

# 2010 Carbon Neutral Action Report for BC Housing



## Executive Summary

BC Housing is the provincial agency that develops, manages, and administers a wide range of subsidized housing options across the province. We partner with private and non-profit housing providers, other levels of government, health authorities, and community groups to increase affordable housing options for British Columbians in greatest need. BC Housing also helps bring about improvements in the quality of residential construction in B.C. and helps strengthen consumer protection for buyers of new homes.

Our social housing initiatives are designed primarily to address the needs of those who require affordable housing in combination with support services to help them maintain successful tenancies, lead healthier lives and participate more fully in their communities. We directly manage about 7,200 public housing units. Another 62,200 units are managed through our partnerships with over 800 housing providers, mostly non-profit societies and housing co-operatives. As the province's largest social housing landlord, BC Housing owns or leases over 1,000 buildings including directly managed public housing, group homes, single room occupancy hotels, and other types of non-profit operated housing.

Through new responsibilities under the *Homeowner Protection Act* transferred to BC Housing in 2010, we also play an important role in homeownership by licensing residential builders, administering owner-builder authorizations, overseeing the third-party home warranty insurance system, and carrying out research and education to improve the quality of construction of new homes.

BC Housing is at the forefront of energy conservation and sustainability practices among public housing providers in North America and achieving carbon neutrality in 2010 is an important milestone in our ongoing work to further reduce greenhouse gas emissions and address other important environmental issues.

BC Housing's sustainability strategy called the *livegreen*: Housing Sustainability Plan recognizes the significant role that we can play to promote sustainability within the social and private housing sector. Our strategy includes three areas of focus with long-term priorities as well as specific goals and deliverables:

- Buildings – innovation in design, construction and management of housing;
- Change Agent – guiding and supporting our employees and partners to take action on sustainability; and
- Integration – integrating financial, social and environmental considerations in our decision making.

In the last few years BC Housing has undertaken a number of significant initiatives to reduce our greenhouse gas emissions. Approximately 75 per cent of BC Housing's building portfolio (5,640 housing units) is undergoing building envelope renovations and/or energy retrofits under the Housing Renovation Partnership, a \$177-million joint federal-provincial investment program under the Canada-British Columbia Affordable Housing Agreement. To date completed work has led to 25 per cent reduction in greenhouse gas emissions (GHG) in 2010, compared to our 2005 baseline.

Developing new energy efficient buildings and retrofitting older ones to be more energy efficient is a significant part of our work. This focus on buildings ensures our construction and management practices are more efficient, thus reducing GHG emissions, energy costs and creating better living environments for our tenants. The following are our first buildings to be certified by the Canadian Green Building Council:

- Friendship Lodge in Prince George (LEED Gold)
- Victoria Heights in New Westminster (Certified)
- Gateway of Hope in Langley (LEED Gold)

With more than 40 LEED registered buildings either completed or under construction, we expect to further reduce GHG emissions from the province's building stock and provide homes of greater comfort.

While energy efficient and durable buildings are important to us, it is only one aspect of our sustainability initiatives. Integrating sustainability principles into our daily operations and business processes is vital to achieving our specific targets and goal of being a change agent for the housing sector in British Columbia.

There is now broad understanding that climate change is a significant challenge for society and the economy as well as for the environment. BC Housing is committed to meeting this challenge.

This report outlines our actions and progress toward greenhouse gas emissions reductions, and plans for further reductions.

For more information, please visit:

<http://www.bchousing.org/aboutus/livegreen>

<http://www.hpo.bc.ca/>

---

Dan Maxwell

---

Date

VP Corporate Services &  
Chief Financial Officer

## 2010 Greenhouse Gas Emissions

### BC Housing's 2010 GHG Emissions by Source

Emission Source	GHG Emissions (Tonnes of CO <sub>2</sub> e)
Stationary Combustion (Buildings)	26,415.84
Mobile Combustion (Fleet)	182.22
Supplies (Paper)	29.86
<b>Total</b>	<b>26,627.93</b>

It was estimated that stationary fugitive emissions from air conditioning at BC Housing's offices does not comprise more than 0.01 per cent of total emissions and that an ongoing effort to collect or estimate emissions from this source would be significantly onerous and as a result emissions from this source have been deemed out-of-scope and have not been included in BC Housing's total greenhouse gas emissions profile.

