

2012 Carbon Neutral Action Report: Executive Summary

Northern Health is pleased to submit our 2012 Carbon Neutral Action Report outlining the actions we have taken to address greenhouse gas emissions in this past year, and our plans for the future.

For Northern Health, 2012 was a year of identifying additional opportunities to improve building performance and reduce energy consumption. Energy studies were carried out at twenty facilities during 2012, identifying a potential 4% reduction in overall energy use.

Northern Health was also able to reap the rewards of previous years' work, as the Health Authority reduced its overall energy consumption by 3%. It is noteworthy that this was achieved in a year that saw the addition of a much larger new hospital in Fort St John.

In addition to buildings, the fleet fuel consumption has declined for the third year in a row, thanks to the 'right-sizing' approach.

Recognizing that greenhouse gas reduction can be influenced at all levels, Northern Health engages a broad spectrum of the organization in the effort, from executive commitment to staff-level energy awareness.

In addition, ongoing building operational efficiencies are being addressed through the BC Hydro Continuous Optimization program at our major facilities. This program assess how buildings are operated (lighting, heating, ventilation, etc.) and how those operations can be modified to improve conditions in the facility while reducing energy consumption.

As we move forward into 2013, we look forward to continuing our efforts to reduce carbon emissions. Northern Health is committed to sustainable action and leaving a healthy environment for the future populations of northern British Columbia.



Cathy Ulrich

President and CEO, Northern Health

2012 Greenhouse Gas Emissions

In 2012, heating, lighting, ventilation and other building operations necessary to maintain a healthy patient/client and workplace environment resulted in the emission of 22,842 tonnes of carbon and carbon equivalents into the atmosphere.

Paper consumption led to the release of an additional 361 tonnes of carbon equivalent emissions, and fleet vehicles were responsible for 746 tonnes of carbon equivalent emissions.

In total, Northern Health had a measured carbon total footprint of 23,949 tonnes for the delivery of quality healthcare in the most challenging climate (in terms of temperature/weather extremes) in the Province. This is a 3% absolute reduction compared to 2011.

Offsets Applied to Become Carbon Neutral in 2012

Northern Health purchased 23,949 tonnes of carbon offsets to counter the emissions identified above, thereby achieving carbon neutrality in accordance with government legislation.

Thirty-three tonnes CO_{2e} of emissions resulting from the combustion of bio-fuel were reported as part of our emissions profile in 2012. However, they were not offset, as they are considered carbon neutral in accordance with government carbon accounting legislation.

Emissions Reduction Activities

Northern Health continued its ongoing efforts in 2012 to reduce carbon emissions from its operations. This effort started in 2008 and is a process of continual improvement towards carbon neutrality.

Actions Taken to Reduce Greenhouse Gas Emissions in 2012

In 2012, Northern Health (NH) continued its efforts around energy efficiency, carbon reduction and sustainability awareness. Important initiatives in 2012 included improvements to heating recovery / boiler systems, implementation of building automation systems and automation system improvements. All of

these efforts will result in the annual reduction of energy consumption, and consequently, the reduction of carbon emissions.

Energy studies were carried out at twenty facilities during 2012, identifying 140 energy conservation measures and a potential 4% reduction in overall energy use. Work to implement many of these measures began in late 2012, and will continue through the summer of 2013.

Our second full year of running the employee energy awareness program was a success, and will continue in 2013 at the University Hospital of Northern BC in Prince George.

In 2012, we opened our first LEED Gold facilities: the new Fort St. John Hospital and the new North Peace Residential Care facility. The BC Cancer Agency Centre for the North also opened as a LEED Gold facility located on the grounds of the University Hospital of Northern BC (UHNBC) in Prince George. The new Centre uses thermal energy supplied by the UHNBC plant.

Plans to Continue Reducing Greenhouse Gas Emissions in 2012-2013

Nine of our largest sites remain enrolled in the BC Hydro Continuous Optimization program as it moves through its three-year program cycle. Plans are under way to expand training for facilities staff in those and other facilities, and to build capacity within the organization to identify opportunities to improve building performance.

