelowna. The campus received first place in the Most Sustainable Development Award Category. A second award was received by a member of the campus for the Most Environmentally Dedicated Individual in the City of Kelowna.

CASE STUDY: LIBRARY GREEN TEAM

The Library Green Team provides a case study of how UBC's Okanagan Campus is embedding sustainability into its culture on a daily basis. The team has developed many creative and impactful sustainability-focused projects and initiatives in the Library. Some of the projects have included:

PARTNERSHIP WITH BETTER WORLD BOOKS

Through this program, used books such as surplus donations are sent to Better World Books to be resold on the second hand market online. A portion of the funds are contributed to worldwide literacy initiatives. To date, the Library Green Team has raised over $500.00 through this program to fund other sustainable initiatives. More information about Better World Books can be found at www.betterworldbooks.com

GREEN PRINTING GUIDE

The Green Printing Guide was produced through the Library Green Team and promotes sustainable behaviours such as double sided printing, saving electronically as an alternative to printing, reducing printing, increasing margins, and printing multiple class slides per page. These guides are posted throughout the library and are available at: http://www.library.ubc.ca/ubco/pdfs/greenprinting.pdf

ECO-FRIENDLY PURCHASING

The Library Green Team has implemented many eco-friendly purchasing decisions for the unit. All staff areas house eco-friendly dish soap and glass cleaner, and as well, eco-friendly office supplies are ordered when available (such as pens, pencils, post-its, etc.).

OTHER INITIATIVES

All library staff power off computers overnight with regular e-mail reminders ensuring that all adhere to this practice. Recent renovations within the Library were completed with low VOC building materials.

FLEET & TRANSPORTATION

MEASURES TO REDUCE EMISSIONS FROM BUSINESS TRAVEL

Virtual Meeting Technology: Video-conferencing options provided at sites across the campus. Campus IT Services undertook a web-conferencing pilot in 2010 with a 32-caller/line capacity. Based on its success the campus will be implementation the web-conferencing phone line in 2011 as a 'TeleConference Solution' to reduce travel.

Process Improvement and Education: Where business travel is unavoidable, plans are in place to highlight carbon neutral travel options such as hotel options that align with UBC supplier code of conduct; promoting the use of technology for on-line itineraries and boarding passes; and measures to replace existing paper-based reimbursements with on-line options.

REDUCING VEHICLE TRAVEL TO CAMPUS

Parking and Security Services have implemented a transferrable carpool parking pass program to provide sustainable and cost-effective transportation options to campus. In addition, transit service improvements and pilot student park and ride sites were implemented in 2010 to increase sustainable transportation options to campus.

CAMPUS OPERATIONS

REDUCING ENVIRONMENTAL FOOTPRINT THROUGH RE-USE AND RE-PURPOSING

UBC's Okanagan campus has integrated a number of re-use and re-purposing activities into its campus expansion plans. In 2010 the campus engaged in the repair of over 200 chairs for re-use in the library building; the re-purposing of ceiling tiles for use in the library building and the ongoing re-purposing of furniture from temporary portables and offices into new academic buildings. All computer Styrofoam packaging is 100% repurposed by a local recycler, and the Styrofoam re-purpose program has now expanded to include all departments, units and campus labs. A "Reuse-it Program" will be considered for pilot at the Okanagan campus in FY 11/12.

CURRENT PRACTICES TO REDUCE AND DIVERT WASTE

- All cardboard packaging for computer delivery is 100% recycled.
- 100% electronic waste is recycled and diverted from landfills.

WATER CONSERVATION MEASURES

UBC's Okanagan campus is committed to measures to conserve potable water consumption and enhance water quality on campus. Measures to reduce water consumption include:

- Replacement of Water Fixtures with Efficient Models: The Okanagan campus will retrofit two original academic buildings with hands-free faucets, flushometers, and dual flush toilets
- Installation of Water Efficient Fixtures in New Buildings: hands-free
- Expansion and Completion of Hunter-Wireless Irrigation System: Build out and completion of system by 2011. The system conserves water by adjusting or ceasing watering times based on temperature, precipitation, and wind speed.
- Monitoring and Measurement: Installation of irrigation sub-meters on new academic buildings and green roofs.

