

**Carbon Neutral Action Report  
British Columbia Transmission Corporation**

**Executive Summary**

The BC Transmission Corporation (BCTC) has developed a strategic Climate Change Response Plan. One of the objectives in this Plan is to achieve carbon neutrality of the Corporation by 2010. In F2008, the Corporation completed a greenhouse gas emission inventory to understand and manage its emissions. This inventory provided the necessary information for the Corporation to implement steps to become carbon neutral. The greenhouse gas emissions inventory also indicated that the Corporation will be eligible to participate as a large emitter under the proposed provincial emission cap and trade program. This program allows the Corporation another facet to support the Province in its overall emission reduction commitments under the Western Climate Change Initiative.

To become carbon neutral, the Corporation will continue to reduce direct emissions through the use of low carbon fuels, energy conservation and efficiency along with the use of renewable and recycled products to achieve reductions for indirect emissions. In conjunction with the Carbon Neutral requirement, BCTC continues to manage the existing transmission system to ensure system resiliency to climate change impacts, and build new transmission infrastructure to support the Province's sustainable and clean energy development and overall emission reduction objectives.

**Objectives**

By interconnecting renewable energy BCTC supports the Government of British Columbia's policy objectives in numerous ways. Most notably, BCTC enables development by ensuring that British Columbia's transmission system has the capacity to deliver electricity efficiently and reliably to meet growing demand. BCTC is also responsible for ensuring that the provincial transmission grid is ready to add new clean or renewable, low carbon energy sources.

The BC Energy Plan emphasizes the increasing use of clean or renewable, low carbon energy in British Columbia. Some clean or renewable generation technologies provide energy on an intermittent basis and, as a result, create special challenges for grid interconnection and operation. BCTC is developing the necessary expertise and processes to manage these new technologies. BCTC has initiated, with BC Hydro, a wind integration project to study the impact of intermittent generation sources on the transmission system, as well as to propose effective solutions for integrating wind power reliably and economically.

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

In 2008, BCTC completed the following actions to promote awareness and reduce greenhouse gas emissions: the replacement of several fleet vehicles to improve overall vehicle fleet fuel efficiency, the use of 100 percent recycled paper, employee awareness sessions to convey BCTC's Climate Change Response Plan and the Government's Carbon Neutral initiative. To support longer term and more substantial emission reductions, BCTC implemented the BCTC P.O.W.E.R (Plan for Office Waste Elimination and Reduction) initiative to achieve reductions in the use of office supplies and energy use over the next several years.

## 1.1 Mobile Fuel Combustion

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In progress	BCTC added a Toyota Hybrid to its vehicle fleet for in-city business commuting.	In 2008, 4 of BCTC's fleet vehicles came up for lease renewal. After conducting a study regarding the efficiency of various fuel types and vehicles (ex. gasoline, diesel, biodiesel, etc.), BCTC selected the most fuel efficient vehicles in their class based on Transport Canada ratings to replace them. BCTC plans to continue to replace older vehicles with fuel-efficient fleet as future leases become due for renewal.
Encouraged car pooling in fleet vehicles	In progress		BCTC provides 5 multi-passenger minivans for business travel (including 1 Toyota Hybrid) to allow for car pooling.
Encouraged use of public transit/active transportation	In progress	In October 2008, 177 of the 422 employees located in the downtown Vancouver office had transit passes.	BCTC has a TransLink Employer Pass Program for eligible employees residing in the Lower Mainland. The pass provides access to public transit for employees to commute between home and work. BCTC pays for 75% of the cost of program participation. Employees are responsible for the remaining 25% of the cost.
Encouraged alternatives to travel in fleet vehicles – bicycles, scooters, electric carts	In progress		BCTC encourages employees to walk or use the Skytrain to attend business meetings wherever possible.
Telework Pilot	Complete	In 2008, 10 employees participated, achieving a combined reduction of 26,000 kms in 6 months.	BCTC partnered with TransLink on a Telework pilot program to encourage employees to work away from the primary workplace to reduce commuting.