### Offsets Applied to Become Carbon Neutral in 2010


BC Housing purchased carbon offsets from the Pacific Carbon Trust to the equivalent of 26,559.53 tonnes of CO<sub>2</sub>e in March 2011, thus becoming carbon neutral for 2010.

### Actions Taken to Reduce Greenhouse Gas Emissions in 2010

#### Buildings

Buildings are the primary source of BC Housing's GHG emissions. There are over 1,000 social housing buildings including 7,200 housing units that fall within the scope of our carbon neutral reporting. Our building portfolio is diverse: from single homes to high-rise towers located throughout 200 communities across the province. Some of the buildings that we own or lease are managed directly by BC Housing, while others are managed by our non-profit housing partners.

BC Housing utilizes a well established formal process to identify and assess social housing sites most in need of repair. The majority of these sites are directly managed by BC Housing and include many recently acquired single room occupancy hotels (SROs) operated by non-profit housing societies that meet qualifying criteria. The directly-managed sites and SROs are the oldest social housing stock in the province and have the greatest capital renewal needs for both life safety and quality of life for tenants.

<b>Buildings</b> 	<b>Change in Absolute GHG Emissions in 2010 (against 2005 baseline)</b>	<b>Positive or Negative Trend</b>	<b>Change in GHG Emissions in 2010 (against 2005 baseline) Per Floor Area</b>	<b>Positive or Negative Trend</b>
<b>Directly Managed</b>	<b>-25 %</b>	<b>+</b>	<b>-23%</b>	<b>+</b>
<b>Non-directly Managed</b>	<b>-7%</b>	<b>+</b>	<b>-13%</b>	<b>+</b>
<b>Offices</b>	<b>6%</b>	<b>-</b>	<b>-19%</b>	<b>+</b>

Specific actions leading to GHG reductions undertaken in 2010 include:

- Energy retrofits and building envelope repairs conducted at 52 housing sites (or 80 per cent of total number of units managed by BC Housing) under the Housing Renovation Partnership;
- Adoption of building standards with high environmental and minimum energy performance requirements, such as minimum Optimized Energy Performance points for the LEED rating systems for large buildings, EnerGuide 80 for small buildings, and caps on maximum energy use from fossil fuels;
- Two renewable energy rooftop solar installations located at Greenbrook in Surrey and Stamps Place in Vancouver;
- Installation of solar domestic water pre-heating systems at 11 sites;
- All new buildings designed and constructed to achieve LEED Gold certification;
- Three projects have achieved LEED certification;
- Forty buildings are currently registered with the Canadian Green Building Council and awaiting completion and/or certification; and
- Adoption of innovative, modular housing construction processes for more than half of the 1,300 new housing units for seniors and people with disabilities under the Seniors' Rental Housing initiative, which also provides employment for local contractors, and utilizes local and recycled materials, such as pine beetle wood in communities across the province.

Some of our projects have been recognized for their sustainability features:

- Greenbrook, a 127-unit public housing site for low-income families won a Silver Award of Excellence in Sustainable Construction and Innovation awarded by the Vancouver Regional Construction Association, as well as an Honourable Mention in the new TechGreen Award given by the Applied Science Technologists and Technicians of BC.

The building envelope replacement of the site's 28 buildings will extend the life of the complex by an estimated 30 years or more. The installation of the largest residential roof mounted solar photovoltaic technology in Western Canada, and the use of high efficiency heating and electrical systems will reduce the complex's GHG emissions by 90 per cent.



*Roof top solar panels at Greenbrook*



*Willowbridge in Kelowna*


- Willowbridge and Gordon Drive in Kelowna received a PowerSense Award from FortisBC, for commitment to innovation, conservation, and sustainability by completing energy-efficiency projects that save over 100,000 kWhs annually.
- The demolition of Little Mountain in Vancouver, the oldest public housing site in B.C., received the People's Choice Award from the Canadian Urban Institute for its leadership and innovation in brownfield redevelopment. The Little Mountain demolition had a 91 per cent recycling rate, with stucco and insulation as the majority of materials going to the landfill. It is rare for sites aiming for LEED certified redevelopment to divert more than 70 per cent of demolition materials from landfills. It is estimated that 40 per cent of waste in Metro Vancouver's landfills is construction materials that could have been recycled.