MEASURES TO ENHANCE WATER QUALITY

Measures to improve water quality on campus included the implementation of WaterFilz Kiosks in new academic buildings and residences. The kiosks provide fresh, free, filtered water to students, faculty and staff who bring their bottles to the stations for fill-up.

LIGHTING REPLACEMENT PROGRAMS

The campus is continuing to replace incandescent bulbs with CFL's and T12's with T8's

COLLABORATION STRENGTHENS SUSTAINABILITY OF CAMPUS LABS: GREENING THE LABS

The Okanagan Sustainability Office and Health, Safety and Environment have partnered together on a number of initiatives to strengthen the sustainability of campus labs. These initiatives have created new opportunities to connect the research and operational mandates of the campus to help build safe and sustainable labs. One of these projects is the Fisher Lab Plastic Recycling Program which has diverted over 6,000 litres of plastic from the campus waste stream since its inception.

SUSTAINABLE BUILDINGS

At the core of the campus' growth has been a commitment to responsible and sustainable expansion. Any unsustainable features or practices in original infrastructure are being redressed and all new buildings have energy emissions reduction targets of 40 to 50 per cent to attain LEED® Gold certification (Leadership in Energy and Environmental Design).

LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health. UBC's Okanagan campus is excelling in all five areas, some highlights include:

SUSTAINABLE SITE DEVELOPMENT

Where possible, the selection of a building's location and orientation prioritizes the use of the external environment for temperature control, ensuring minimal solar gain in summer and low heat loss in winter. During the construction process measures are also taken to control erosion and mitigate environmental impacts.

WATER EFFICIENCY

Water conservation is a high priority on campus: water conserving features of many buildings include dual flush toilets and ultra low-flow bathroom fixtures, reducing water consumption by 30 per cent or more when compared to conventional systems.

ENERGY EFFICIENCY

Plans are well underway to outfit and connect all buildings with the campus' geo-exchange system. Many classrooms and labs are equipped with occupancy sensors for lighting and ventilation to conserve energy when rooms are unoccupied. Carbon dioxide (CO2) sensors are also in place to increase or decrease the amount of fresh air intake, as necessary.

MATERIALS SELECTION

Many building materials, which are manufactured locally whenever possible, have high recycled content, reducing the embodied energy in the building and limiting the demand for raw materials. Highly durable materials are used in order to minimize future maintenance and replacement. Construction crews are championing waste reduction, ensuring at least 75 per cent of waste material is diverted from the landfill.

INDOOR ENVIRONMENTAL QUALITY

Interior finishes, from paint to carpets, are selected for their low VOC (Volatile Organic Compound) levels to preserve the indoor air quality. In many buildings occupants can easily adjust the conditions of their environment with access to operable windows, lighting, and temperature controls.


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Valley First
Valley First

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
Mobile Fuel Combustion (Fleet and other mobile equipment)			
Vehicle fuel efficiency			
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	21 % of vehicles are fuel-efficient models	Vehicle inventory completed. One gas golf cart retired and replaced with electric.
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress		As existing vehicles are retired they will be replaced with high efficient and/or hybrid vehicles.
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100 % of vehicles are subject to regular maintenance for fuel efficiency	All vehicles are regularly maintained.
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	50 % of small maintenance vehicles are fuel-efficient	Currently 50% of golf carts are electric.
Behaviour change program			
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	100 % of current drivers are trained	100% of all new driving employees are trained.
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress		100% completed and implemented in February 2010 for Facilities.
Encourage carpooling in fleet vehicles	Ongoing/In Progress		Encourged minimizing of number of trips into town for purchases or sent one person to get all items.
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress		Included in anti-idling practice. Promoting no use of golf carts in courtyard between 8am-4pm.

STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Two additional golf carts will be replaced with electric models in 2011. As existing vehilces are retired they will be replaced with high efficient and/or hybrid vehicles.	2008	No End Date (Continuous)
As existing vehicles are retired they will be replaced with high efficient and/or hybrid vehicles. Size will be considered and a purchasing factor balanced according to vehicle needs.	2008	No End Date (Continuous)
Continue regular maintenance of all vehicle fleet.	2005	No End Date (Continuous)
Replace with electric/new technologies.	2005	No End Date (Continuous)
Mandate pre-trip inspections for fleet vehicles (internal Facilities practice).	2010	No End Date (Continuous)
Encourage fleet practice to be implemented by other departments and site contractors.	2009	No End Date (Continuous)
Considering measures to eliminate need for fleet vehicles to collect items. Looking at strategies to reduce on/off campus travel. (Central Stores). Continue to promote under Anti-idling practice.	2009	No End Date (Continuous)
Promote walking where possible.	2009	No End Date (Continuous)

ACTIONS TOWARDS CARBON NEUTRALITY

ACTION	STATUS (AS OF 12/31/10)	PERFORMANCE TO DATE (AS OF 12/31/10)	STEPS TAKEN IN 2010
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)			
Planning/management			
Enrol in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress		Conducted benchmarks through SMARTTool. Conducted cost benefit analysis of green projects aimed to mitigate energy consumption and overall carbon emissions. Building energy benchmarking in place for all new buildings on campus (eg. Fortis BC energy efficiency assessment, LEED Gold Standards, Green Globes Design).
Reduce office space (square meters) per employee	Ongoing/In Progress		Building deisgn and space planning item. New buildings factor in ratio.
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Completed in 2010	100 % of buildings have a real time metering system installed	Submetering project completed.
Owned buildings			
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100 % of owned buildings have an established energy performance baseline	Completed baselines with implementation of submetering and use of SMARTTool software. Submetering natural gas and all remaining electrical metering for remaining buildings (all new A&SII, SCI, ART, ADM, CHP, GEO, CASS, NIC).
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Ongoing/In Progress		Completion of Arts & Sciences II received 5 Green Globes Award.
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress		All new academic buildings are built to LEED Gold standard or equivelent. All new residential buildings are built to UBC REAP building standards.
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress		Integrated design process incorporated through geothermal district energy system.

STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Working towards dashboard energy monitoring system. Continue building energy benchmarking for all new buildings on campus.	2009	No End Date (Continuous)
Continue to factor in ratio for new construction.	2005	No End Date (Continuous)
Working towards dashboard energy monitoring system. Continue building energy benchmarking for all new buildings on campus.	2009	No End Date (Continuous)
Energy performance baselines to be developed and monitored on a per building basis for greater level of specificity. New buildings to be included in baselines as they are developed and completed.	2010	No End Date (Continuous)
All residences built to REAP Gold standard. All new academic buildings are built to LEED Gold standard and incorporate green technologies.	2005	No End Date (Continuous)
All new academic buildings are built to LEED Gold standard or equivelent. All new residential buildings are built to UBC REAP building standards.	2005	No End Date (Continuous)
Incorporating heating and cooling systems into the campus district energy systems. Continue to incorporate an intergrated design phase for new construction and renovations of owned buildings.	2005	No End Date (Continuous)

ACTIONS TOWARDS CARBON NEUTRALITY

ACTION	STATUS (AS OF 12/31/10)	PERFORMANCE TO DATE (AS OF 12/31/10)	STEPS TAKEN IN 2010
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	100 % of owned buildings have undergone energy retrofits since start year indicated	Existing academic buildings were retrofitted to geothermal heating capability.
Retrofitting owned buildings			
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress		Ventilation updated to energy efficency codes (exhaust air for fume hoods) in Science building. CO2 sensors installed in ventilation system in Admin Building.
Upgrade lighting systems during retrofits	Ongoing/In Progress		Phase our T-12's to T-8's in lighting systems.
Upgrade/adjust control systems during retrofits	Ongoing/In Progress		Completed installation of motion lighting in classrooms and labs. Compeleted installation of LED lights on signage around campus.
Improve building insulation (including windows) during retrofits	Ongoing/In Progress		No retrofits undertaken in 2010.
Install an on-site renewable energy demonstration project	Ongoing/In Progress		Geothermal district energy loop system is integrated into design of new building construction.
Leased buildings			
Establish energy performance baseline for leased buildings	Ongoing/In Progress		Energy performance baseline established for leased buildings in 2010.
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Ongoing/In Progress		Implementation of measures to track energy utilization by Leasees completed.

STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Working toward further enhancements of the geothermal system and energy reduction stratagies in all existing owned buildings ongoing.	2008	No End Date (Continuous)
Install occupancy sensors on ventillation for other existing academic buildings.	2009	2013
Continue to explore future projects to upgrade interior and exterior lighting on campus. Implement projects with a reasonable return on investment.	2009	No End Date (Continuous)
Computer controlled lighting in hallways. Zone lighting in parking lots. Occupancy sensors in Arts and Sciences to be intalled for ventilation.	2008	No End Date (Continuous)
Planned retrofits from 2011-2013 will include building insulation improvements.	2009	No End Date (Continuous)
Complete geothermal and district energy loop system. Integrate ADM data centre into district energy loop.	2007	No End Date (Continuous)
Anticipated that there will be no leased spaces after completion of campus build-out. Refine reporting and performance baselines through SMARTTool.	2009	No End Date (Continuous)
Considering energy mitigation strategies as approriate.	2009	No End Date (Continuous)

ACTIONS TOWARDS CARBON NEUTRALITY

ACTION	STATUS (AS OF 12/31/10)	PERFORMANCE TO DATE (AS OF 12/31/10)	STEPS TAKEN IN 2010
IT power management			
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	30 % of computers shut down automatically outside of regular business hours	Progressed actions to support 2010 goal. The number of laptops on campus increased which requires a focus on user education. All computer labs are set to automatic shut-off between 12am-7am (Mac computers are set to "sleep").
Implement server virtualization	Ongoing/In Progress	75 % of servers have been virtualized since start year indicated	25% more completed in 2010.
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	100 % of computers have auto-sleep settings applied	Settings are always applied to computer monitors and CPU's.
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	15 % reduction in printers, copiers, and/or fax machines since start year indicated	Price-break incentives provided to departments to replace with more energy efficient equipment. Phased out and replaced 12 older machines.
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	100 % of devices have auto-sleep settings applied	All settings are set to auto-sleep.
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	100 % of computers are ENERGY STAR rated	100% of computeres are ENERGY STAR rated. All centrally funded computers are on a 4-year desktop and 3-year laptop replacement program.
Appliances and electronic devices			
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress		Procurement directive in place to source ENERGY STAR rated products campus wide.
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress		Procurement directive in place to source ENERGY START rated appliances and electronic devices for futre purchases.
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress		2010 educational event and ongoing encouragement on campus to trade in incandecent bulbs.

STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Measures toward behaviour change will be the focus of next steps, working in collaboration with IT Services.	2005	No End Date (Continuous)
Phone system to be virtualized for infastructure servers within next 2 years. Over the next 4 years there will be a reduction of the number of phone and physical servers by providing low to no cost virtual server options to researchers. Pilot projects include a virtual desktop for use in labs.	2007	No End Date (Continuous)
Promote users to leave setting on as part of educational program.	2005	No End Date (Continuous)
80% of existing fleet to be replaced with new Xerox higher efficiency fleet on a fiscal basis commencing 2011/12. Low power laser printer implemention in early 2011 in all computer labs.	2007	No End Date (Continuous)
Continue to ensure all settings on new equipment are set to auto-sleep.	2005	No End Date (Continuous)
Continue to ensure all new computers are ENERGY STAR rated.	2005	No End Date (Continuous)
Continue to transition to high efficient ENERGY STAR equipment as existing, less efficient equipment is retired. Completing inventory of all on-campus Academically housed laboratory and kitchen equipment for 2011.	2008	No End Date (Continuous)
Continue to purchase ENGERGY STAR appliances and electronic devices as existing equipment is retired.	2008	No End Date (Continuous)
Continue to source high efficient light bulbs for future purchases, as well as promote to the campus community.	2009	No End Date (Continuous)

