

BC Pavilion Corporation - 2010 Carbon Neutral Action Report

Executive Summary

BC Pavilion Corporation (PavCo) is a Provincial Crown Corporation of the Ministry of Jobs, Tourism and Innovation, Honourable Pat Bell, Minister, and is a leader in the meetings and events industry. Committed to excellence from our values to our execution, PavCo operates two of BC's top public assembly facilities: BC Place and Vancouver Convention Centre.

From hosting global summit meetings to world class sporting and entertainment events, PavCo performs on its mandate of generating economic and community benefit for the people of BC through the prudent management of public facilities. PavCo attracts customers internationally and continuously strives to optimize the financial performance of its facilities, which generate significant economic benefit for the Province of British Columbia.

The Vancouver Convention Centre continues to take steps to manage and mitigate its carbon emissions in both East and West buildings. Initiatives have focused on stabilizing building systems immediately following the Olympics and Paralympics. Emissions data for the first three months of 2010 will have been impacted by the facility's use as the Main Media Centre. Additionally, the East building sails replacement project precluded the use of two thirds of its exhibit space from July 2010 to March 2011, further impacting emissions data for the latter half of 2010 and the first two months of 2011.

BC Place continues to move forward towards meeting its carbon neutral and sustainability goals as set out in the Sustainability Master Plan for BC Place that was developed in 2009. During 2010, BC Place was the host venue for the 2010 Winter Olympic Games opening and closing ceremonies, the evening medal ceremonies and the opening ceremonies for the Paralympic Games. Through the Vancouver Organizing Committee's management program, they achieved a minimum of 15% decrease in greenhouse gas emissions across the board, and were the first Games to stage a carbon neutral torch relay. Post Olympic Games, saw the venue close for the balance of 2010 for a major construction program which includes major upgrades to all levels of the facility including a new retractable roof.



Chief Financial Officer

BC Pavilion Corporation 2010 Greenhouse Gas Emissions

SOURCE	TONNES CO2
BUILDINGS	5,296
VEHICLES	41
OFFICE SUPPLIES	10
TOTAL 2010 EMISSIONS	5,347

Offsets Applied to Become Carbon Neutral in 2010

BC Pavilion Corporation purchased 5,347 tonnes of carbon offset, worth \$133,679, to become carbon neutral for the 2010 calendar year.

Actions Taken to Reduce Greenhouse Gas Emissions in 2010

At the Vancouver Convention Centre actions completed this year include: completing the initial phase of an energy dashboard for improved measurement and communication of energy use and energy savings; partnering with the Green Meetings Industry Council to profile the Vancouver Convention Centre as a green meeting venue of choice and to support the promotion of green meetings; completing integration of lighting/heating controls with the event business management system for improved timing of lights & HVAC with the start and finish of event activities, ongoing internal communication and awareness building with staff and suppliers.

At BC Place as part of the Olympic Games, the Vancouver Organizing Committee was awarded the Excellence for Green Building award from the Global Foundation and the World Green Building Council for building the greenest Olympic district in North America as well as meeting their sustainability initiatives.

In addition, as part of the construction program at BC Place, a concerted effort was enforced to maintain as small a carbon footprint as possible. To date, we have managed through our construction contractor to divert over 253,000 tonnes of construction material from the landfill including such items as metal, cardboard, wood, drywall and aluminum.

Operational Changes in 2010

Use of the Vancouver Convention Centre as the Main Media Centre for the 2010 Winter Olympic and Paralympic Games impacted the emissions data for the first three months of 2010. Additionally, the East building's sails replacement project further impacted emissions data for the latter half of 2010 and the first two months of 2011. The West building

project further impacted emissions data for the latter half of 2010 and the first two months of 2011. The West building has been in “normalized” operations following the end of the Games while the East building has only been fully operational since March 2011.

At the BC Place fine tuning the building control systems remains challenging as the facility has transitioned from an indoor to an outdoor facility; monitoring utility consumption continues. Additional hoarding was added to areas of the building to control heat loss as demolition continued through the winter months. Supplemental gas fired heat was required on interior spaces of the building to minimize freezing of utility services on all levels.