*2.1million kilograms of wood (right) from demolished buildings at Little Mountain was moved into an onsite wood grinder (middle) and the by-product is organic mulch (left).*

## Fleet

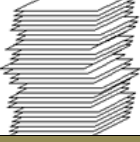
BC Housing has 43 fleet vehicles. Most of the vehicles are trucks and vans used by our grounds and building maintenance staff. Our office pool vehicles include only Smart Cars and hybrid vehicles. The changes observed in emissions from the fleet can be attributed to more efficient methods of organizing the maintenance staff's work and drivers' education, as well, as the use of public transport for business travel whenever feasible.

Fleet	Change in Absolute GHG Emissions in 2010 (against 2008 baseline)	Positive or Negative Trend	Change in GHG Emissions in 2010 (against 2008 baseline) Per KM Travelled	Positive or Negative Trend
	- 9 %	+	- 2.18%	+

## Paper

In 2005 most of the office paper at BC Housing had no recycled content. By 2010, 80 per cent of office paper was 100 per cent recycled paper and 18 per cent had 30 per cent recycled content. The change in the type of paper we buy combined with a 14 per cent reduction in the amount of paper we use resulted in a 45 per cent reduction in greenhouse gas emissions compared with our 2005 baseline. This amounts to preserving 461 trees in 2010. This significant GHG reduction was achieved despite the rapid growth of our programs and a significant increase in staff resulting in emission reductions of 65 per cent per employee. Some additional factors that contributed to reduced paper use include:

- Since the Homeowner Protection office launched its new online services for residential builders in January 2010, 93 per cent of all new license and renewal applications are now made online.
- Staff education about paper conservation practices was promoted through the Paper Challenge program that featured employees who were able to make the largest reductions in their paper use. The program created a lot of competitive excitement and understanding about the adoption of best practices in paper use reduction.

Paper	Change in Absolute GHG Emissions in 2010 (against 2005 baseline)	Positive or Negative trend	Change in GHG Emissions in 2010 (against 2005 baseline) Per Employee	Positive or Negative trend
	- 45 %	+	- 66%	+

## Plans to Continue Reducing Greenhouse Gas Emissions 2011 – 2013

BC Housing’s Sustainability Plan includes short- and long-term goals for reducing our greenhouse gas emissions, other negative environmental impacts, as well as providing leadership in sustainable housing.

Some of the key initiatives planned for the next couple of years include:

- Upgrading the housing stock, including energy retrofits that will result in further significant GHG reductions and energy cost savings;
- Development of energy efficiency programs for buildings managed by our non-profit partners, such as group homes and multi-residential buildings;
- Research and evaluation of potential key sustainability performance measures that can be implemented for major renovations;
- Development of LEED tools to support the decision making process related to GHG reduction targets, LEED requirements and building life cycle;
- Further development of BC Housing’s building construction and maintenance standards;
- Employee engagement campaigns related to GHG reductions from operational activities, such as energy use in offices;
- Further development of tenant engagement programs and toolkits with a focus on energy conservation;
- Implementation of a green fleet management program;
- The Homeowner Protection Office will continue to present Building Smart seminars about innovation in construction and design for Licensed Residential Builders, contractors, trades, architects, engineers, building officials/inspectors, suppliers, and others involved in the home building industry to provide practical information on the latest in building science and good building practices on various topics, including energy efficiency and green buildings; and



- The Homeowner Protection Office will continue to initiate research and education initiatives that address energy efficiency in new residential construction.