ACTIONS TOWARDS CARBON NEUTRALITY

ACTION	STATUS (AS OF 12/31/10)	PERFORMANCE TO DATE (AS OF 12/31/10)	STEPS TAKEN IN 2010
Behaviour change program			
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress		Launched "Greening Your Office" staff/faculty educational campaign to promote Sustainability as well as offer green tips information and products to decrease the campus' carbon footprint, as well as individual footprints. Partnership in-kind provided by Fortis BC. Launched the Shift publication to promote and encourage sustainable behaviours. Developed and launched Sustainability website to serve as platform for communications, awareness building and behavioural change.
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress		As above.
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress		As above.
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress		As above.
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress		As above.
Encourage use of stairs instead of elevators	Ongoing/In Progress		As above.
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress		In addition to the above, a series of posters and promotion materials were developed and distributed to the campus.
Promote hot water conservation	Ongoing/In Progress		As above.
Other Stationary Fuel Combustion and Electricity Actions			
Facilities - Treated and Untreated Wood pallet repurpose program	Ongoing/In Progress	100 % of wood pallets are repurposed	Establishment of wood pallet repurpose program.
Fuel combustion analysis on boiler systems conducted every 5 years.	Completed in 2010	100 % of analysis on boiler system completed	Fuel combustion analysis completed.

STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Continual education, promotion, and encouragement of Sustainable behaviours and practices. Producing 2nd annual Shift publication for distribution.	2009	No End Date (Continuous)
As above and through communications at varous events, workshops and presentations.	2009	No End Date (Continuous)
As above and through communications at varous events, workshops and presentations.	2009	No End Date (Continuous)
As above.	2009	No End Date (Continuous)
As above, and collaboration with IT Services regarding programming options.	2009	No End Date (Continuous)
As above.	2009	No End Date (Continuous)
In addition to the above, we will continue the distribution of posters and promotional materials at various events and workshops.	2009	No End Date (Continuous)
As above.	2009	No End Date (Continuous)
Program to continue.	2010	No End Date (Continuous)
Engineers to inspect fuel combustion 'flame' every day. Additional complete analysis to be conducted again in 2015.	2005	No End Date (Continuous)

ACTIONS TOWARDS CARBON NEUTRALITY

ACTION	STATUS (AS OF 12/31/10)	PERFORMANCE TO DATE (AS OF 12/31/10)	STEPS TAKEN IN 2010
Supplies (Paper)			
Paper Type			
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	100 % of total paper purchased contains 30% recycled content	Document Management Strategy in place; all copy paper purchased through Unisource contract contains a minimum of 30% recycled content. All virgin copy paper oders received by the vendor are substituted with 30% recycled content. Negotiated paper contract with the vendor to provide compus community 30% pcw for the same price as virgin copy paper.
Printer/document settings			
Switch networked printers and photocopiers to automatic double-sided	In Development		Xerox document management strategy.
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Ongoing/In Progress		All student print jobs must be released.
Electronic media in place of paper			
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	100 % of staff workstations with software installed	All staff workstations have access to a common shared drive. Smart boards have also been implemented.
Use electronic document library for filing common documents	Ongoing/In Progress		There is a campus-wide shared drive in which all departments have access.
Post materials online that were previously printed	Ongoing/In Progress		Departments have varying policies for document management systems. Traditional paper documents have been transferred online using the UBC Website (such as campus maps, doucments, online registrations, etc.). All departments have access to a shared drive which serves as an electronic library. Supply Management and IT departments have started to look at e-procurement options to eliminate the process of paper requisitions when procuring through Supply Management.