Plans to Continue Reducing Greenhouse Gas Emissions 2010 – 2012

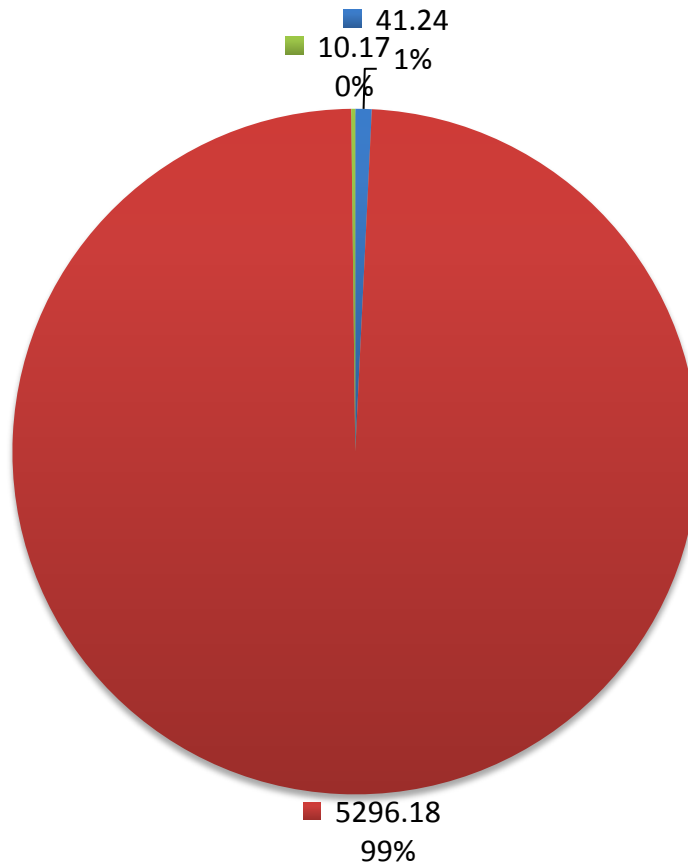
At the Vancouver Convention Centre the calendar year 2011 will mark the first full year of operations of both the East and West buildings in their entirety. Full implementation of measurement tools will allow increasingly refined steps towards the facility’s targeted goal of 3% annual decreases. The facility will focus on improved client and supplier engagement to help reach emissions reduction goals.

BC Place will reopen on September 30, 2011 with a new retractable roof and will become an outdoor venue by option. The Green Committee continues to develop strategies on sustainability, including an employee/guest awareness program and the Purchasing Department continues to investigate sources of new and improved environmentally friendly products. Electrical use will likely decrease as a result of fans no longer needed to keep the roof inflated, and steam consumption should reduce as a result of reduced snow melt requirements and the installation of more energy efficient lighting and gas fired radiant heating on Levels 2 and 4.

The target for the facility continues to be an annual 3% decrease, following the BC Provincial Government reduction target of 33% by 2020.

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Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO₂e*)



Total Emissions: 5347.59

- 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: **5347.17**. Total offset investment: **\$133,679.25**. Emissions which do not require offsets: **0.42** **

*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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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
Mobile Fuel Combustion (Fleet and other mobile equipment)							
Vehicle fuel efficiency							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	20	% of vehicles are fuel- efficient models	At BC Place additional equipment is being assessed as we are closed for construction. At the Vancouver Convention Centre 2 vehicles have been reduced to 1. The remaining vehicle is serviced and maintained regularly to ensure operational efficiency.	BC Place has developed a 6 year replacement program for our fleet and will be implemented as funds become available. At the Vancouver Convention Centre when the remaining vehicle is due for replacement, a more fuel- efficient model will be sought.	2011	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	0	% of vehicles down-sized since start year indicated	At the BC Place equipment is being assessed	We have developed a 6 year replacement program for our fleet and will be implemented as funds become available	2011	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Completed in 2010	100	% of vehicles are subject to regular maintenance for fuel efficiency	Proper and regular maintenance continues to ensure continued operating efficiency during operating months	Our mobile fleet data entry will be complete and work being performed on a more regular schedule according to the task and tracking sheets	2011	No End Date (Continuous)
Behaviour change program							
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Completed in 2010			At the BC Place, while the facility was open, anti-idling rules were applied. For the balance of 2010, the facility was under construction and without a roof	This has been in place for several years and guidelines will be posted at every vehicle entry, this also applies to the exterior of the facility	2011	2011
Encourage carpooling in fleet vehicles	Completed in 2010			At the Vancouver Convention Centre limited number of drivers can access the one vehicle and normal operating procedure is to combine trips and activities.	Periodic and regular reminders to staff	2009	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Completed in 2010			At BC Place presentations have been provided at briefings/tool box talks to discuss carpooling including fleet vehicles and personal to and from work commuting. This has also been included in our Personnel Hand Book	Continue with our program when applicable. Look for areas that can be implemented in order to expand the programs	2011	2013
Other Mobile Fuel Combustion Actions							
The mobile fleet is currently be added to our preventative maintenance program to ensure that maintenance is conducted on a timely and more efficient manner, with proper records and documentaion on what was performed, parts installed if any, labour involved and when service was completed	Ongoing/In Progress	20	Equipment name plate data is being entered into our Event Business Management System which tracks our preventative maintenance programs	The program is in progress and data is being entered as time permits and is 20% complete	The program will be continued as we will be upgrading some of our equoipment over the next few years	2011	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	100	% of buildings have a real time metering system installed	BC Place was closed for construction	Once BC Place is reopened, new baselines will need to be developed; when the building is occupied for events; and when its unoccupied; for normal dark days. At the Vancouver Convention Centre the plan is to complete & implement this as part of the energy dashboard project (see above).	2011	2011
Owned buildings							