## 1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Undertaken workstation tune-ups to help staff understand what they can do to reduce personal energy use	In progress		This was done through BCTC's POWER (Plan for Office Waste Elimination and Reduction) program to reduce GHG emissions at work. The POWER program has the goal of developing and evaluating a list of initiatives to help reduce the burden that BCTC's Bentall office has on the environment and implementing the recommended initiatives. Some of these initiatives involve educating employees about the impacts of their actions and changes they can make such as turning off computers and overhead task lighting each night or when not in use, recycling as much material as possible, proofing documents onscreen instead of printing them, etc.
Supplied power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In progress		BCTC has supplied power-bars to all employees in 2008.
Replaced # computers with EnergyStar models	In progress	In 2008, BCTC purchased 111 EnergyStar desktops and 70 EnergyStar laptops. Of the total active desktops at BCTC, 381 out of 591 (64%) have the EnergyStar logo. Of the total laptops at BCTC, 337 out of 339 (99%) have the EnergyStar logo.	
	In progress		The old computer screens were CRTs and they've been or are being replaced with LCDs which are more energy efficient and have a built-in sleep mode.
Turned off lights in unused rooms	In progress		At BCTC, all lights automatically turn off at 6pm and are turned on when the first employee arrives at work.
Installed multi-function devices (and removed stand-alone printers/faxes)	In progress		Stand alone printers are being exchanged for central business centres. All BCTC's printers have a power-save mode.
Implemented server virtualization	Complete		The Fraser Valley office implemented server virtualization in 2008. The Bentall office is run through Edmonds which also has server virtualization.
Utilized desk-top power management settings on computer	Complete		Desk-top power management was implemented pre-2002.
Initiated corporate computer shut-down/wake-up for maintenance	In progress		BCTC does not initiate corporate computer shut-down/wake-up for maintenance but there is a push where users are defined (i.e., users are specifically asked to shut-down their machines prior to any maintenance work).

Applied for LEED existing building rating		Due to infrastructure, energy and security requirements, it was not practical to achieve LEED certification for BCTC's recently constructed control centres. As an example, many LEED standards, such as use of natural light and proximity to public transit, were not options for these buildings. However, LEED compatible specs or better were used for building envelope, insulation, lighting and other technical parameters.
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Reduce sulphur hexafluoride use	In progress	Measuring SF6 releases that have a high global warming potential, tracking SF6 trends overtime, and linking the issue of SF6 to the overall maintenance program to reduce greenhouse gas emissions due to fugitive emissions.
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### 1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 100% recycled paper	Complete		BCTC has committed to use 100% recycled paper.
Initiated automatic double sided printing	Complete		
Committed to hold paperless meetings	In progress		Installed LCD projectors in meeting rooms to enable employees to view relevant materials electronically to reduce amount of printed paper.
Developed document library (online and one printed copy) for large documents	In progress		BCTC uses a SharePoint server to share documents and minimize printing.
Used laptops/tablets	In progress	In 2008, BCTC purchased 72 laptops with 70 of them having the EnergyStar logo.	BCTC has 289 laptops vs. 474 desktops (approximately 38% of all active computers).
Restructured a process to use less paper	Complete	As of December 31, 2008 49 people had signed up for this online paystub option.	Ceridian, BCTC's HR/Payroll provider, introduced a paperless paystub option to all employees on December 19, 2008.
Chose "Green" items from Distribution Centre	In progress		BCTC is working to support the BC Energy Plan and improve its commitment to the environment through providing eco-friendly products in its BCTC branded promotional items ("Swag") store. Eco Friendly merchandise was introduced to the Swag Store in 2008.
Encouraged re-use of furniture and equipment	In progress		All of BCTC's old computer equipment, including cables, is recycled (handled through BC Hydro).