Supporting our efforts are industry advancements in technology and cost-efficiency of environmentally friendly solutions, which we look forward to implementing where appropriate.

The implementation of energy conservation measures will continue at twenty Northern Health facilities. We will undertake a number of highly targeted energy audits of select facilities in the next 12 to 24 months to identify additional savings opportunities.

Our fleet will continue to see older inefficient vehicles removed from service and replaced with modern fuel-efficient vehicles. Evaluation of a fully electric vehicle will begin in 2013.

We continue to engage qualified energy specialists within Northern Health to help us achieve reductions in energy consumption and greenhouse gas emissions.

Northern Health Authority (NHA) - 2012 Carbon Neutral Action Report

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	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Encourage carpooling in fleet vehicles	Not Yet Evaluated				No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Completed (in Previous Year)				No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Shared purchase of fully electric passenger vehicle, a Nissan Leaf. Shared with the City of Prince George, UNBC and the Regional District.	Evaluate performance and determine if use of electric vehicles should be expanded.	2012	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Completed (in Previous Year)				No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Perform regular fleet maintenance specifically to improve fuel-efficiency	Perform regular maintenance service	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through "workstation tune-ups"	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Ask staff to unplug electrical equipment or switch off power bars when not in use	This strategy is part of the ongoing Workplace Conservation Awareness Program.	2011	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Not Yet Evaluated				No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress	Energy savings types and facts are posted monthly on the NH staff website. Initiated a Workplace Conservation Awareness program which addresses both work and home conservation measures	This strategy is part of the ongoing Workplace Conservation Awareness Program.	2011	No End Date (Continuous)
Encourage use of stairs instead of elevators	Not Yet Evaluated				No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	For 2012 and beyond, the University Hospital of Northern BC is the primary focus of efforts which include having an energy specialist perform audits of administration areas after hours and work with staff to get more lights turned off upon departure. This includes involving housekeeping staff, and having them place stickers on switches which haven't been utilized.	This strategy is part of the ongoing Workplace Conservation Awareness Program.	2011	No End Date (Continuous)
Promote hot water conservation	In Development	Review of potential opportunities to engage staff in conserving hot water.	Evaluate best practices and opportunities and incorporate into existing Workplace Conservation Awareness Program	2013	No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	Continuation of power management implementation.	Work with HSSBC and IBM Desktop Management Systems	2009	No End Date (Continuous)
Implement server virtualization	Completed (in Previous Year)				No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed (in				No End Date

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
	Previous Year)				(Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Ongoing/In Progress	continued to monitor and evaluate reductions in printers.	continue efforts	2010	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Completed (in Previous Year)				No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	continuation of hardware replacements with energy star rated equipment	ongoing effort in accordance with HSSBC strategies	2008	No End Date (Continuous)
Leased buildings					
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Not Yet Evaluated				No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	In Development	Utility consumption data irregularities were examined during 2011 and 2012. Development of a data input and quality assurance process began in late 2012.	It is expected that utility invoices will be accurately input into the accounts payable system utilizing the new process developed by IT. This will help chart ongoing facility performance versus baseline. Additional energy consumption analysis will be performed on major facilities independent of the accounts payable process.	2011	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	The new Fort St John Hospital opened in the late spring of 2012, and is a gold certified LEED facility.	The new Burns Lake and Queen Charlotte hospitals for which funding was committed in 2012 will also be LEED gold.	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	In 2012, energy studies were performed on twenty facilities, and implementation of close to 100 measures in total began in the fall of 2012. (Mainly engineering and tendering.)	2013 will see the implementation of close to 100 energy savings measures.	2008	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Plant maintenance leads are familiar with legislative requirements to capture refrigerants and monitor equipment for losses	2008	No End Date (Continuous)
Planning/management					
Reduce office space (square meters) per employee	Not Yet Evaluated				No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	Through the BC Hydro Continuous Optimization Program, nine facilities have real time electricity and natural gas metering in place.	Use information from the Pulse metering system in conjunction with facilities operation and analysis of direct digital control (DDC) systems to help improve energy performance. Will also be considering applying to FortisBC to acquire additional meters at select facilities. Will also consider use of metering data in measurement and verification of energy efficiency retrofits and behavioural programs.	2012	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	undertook and completed building automation improvements, boiler improvements and heat recovery projects	2008	No End Date (Continuous)