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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
Establish energy performance baseline for owned buildings	In Development	100	% of owned buildings have an established energy performance baseline		At the Vancouver Convention Centre the plan is to complete & implement this as part of the energy dashboard project.	2010	2012
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	completed in 2010	50	% of owned buildings are certified LEED NC Gold or LEED NC Platinum	Vancouver Conventin Centre received LEED Platinum status in February 2010. BC Place is still under construction.		2009	2010
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	40	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	BC Place was closed for construction	At BC Place systems continue to be upgraded as the next part of the renovations being completed for opening in 2011. Electrical use should decrease as a result of fans no longer needed to keep the roof inflated, and steam consumption should reduce as a result of reduced snow melt required.	2011	2011
Upgrade lighting systems during retrofits	Ongoing/In Progress	30	% of retrofits since start year indicated had lighting systems upgrades	Level 300 was upgraded including new, energy efficient lighting and improved cooling	At BC Place additional energy efficient lighting is being added during the next phases of construction	2011	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	50	% of retrofits since start year indicated had control system upgrades or adjustments	At BC Place new master building control system is being designed with today's technology. It will be added to control our 32 different sub-systems primarily during evets	At BC Place additional BAS controls will be updraded during 2011	2011	2011
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	10	% of retrofits since start year indicated had insulation improvements	At BC Place upgrades to our exterior doors and glazing has been started	At BC Place high efficiency glazing will be installed in time for opening in 2011	2011	2011
Leased buildings							
Establish energy performance baseline for leased buildings	In Development	100	% of leased buildings have an established energy performance baseline		Vancouver Convention Centre plans to Complete & implement energy dashboard project to provide real time measures of energy use.	2010	2011
Implement server virtualization	Ongoing/In Progress	10	% of servers have been virtualized since start year indicated	Hardware and software were purchased to enable the project to proceed. Begun to migrate old server services into the new systems.	Continue Migration and retire old hardware	2007	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed in 2010	100	% of computers have auto-sleep settings applied	Applied to all laptop computers		2010	2010
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	60	% reduction in printers, copiers, and/or fax machines since start year indicated	Completed full replacement of outdated and inefficient office equipment with multi-function devices, auto-sleep, high capacity toners and Energy Star equipment where applicable and cost effective	Continue with the replacement program where applicable. New equipment will be installed for additional staff being anticipated for 2011	2011	No End Date (Continuous)
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Completed in 2010	100	% of fridges are ENERGY STAR rated	Continue program with additional equipment	Continue with the replacement program where applicable.	2008	No End Date (Continuous)
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress			Ensure CFL's for all new purchases.	Ensure CFL's or high efficiency desk lamps for new purchases.	2009	2011
Behaviour change program							