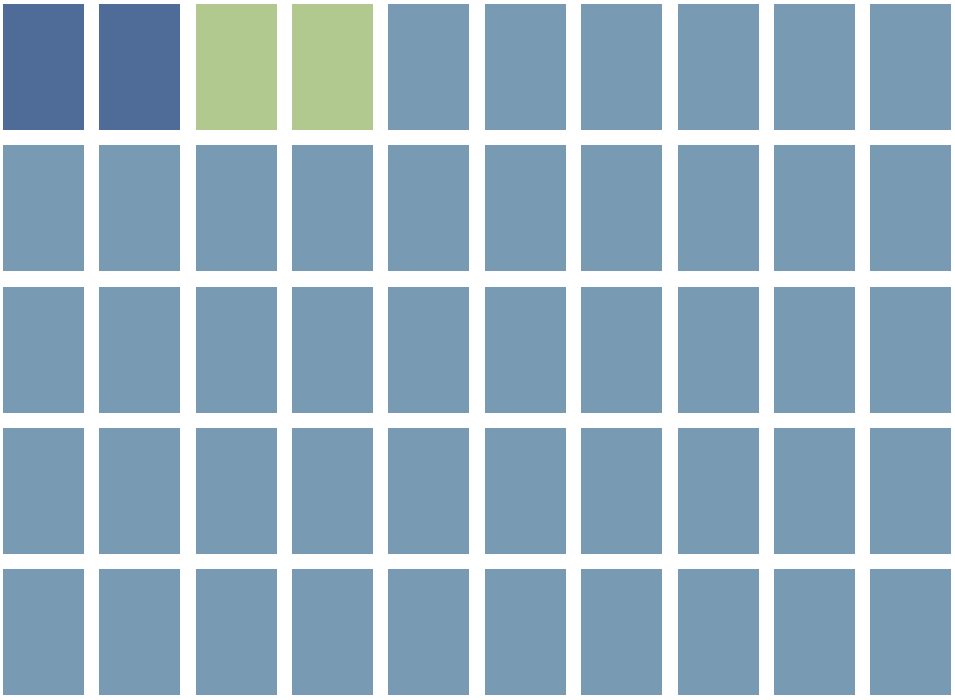
STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Continue to focus on paper reduction stratagies.	2009	No End Date (Continuous)
Planned action to educate staff/faculty to print double sided. Xerox assessment to streamline technology and equipment use.	2009	No End Date (Continuous)
Assess feasibility of implementing in all departments. Provide continutal eduation to new students and new faculty and staff hires.	2005	No End Date (Continuous)
Increase education and promotion for staff to use the shared drive.	2005	No End Date (Continuous)
Continue to educate new hires about campus-wide shared drive in which all departments have access.	2005	No End Date (Continuous)
Promote to post materials online to decrease paper use. Currently planning to install e-procurement as a system for FY12/13 that will replace the current paper-based program and revamp the current procure to pay program.	2005	No End Date (Continuous)

ACTIONS TOWARDS CARBON NEUTRALITY

ACTION	STATUS (AS OF 12/31/10)	PERFORMANCE TO DATE (AS OF 12/31/10)	STEPS TAKEN IN 2010
Behaviour change program			
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress		Worked with IT Services to determine software options for shared editing which resulted in awareness of shared drive as a file sharing option.
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		Held Sustainability event which promoted paper reduction strategies. Certain departments on campus have continued to make efforts towards using less paper at meetings through technology, such as smart boards.
Encourage re-use of scrap paper	Ongoing/In Progress		Established non-confidential scrap paper repurpose program which turns scrap paper into notepads.
Other Paper Supplies Actions			
Paperless Office	In Development		Several offices have begun the development of paperless office practices and strategies.
IT - Centralized printing tracking	Completed in 2010	100 % Completed	All print jobs are tracked in a centralized system.

STEPS PLANNED FOR 2011 -2013	START YEAR	END YEAR
Increase education and promotion for staff to use the shared drive.	2010	No End Date (Continuous)
Ongoing educational program.	2006	No End Date (Continuous)
Expansion of program planned.	2008	No End Date (Continuous)
Quanitfy and share best practices across the campus.	2010	No End Date (Continuous)
	2005	No End Date (Continuous)

GREENHOUSE GAS EMISSIONS BY SOURCE FOR THE 2010 CALENDAR YEAR (TCO2E*)



2% 62.79 — Mobile Fuel Combustion (fleet and other mobile equipment)

2% 64.06 — Supplies (Paper)

96% 2725.82 — Stationary Fuel Combustion and Electricity (Buildings)

TOTAL EMISSIONS: 2852.67

OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2010

Total offsets purchased: 2850.69. Total offset investment: $71,267.25. Emissions which do not require offsets: 1.97 **

*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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2010 CARBON NEUTRAL ACTION OVERVIEW REPORT FOR UBC'S OKANAGAN CAMPUS