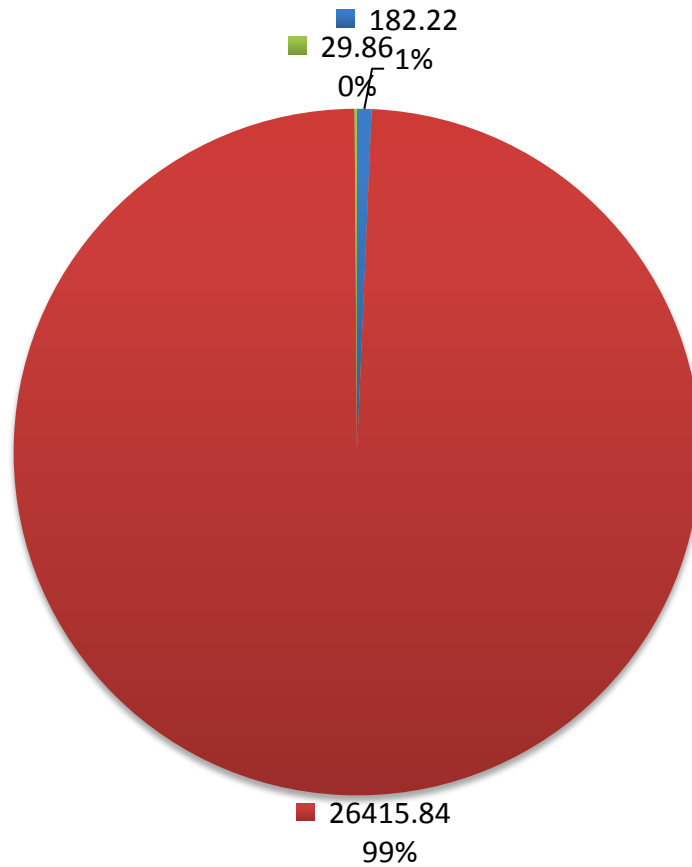
For more information, please visit:

<http://www.bchousing.org/aboutus/livegreen>

<http://www.hpo.bc.ca/>

# The British Columbia Housing Management Commission (BC Housing)

## Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 26627.92**

- 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: **26559.53**. Total offset investment: **\$663,988.25**. Emissions which do not require offsets: **68.39** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) 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.

# The British Columbia Housing Management Commission (BC Housing) - 2010 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 (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
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>							
<b>Vehicle fuel efficiency</b>							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	19	% of vehicles are fuel- efficient models	No new vehicles were purchased in 2010. Change in # of vehicles is a result of a merger with HPO	Implementation of the Green Fleet Management Program	2005	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	Regular maintenance program is in place	On-going regular maintenance	Started before 1995	No End Date (Continuous)
<b>Behaviour change program</b>							
Provide fleet driver training to reduce fuel use	In Development	53	% of current drivers are trained	Green Fleet Program has been initiated	Implementation of the Green Fleet Management Program	2005	2012
Encourage carpooling in fleet vehicles	Ongoing/In Progress			On-going encouragement to carpool	On-going encouragement to carpool	2005	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	5331	km traveled using public transit	Transit tickets are available for staff as an alternative to fleet vehicle travel	Transit tickets will continue to be available for staff as an alternative to fleet vehicle travel	2005	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>							
<b>Planning/management</b>							
Enrol in a building energy benchmarking program (e.g., GREEN UP)	In Development			Approached CaGBC and are currently awaiting enrolment info	Pursue enrolment	2010	No End Date (Continuous)
Reduce office space (square meters) per employee	Ongoing/In Progress			A three -year space planning strategy has been developed	Implementation of the strategy that includes considering of our carbon footprint, minimizing additional operating costs and ensuring that we manage the re-design of existing space, teleworking and any other innovative ideas to ensure business areas can continue to deliver their services	2009	No End Date (Continuous)
<b>Owned buildings</b>							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100	% of owned buildings have an established energy performance baseline	Energy performance and GHG emissions baseline was established for 2005 calendar year	Continuation of energy performance monitoring. Focus for 2012: development of an energy efficiency program for Group Homes	2008	No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Ongoing/In Progress	47	% of commercial interiors in owned buildings have labelling	New office space registered for LEED certification (HPO office)	Certification of the new HPO office	2010	No End Date (Continuous)