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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
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress		Regular reminders for user groups	Regular reminders for user groups	2011	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress		Part of the regular evening routine	Part of the regular evening routine	2011	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress		Regular reminders for user groups	Regular reminders for user groups	2011	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress		Regular reminders for user groups	Regular reminders for user groups	2011	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress		At the Corporate Office lights are turned off automatically in the evening. AT other facilities it is part of the regular evening routine	Part of the regular evening routine	2011	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress		Regular reminders for user groups	Regular reminders for user groups	2011	No End Date (Continuous)
Supplies (Paper)						
Electronic media in place of paper						
Post materials online that were previously printed	In Development		BC Place has been evaluating steps to allow customers to order and pay for services online for events. BCPlace has initiated an intranet to distribute communications and forms internally via electronic means as opposed to the paper form. Also installing a user based online scheduling program that will eliminate paper emails and print-outs of personnel schedules	Continue the development of the initiatives started.	2011	2013

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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
Business Travel						
Policy and budgeting						
Create a low-carbon travel policy or travel reduction goal	Completed in 2010		Car pooling or conference calls are the preferred method of meeting formats where applicable	Continue program	2007	No End Date (Continuous)
Behaviour change program						
Encourage carpooling to meetings	Ongoing/In Progress		BC Place is encouraging staff to carpool, take transit or alternate means of transportation. At the Vancouver Convention Centre Video-conferencing was in place by the opening in 2010.	Continue program through daily/weekly safety and crew talks	2011	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress		BC Place is encouraging staff to carpool, take transit or alternate means of transportation. At the Vancouver Convention Centre Video-conferencing was in place by the opening in 2010.	Continue program through daily/weekly safety and crew talks	2011	No End Date (Continuous)
Education, Awareness, and Engagement						
Team-building						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	In Development			Increase activity & scope of Sustainability Committee at the Vancouver Convention Centre	2011	2012
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress		Periodic staff briefings and reminders of sustainability initiatives at the Vancouver Convention Centre	Continuation of briefings & reminders and improved engagement with Sustainability Committee at the Vancouver Convention Centre	2011	2012
Awards/Recognition						
Establish a sustainability/green awards or recognition program	In Development		At BC Place a Green Committee was established in 2010.	Awards programs etc will be part of the mandate for the green committee	2010	No End Date (Continuous)
Staff awareness/education						
Provide green tips on staff website or in newsletters	In Development		At the Vancouver Convention Centre staff and supplier intranet was launched in 2010. At the BC Place an intranet link is currently being tested by the Green Committee before being released to the internal users	The program will be released to internal users and will continued to be kept current by members of the Green Committee and our IT staff	2010	No End Date (Continuous)
Other Sustainability Actions						
Water conservation						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress		We are currently replacing fixtures with more modern, efficient type	Continue replacement program	2011	No End Date (Continuous)
Waste reduction/diversion						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	In Development		At BC Place, under development by the Green Committee	To be implemented prior to opening in 2011 at BC Place. The Vancouver Convention Centre is building on the existing policies in order to develop and implement a more aggressive approach	2011	2012

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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
Implement a hazardous waste reduction and disposal strategy	Completed in 2010		Ongoing program and ongoing annual training in place.		2000	No End Date (Continuous)
Procurement (non-paper supplies)						
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	In Development		At BC Place, under development by the Green Committee. At the Vancouver Convention Centre a Green Purchasing Policy was established and rolled out.	To be implemented at BC Place prior to opening in 2011	2010	2011
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	In Development		At BC Place, under development by the Green Committee. At the Vancouver Convention Centre a Green Purchasing Policy was established and rolled out.	To be implemented at BC Place prior to opening in 2011	2010	2011
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	In Development		At BC Place, under development by the Green Committee	To be implemented at BC Place prior to opening in 2011	2011	No End Date (Continuous)
Building construction, renovation, and leasing						
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Completed in 2010		Currently the practice.	Continuation of the practice.	2000	No End Date (Continuous)
Indoor air quality						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Completed in 2010		Incorporated as part of the Employee Guidelines	Continuation of the policy & the practices.	2011	No End Date (Continuous)
Commuting to and from home						
Encourage commuting by foot, bicycle, carpool or public transit	Completed in 2010		Incentives offered to trade parking benefits for green alternatives and via Corporate Transit program.	Continuation of the policy & the practices.	1990	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Completed in 2010		Facilities provided for.	Continuation of the policy & the practices.	1990	No End Date (Continuous)
Provide secure bicycle storage	Completed in 2010		Facilities provided for.		1995	No End Date (Continuous)
Modify parking fees or parking availability for staff/students	Completed in 2010		Incentives offered to trade parking benefits for green alternatives		1990	No End Date (Continuous)