### 1.4 Travel

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Installed Video Conferencing facilities	In progress		BCTC set up video-conferencing capabilities between 3 locations (the Fraser Valley office, the Southern Interior Office and Bentall) to reduce GHG emissions associated with travel.

## 1.5 Employee Engagement

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Provided climate change education	In progress	In 2008, climate change education was provided to approximately 200 to 250 of BCTC's Bentall office employees.	BCTC provided presentations to internal audiences as part of BCTC's Climate Change Response Plan to educate employees in Finance, Legal and Asset Management departments about climate change issues.
Provided conservation education	In progress		BCTC provided conservation education to employees through the POWER program and a Newsletter on Safety, Environment and Sustainability.
	In Progress	Reduce paper use	BCTC has a 'Think Before You Ink' campaign to
Held contests to change behaviour/make pledges	In progress		In 2008, BCTC had a 'Think Before You Ink' contest to reduce employee printing. Each month, the floor with the greatest reduction in overall printing wins a prize with a grand prize awarded at the end of April 2009 for the floor that has the greatest reduction overall.
Held contests/support to generate ideas	In progress		BCTC supported the employee-led POWER program with the goal to reduce BCTC's impact on the environment. The program started in 2008 and will continue in future years.
Provided green tips	In progress		BCTC provides a quarterly Newsletter on Safety, Environment and Sustainability to all employees to increase employee awareness regarding environmental issues. In the Newsletter, BCTC provides education and various green tips.
Supported professional development	In progress		BCTC sent a number of employees to various climate change conferences; they then shared knowledge with others through other internal presentations.
Carpool incentive program	In Progress	Reduce commuting emission	BCTC also offers a carpooling program by paying for parking if 3 or more employees share a car, however, in 2008 no employees took advantage of the program.
Cycle Commuter incentive program	In Progress	In 2008, 6 employees utilized the cycling program.	BCTC reimburses Cycle Commuter Membership fees. To be eligible, employees must commute to work by bicycle at least 10 days per calendar month. Eligible employees will have their membership fees paid 100% by BCTC.

1.6 Sustainability Actions (others)			
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Ran dishwasher only when full	In progress		
Reduced/replaced bottled water with filtered or refrigerated water	In progress		BCTC has in-sink filtering systems; does not use bottled water.
	In progress		Stopped buying bottled water for meetings and replaced them by bringing glasses and pitchers of filtered water to the meetings that would normally have bottled water.
Improved recycling measures	In progress		Recycling bins are provided on all floors for paper, bottles, cans, etc.
	In progress		Placed paper and beverage recycling bin in each meeting room; clearly communicated what can be recycled to increase awareness.
Used re-usable dishes	In progress		Fully stocked and labelled each kitchen with plates, glasses, mugs, cutlery, water pitchers, etc. to eliminate the use of disposable items. Stocked kitchens with bulk coffee supplies – coffee cream, milk, sugar to reduce packaging.
Supported sustainable procurement practices	In progress		As an example, BCTC purchases office stationary and paper supplies from Mills Basics, which is a 'carbon-neutral' company that donates \$1 for each toner cartridge returned for recycling and 1% of the sales of its new lines of 100% recycled pens to Ecotrust Canada.
	In progress	Create less waste	Ordered only what will be eaten at meetings. When leftovers occur, encourage meeting attendees to take the extras home or notify other employees of the leftovers immediately.