## The British Columbia Housing Management Commission (BC Housing) - 2010 Carbon Neutral Action Report

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
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress			All new construction projects are being designed to achieve LEED Gold certification. 40 projects were registered and being built to high energy efficiency and design standards in 2010. Sustainable design model was created to address decision-making needs, LEED requirements, GHG reduction targets and life cycle of buildings. First LEED buildings received certification and are now occupied: Friendship Lodge in Prince George (LEED Gold);Victoria Heights in New Westminster (Certified), Gateway of Hope in Langley (LEED Gold)	Build all new projects to LEED Gold certification	2008	No End Date (Continuous)
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	100	% of buildings built or renovated since start year indicated used the integrated design process	Integrated design process is adopted for both new construction and the energy retrofit program	Integrated design process will be continued	2008	No End Date (Continuous)
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress			Energy retrofits have been completed or initiated on over 80% of directly managed public housing units	Completion of the retrofit program	2009	2012
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress			Mechanical systems upgrades were part of the retrofit program. They are selected on project by project basis	Completion of the retrofit program. BC Housing's Capital Planning process incorporates energy use reduction measures with capital renewal measures	2005	2012
Upgrade lighting systems during retrofits	Ongoing/In Progress			Lighting systems upgrades were part of the retrofit program. They are selected on project by project basis	Completion of the retrofit program. BC Housing's Capital Planning process incorporates energy use reduction measures with capital renewal measures	2005	2012
Upgrade/adjust control systems during retrofits	Ongoing/In Progress			Upgrade or adjustment of control systems were part of the retrofit program. They are selected on project by project basis	Completion of the retrofit program. BC Housing's Capital Planning process incorporates energy use reduction measures with capital renewal measures	2005	2012
Improve building insulation (including windows) during retrofits	Ongoing/In Progress			Building insulation (including windows) upgrades were part of the retrofit program. They are selected on project by project basis	Completion of the retrofit program. BC Housing's Capital Planning process incorporates energy use reduction measures with capital renewal measures	2005	2012
Install an on-site renewable energy demonstration project	Ongoing/In Progress	9	% of retrofits since start year indicated had on-site renewable energy components	502 public housing units across two sites: Greenbrook (Surrey) and Stamps Place (Vancouver) are part of the on-site renewable energy demonstration project. Greenbrook features solar panels and air-source heat pumps, Stamps Place features solar panels	Renewable energy systems will be considered for new projects	2005	No End Date (Continuous)
<b>Leased buildings</b>							
Establish energy performance baseline for leased buildings	Ongoing/In Progress	100	% of leased buildings have an established energy performance baseline	Energy performance and GHG emissions baseline was established for 2005 calendar year.	Continuation of energy performance monitoring	2008	No End Date (Continuous)
<b>IT power management</b>							
Replace computers with ENERGY STAR models during regular computer upgrades	Completed in 2010	100	% of computers are ENERGY STAR rated	100% of desktop computers were replaced to Energy Star. 100% were printers converted		2005	2010
<b>Appliances and electronic devices</b>							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			At least 8,000 of public housing units have refrigerators updated to Energy Star performance. All new appliances installed are Energy Star	All new refrigerators will be replaced with Energy Star models	2007	2012