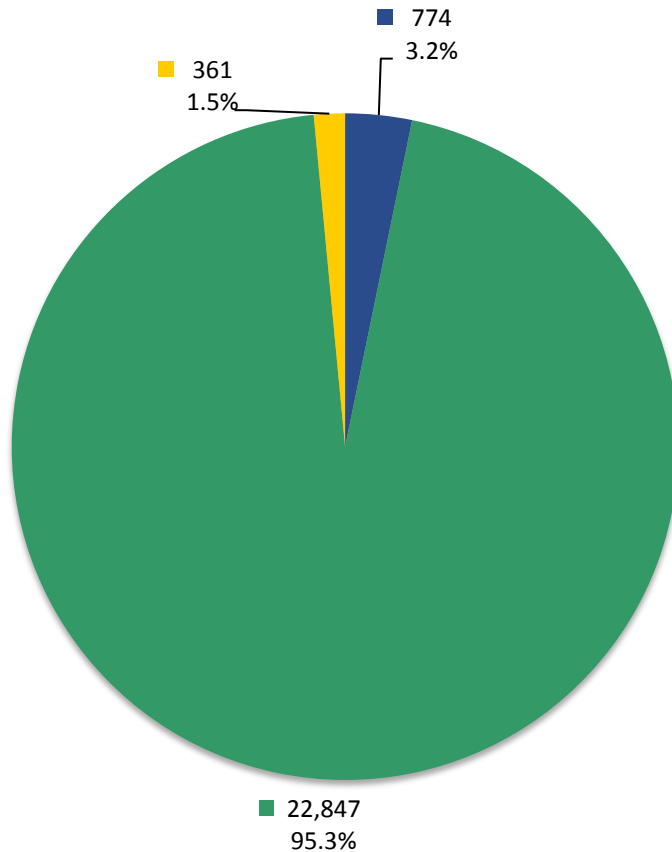
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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Upgrade lighting systems during retrofits	Ongoing/In Progress	Lighting systems were evaluated as part of energy studies in 2012. Some lighting retrofits were carried out.	Additional lighting retrofits to continue in 2013.	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	DDC systems were evaluated in 2012 as part of the energy studies which were performed. Select facilities are also part of the BC Hydro Continuous Optimization Program, which evaluates performance and operation of control systems.	Additional facilities will receive upgraded DDC systems in 2012. This will include updated programming as well as mechanical changes and additional system points.	2008	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	Improve building insulation (including windows) during retrofits	Window and door retrofits	2008	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	All staff have regularly received newsletters via e-mail. The iPortal website has been promoted heavily, with department support towards moving all shared and important documents to the iPortal.	Surveys of the ability to navigate and find resources have already been conducted in 2013. Refinements and continued improvement of the electronic resources is ongoing.	2008	No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	Continued to utilize the iPortal website to store information, including forms, policies, newsworthy items, job postings and much more	Continue with movement to electronic documents, and increase awareness of the iPortal, and all the resources it holds.	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Completed (in Previous Year)				No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	a portion of total paper purchases consisted of 30% recycled content paper	continue practice, subject to HSSBC Purchasing policies	2008	No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Not Yet Evaluated				No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Not Yet Evaluated				No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Completed (in Previous Year)				No End Date (Continuous)

**Northern Health Authority
Greenhouse Gas Emissions by Source
for the 2012 Calendar Year (tCO₂e*)**



Total Emissions: 23,982

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2012 (Generated May 27, 2013 11:08 AM)

Total offsets required: **23,949**. Total offset investment: **\$598,725**. Emissions which do not require offsets: **33** **

*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.