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

<b>Overview</b>	<p>BCTC plans to continue and/or expand many of the energy conservation and efficiency measures that took place in 2008 in future years. In 2009, BCTC will also increase its efforts to engage employees to do their part to reduce BCTC's operational impact on the climate and also to educate and inspire them to reduce their own personal greenhouse gas emissions at home. Many of the planned actions, such as turning off computers when not in use, turning off lights when not required, recycling as much material as possible, etc. depend on employees' behaviour and therefore employee engagement will play an imperative role in ensuring that many of the planned actions are successful.</p> <p>On a broader scale, BCTC will also continue implementing the Climate Change Response Program, which includes three facets: 'Compliance', 'Risk and Financial Management' and 'Innovation and Engagement'. A few of the in-progress actions include monitoring the evolving regulatory environment in BC and other applicable jurisdictions, proactively assessing BCTC's climate change obligations in addition to the carbon neutral requirements, such as those of the proposed cap and trade program, determining climate change impacts on planning, operation and asset management, etc.</p>
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<b>2.1 Mobile Fuel Combustion</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In progress		BCTC plans to continue to replace old leases with more fuel-efficient fleet as future leases become due for renewal.	2009 and beyond
Encourage car pooling in fleet vehicles	In progress			2009 and beyond
Encourage use of public transit/active transportation	In progress			2009 and beyond
Encourage alternatives to travel in fleet vehicles – bicycles, scooters, electric carts	In progress			2009 and beyond
<b>2.2 Stationary Fuel Combustion (including electricity)</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Undertake workstation tune-ups to help staff understand what they can do to reduce personal energy use	In progress			2009 and beyond
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In progress		In 2008, BCTC has supplied power-bars to all employees, however, employee awareness needs to be increased to improve usage of the power-bars.	2009
Undertaken Monitor turn-off challenge	In progress		BCTC participated in the 2009 Bentall Monitor Shut-Down challenge.	2009
Replace # computers with EnergyStar models	In progress			2009 and beyond
Turn off lights in unused rooms	In progress			2009 and beyond
Install multi-function devices (and remove stand-alone printers/faxes)	In progress			2009 and beyond
Implement server virtualization			Continue with current actions.	
Initiate corporate computer shut-down/wake-up for maintenance	In progress			2009 and beyond
Apply for LEED existing building rating	Planned		BCTC is in the conceptual design stage of a major new indoor substation in Vancouver. Our initial planning and analysis indicates that we can achieve LEED Certification and may be able to achieve LEED Silver status for that building. We have set Silver Status as our goal.	
<b>2.3 Supplies</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Commit to hold paperless meetings	In progress			2009 and beyond
Develop document library (online and one printed copy) for large documents	In progress			2009 and beyond
Use laptops/tablets	In progress			2009 and beyond



<b>2.5 Employee Engagement</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Provide climate change education	In progress		BCTC recently engaged the Pembina Institute, a non-profit organization with a mission to advance sustainable energy solutions. With support from the Canadian government, the Pembina Institute designed a web-based tool to assist Canadians in choosing actions to reduce their personal production of greenhouse gases by one tonne, or about 20% per year. The "One Less Tonne" tool is available at <a href="http://www.onelesstonne.ca">www.onelesstonne.ca</a> . BCTC is using the tool to engage employees in reducing BCTC's carbon footprint and the carbon footprint of employees in their homes. With every action selected, the tool displays the emission reductions achieved and the money saved in energy costs.	2009
Hold contests/support to generate ideas	In progress			2009
Develop Green Teams	planned		BCTC supported the employee-led POWER program with the goal to reduce BCTC's impact on the environment. The program started in 2008 and will continue in future years. In 2009, a Green POWER Committee will be established to implement a formal green office program at BCTC.	2009
Support Green Teams (resources)	Planned		BCTC will support the Green POWER Committee through required resources.	2009
Provide green tips	In progress		BCTC will continue to provide a quarterly Newsletter on Safety, Environment and Sustainability to all employees to increase employee awareness regarding environmental issues. In the Newsletter, BCTC provides education and various green tips.	2009 and beyond
Support professional development	In progress		BCTC will continue to provide professional development opportunities, such as climate change conferences and presentations, to employees.	2009 and beyond
<b>2.6 Sustainability Actions (others)</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Run dishwasher only when full	In progress			2009 and beyond
Improve recycling measures	In progress			2009 and beyond
Support sustainable procurement practices	In progress			2009 and beyond
Continue to measure and track SF6 releases and linking the issue of SF6 to the overall maintenance program to reduce greenhouse gas emissions due to fugitive emissions	In progress			2009 and beyond