## The British Columbia Housing Management Commission (BC Housing) - 2010 Carbon Neutral Action Report

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 other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			Washing machines and dishwashers updated to Energy Star in Directly managed Buildings, Group Homes; and new construction units	All new appliances and electronic devices will be replaced with Energy Star models	2007	2012
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress			Distributed 30,000 CFLs under BC Hydro lighting program. Installed approx. 4400 bulbs in 1100 units that were retrofitted	All light bulbs in housing units undergoing energy retrofit will be replaced to CFL bulbs	2007	2012
<b>Behaviour change program</b>							
Ask staff to unplug electrical equipment or switch off power bars when not in use	In Development				Energy challenge planned for 2011	2011	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress			Continuation of award points allocation for consistent use of stairs instead of elevators	Continuation of the existing program	2007	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	In Development			Employee energy savings campaign planning was initiated	Employee energy saving campaign to be conducted in all offices	2010	No End Date (Continuous)
<b>Supplies (Paper)</b>							
<b>Paper Type</b>							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	18	% of total paper purchased contains 30% recycled content	Launch of Sustainability Policy and Green Label Procurement Procedures. Change in procurement practices. Broader communication across the organization and regions of our goals	On-going application of the Sustainability Policy to procurement practices	2010	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	80	% of total paper purchased contains 100% recycled content	Launch of Sustainability Policy and Green Label Procurement Procedures. Change in procurement practices. Broader communication across the organization and regions of our goals	On-going application of the Sustainability Policy to procurement practices	2010	No End Date (Continuous)
<b>Printer/document settings</b>							
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	100	% of network printers or photocopiers are set to automatic double-sided	All black & white Home Office printers are set to automatic double sided printing	Continuation of this practice with any additions of new printers	2009	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Ongoing/In Progress			This setting has been applied to the new printers	Continuation of this practice with any additions of new printers	2010	No End Date (Continuous)
<b>Electronic media in place of paper</b>							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	15	% of staff workstations with software installed	Roll-out of the new software (SLICE) was initiated	New phase of the SLICE roll-out	2009	2013
Use electronic document library for filing common documents	Ongoing/In Progress			The implementation of the New Content Management System has been initiated to enhance electronic document library for filing documents	Full implementation of the New Content Management System	2010	2012
<b>Behaviour change program</b>							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	20	% of staff currently have received collaborative software training	20% of staff has been trained and is currently using the software called SLICE	The rest of organization will be trained and using the software by March 2012	2010	2012
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			All Executive Committee meetings are paperless. Most of other branches meetings are paperless. New equipment (monitors, laptops) have been installed in meeting rooms	Continuation of existing initiatives	2007	No End Date (Continuous)

## The British Columbia Housing Management Commission (BC Housing) - 2010 Carbon Neutral Action Report

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
Encourage re-use of scrap paper	Ongoing/In Progress		Note pads available in Home Office are produced from scrap paper	Continuation of existing initiatives	2007	No End Date (Continuous)

# The British Columbia Housing Management Commission (BC Housing) - 2010 Carbon Neutral Action Report

## 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
<b>Business Travel</b>							
<b>Policy and budgeting</b>							
Create a low-carbon travel policy or travel reduction goal	Completed in 2010			Green Travel Procedure was created and launched. Continuation of existing program such as: teleworking, employee transit pass, Bike Purchase Program		2010	2010
<b>Virtual meeting technology</b>							
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	100	% of computers have web-conferencing software installed	Unified Communications System project was launched enabling web and video conferences, instant messaging and video calling	Videoconferencing will be expanded to external parties	2007	2011
<b>Behaviour change program</b>							
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Alternative travel is encourage by: transit tickets available to Home Office staff	Continuation of the program	2007	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>							
<b>Team-building</b>							
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	In 2010 there was 4 percentage points increase as compared to the baseline. Livegreen Employee Council continued to focus on engagement of employee and their families	Implementation of the Employee livegreen Council strategic plan	2008	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	Livegreen Council is allocated 12 paid hours per month per each member. Resources were made available to build a website and create a baseline survey and facilitated strategic planning process. Livegreen Forum has been supported to allocate their time on sustainability related tasks	Livegreen Council will continue to receive the necessary support	2008	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress			Interactive livegreen website has been increasing used for communication of sustainability topics. Sustainability library has been created with related videos and books	Continued use of the livegreen website and other resources	2008	No End Date (Continuous)
<b>Awards/Recognition</b>							
Establish a sustainability/green awards or recognition program	Ongoing/In Progress			Green Points award program continued to gained popularity	Continuation of the Green Point program	2008	No End Date (Continuous)
<b>Staff Professional Development</b>							
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	60 employees across the organization, and also from BC Hydro - participated in training on LEED: Core Concepts and Strategies. 1-day training took place for staff working on building projects across the organization. Modules included: 'New Construction' and 'Core Concepts and Strategies'	LEED training for employees and BC Housing partners - details TBD	2009	No End Date (Continuous)

## The British Columbia Housing Management Commission (BC Housing) - 2010 Carbon Neutral Action Report

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
Include green options in employee performance measurement system	Ongoing/In Progress			Corporate Plan, Branch plans and a number of individual performance plans include sustainability related goals	Integration of sustainability into corporate performance plans will continue	2008	No End Date (Continuous)
<b>Staff awareness/education</b>							
Provide education to staff about the science of climate change	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	An interactive educational session has been conducted for the members of livegreen Council, Forum and the Executive team. LEED training (attended by 60 employee) included a section on climate change	At least one educational session set-up open to all employees	2008	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	An interactive educational session has been conducted for the members of livegreen Council, Forum and the Executive team	At least one educational session set-up open to all employees	2008	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	Livegreen Employee Council provides regular green tips on BC Housing intranet sites	Employee Livegreen Council will continue to provide green tips via the website and through other events as set-out in their strategic plan	2008	No End Date (Continuous)
Provide sustainability education during new staff orientation	Ongoing/In Progress	75	% of employees who indicate they feel supported by BC Housing to make good sustainability choices in the workplace and at home	Presentation of BC Housing's commitment to sustainability is integrated in new staff orientation. Updated of video component of the orientation	On-going implementation	2008	No End Date (Continuous)
<b>Client/public awareness/education</b>							
Provide education to clients/public about the science of climate change	In Development			Pilot project on tenant engagement on sustainability has been initiated	Evaluation of the pilot and creation of a broader tenant engagement strategy	2010	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	In Development			Pilot project on tenant engagement on sustainability has been initiated	Evaluation of the pilot and creation of a broader tenant engagement strategy	2010	No End Date (Continuous)
<b>Other Sustainability Actions</b>							
<b>Water conservation</b>							
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress			Efficient water fixtures were installed on sites include in the retrofit program	Efficient water fixtures will be installed on sites include in the retrofit program	2007	No End Date (Continuous)
<b>Waste reduction/diversion</b>							
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress			Pilot composting initiative conducted in Home Office	Composting program to be rolled out for the whole of Home Office	2009	2012
Implement a hazardous waste reduction and disposal strategy	In Development				Complete representative sampling and inventory of hazardous materials on 33% of properties owned and directly managed by BC Housing	2011	2012
<b>Procurement (non-paper supplies)</b>							



## The British Columbia Housing Management Commission (BC Housing) - 2010 Carbon Neutral Action Report

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 minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	In Development			Sustainable Procurement Program to be created	2011	2012
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	Ongoing/In Progress		Green Lens Procedure was created to focus on items with green labels.	Sustainable Procurement Program to be created	2009	2012
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Green cleaning products have been replacing other products at all directly managed sites. They were also made available to employees for personal use at home	Continuation of the existing green cleaning program	2009	2012
Require a minimum purchase of sustainable, and organic food and beverages supplied by contracted food suppliers or caterers	Ongoing/In Progress		Green Lens Procedure was created to focus on items with green labels, including organic and sustainable food	Sustainable Procurement Program to be created	2009	2012
<b>Building construction, renovation, and leasing</b>						
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress		92% waste diversion achieved (at no additional cost) at Little Mountain (Vancouver) demolition of 36 buildings. Plan to initiate waste diversion tracking in 2011/2012 FY	Initiate waste diversion tracking in 2011/2012 FY	2010	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress		Lifecycle costing was incorporated into the retrofit program	Continue to use lifecycle costing	2008	No End Date (Continuous)
<b>Indoor air quality</b>						
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture	Ongoing/In Progress		Phasing out of VOC and oil based paints at all BC Housing owned sites is in progress	Complete elimination of VOC and oil based paints from use at public housing sites	2008	2012
<b>Commuting to and from home</b>						
Introduce telework/work from home policy	Ongoing/In Progress		Continuation of the program	Continuation of the program	2008	No End Date (Continuous)
Offer staff a compressed work week	Ongoing/In Progress		An option of compressed work week exist to the effect of increased work hours so that every three week an employee can take a flex-day	Compressed work week will be continued	2005	No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress		Participation in Bike to Work Week and The Commuter Challenge	Participation in Bike to Work Week and The Commuter Challenge	2005	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress		On-going	On-going	2005	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress		On-going	On-going	2005	No End Date (Continuous)