

Section One: Setting the Course

This section of the **Climate Action Plan – Phase One** focuses on the key pillars of the B.C. Climate Action Plan as they relate to the Province as a whole.

For details on sector-by-sector emission reduction strategies, see Section Two: Acting in Every Sector.

Legislated Targets

The November 2007 Greenhouse Gas Reduction Targets Act entrenched the following commitments in law:

- By 2020, B.C. will reduce its greenhouse gas emissions by 33 per cent, compared to 2007 levels. In addition, legally binding targets will be set this year for 2012 and 2016.
- By 2050, GHG emissions in the Province will be reduced by at least 80 per cent below 2007 levels.
- By 2010, the B.C. public sector will be carbon neutral. In other words, the government is setting an example and keeping its own carbon footprint as small as possible.

Key Partnerships

- An important part of British Columbia’s approach to climate action is working with other governments – whether they be municipal or local, provincial, regional, or international - as partners to forward climate action goals.
- B.C. was among the first in Canada to join The Climate Registry, an international partnership working to create a common approach to measuring and reporting GHG emissions. For details, see Appendix E.
- B.C. has partnered with the states of Washington, Oregon and California in the Pacific Coast Collaborative, which includes a focus on ocean conservation. For details see Appendix D.
- B.C. is a member of the Western Climate Initiative, which is developing regional cap and trade system to help reduce emissions from industrial polluters. For details, see Appendix C.
- B.C. is also a member of the International Carbon Action Partnership, which is working to establish a global carbon market. For details see Appendix F.
- Closer to home, the Province is working with local and regional governments through a wide range of programs and partnership initiatives encouraging healthier choices and cleaner communities. For details see Appendix G.

Experts Agree

Leading economists and scientists agree that a revenue-neutral carbon tax is a critical and necessary tool in the move to reduce greenhouse gas emissions. The tax makes high-carbon choices less attractive and provides an additional incentive for people and businesses to reduce their carbon footprints.

Tax Cuts, Funded by a Revenue-Neutral Carbon Tax

- The government recently introduced legislation to implement a revenue-neutral carbon tax based on greenhouse gas emissions from fossil fuel combustion, effective July 1, 2008. This is an important tax shift. Revenue collected from the carbon tax must, by law, be recycled into the economy in the form of tax cuts. To ensure this occurs, the government is legally compelled to table an annual public plan that clearly outlines how every cent of carbon tax revenue will be balanced by a corresponding tax reduction.
- **What is a Carbon Tax?**
- A carbon tax is usually defined as a tax based on GHG emissions generated from burning fossil fuels. It puts a price on each tonne of GHG emitted, sending a price signal that will, over time, elicit a powerful market response across the entire economy, resulting in reduced emissions. It has the advantage of providing an incentive without favouring any one way of reducing emissions over another. By reducing fuel consumption, increasing fuel efficiency, using cleaner fuels and adopting new technology, businesses and individuals can reduce the amount they pay in carbon tax, or even offset it altogether.
- The British Columbia revenue-neutral carbon tax is based on the following principles:
 - All carbon tax revenue is recycled through tax reductions – As noted above, the government has a legal requirement to present an annual plan to the legislature demonstrating how all of the carbon tax revenue will be returned to taxpayers through tax reductions. The money is not to be used to fund government programs.
 - The tax rate starts low and increases gradually – Starting low gives individuals and businesses time to make adjustments and respects decisions made prior to the announcement of the tax. There is also certainty about the rates for the first five years.
 - Low-income individuals and families are protected – A refundable Low-Income Climate Action Tax Credit will ensure that those with lower incomes are compensated for the tax, and that most will be better off. In addition, a Climate Action Dividend cheque of \$100 will be distributed to all British Columbians starting at the end of June 2008.
 - The tax has the broadest possible base – All emissions from fossil fuel combustion in B.C. captured in Environment Canada’s National Inventory Report will be taxed, with no exemptions except those required for integration with other climate action policies in the future and for efficient administration.
 - The tax will be integrated with other measures – The carbon tax will not, on its own, meet B.C.’s emission-reduction targets, but it is a key element in the strategy. To avoid unfairness and what might effectively be double

taxation, the carbon tax and complementary measures such as the “cap and trade” system will be integrated as these other measures are designed and implemented.

□ How does the tax work?

The carbon tax applies to the purchase or use of fossil fuels within the Province. The amount of GHGs emitted when a unit of fossil fuel is burned depends fundamentally on the chemical make-up of the fuel, particularly on the amount of carbon in the fuel. That fact allows for a relatively simple administrative process for applying the carbon tax.

Administratively, the carbon tax is applied and collected at the wholesale level in essentially the same way that motor fuel taxes are currently applied and collected, except marketable natural gas and propane which is collected at the retail level the same as provincial sales tax. This minimizes the cost of administration to government and the compliance cost to those collecting the tax on government’s behalf.

The tax rates starting on July 1, 2008 are based on \$10 per tonne of CO₂ equivalent emissions, increasing by \$5 per tonne each year for the next four years to \$30 per tonne in 2012. Allowing this relatively long phase-in period up to the \$30 per tonne level is intended to give people and businesses time to adjust their habits and purchasing patterns, and to respect decisions taken before the tax was announced, such as vehicle purchases.

□ Revenue-Neutral Carbon Tax Plan

(\$millions)	2008/09	2009/10	2010/11
Carbon tax revenue (amount to be returned to taxpayers)	(338)	(631)	(880)
Personal Tax Cuts			
– Low income refundable tax credit *	104	145	146
– Reduce bottom two tax bracket rates by 2 per cent for 2008 and by 5 per cent for 2009 and subsequent years *	113	230	244
– Additional personal income tax rate cuts	-	40	157
Total tax cuts for individuals	217	415	547
Business Tax Cuts			
– Reduce general corporate rate to 11 per cent July 1, 2008 *	75	128	133
– Reduce general corporate rate to 10.5 per cent January 1, 2010 and to 10 per cent January 1, 2011	-	6	73
– Reduce small business corporate income tax rate to 3.5 per cent July 1, 2008 *	46	79	82
– Reduce small business corporate income tax rate to 3 per cent January 1, 2010 and to 2.5 per cent January 1, 2011	-	3	45
Total tax cuts for businesses	121	216	333
Total tax cuts	338	631	880

* Legislation introduced with Budget 2008.

With the tax cuts in Budget 2008, in 2009 British Columbia will have the lowest provincial personal income taxes for individuals up to \$111,000 in income of the provinces. Further “recycling” carbon tax revenues into income tax reductions will add to this competitive advantage in personal income tax.

Budget 2008 includes \$60 million for the first stage of LiveSmart BC – the LiveSmart Efficiency Incentive Program, which provides support to households for energy audits and building retrofits. For more on LiveSmart, see page 60.

Since different fuels generate different amounts of GHG when burned, \$10 per tonne of CO₂ equivalent must be translated into tax rates for each specific type of fuel. Table 1.2 shows the per unit rates for selected fossil fuels in 2008. For example, in 2008 the rate for gasoline will be 2.34 cents per litre. The tax rate for diesel used for road transportation will be slightly higher at 2.69 cents per litre due to the higher carbon content of the fuel while the tax on propane will be lower on a per litre basis.

Table 1.2 Selected Carbon Tax Rates by Fuel Type

	UNITS FOR TAX	TAX RATE JULY 1, 2008
Gasoline	¢/litre	2.34
Diesel	¢/litre	2.69
Jet Fuel	¢/litre	2.61
Natural gas	¢/gigajoule	49.66
Propane	¢/litre	1.54
Coal – high heat value	\$/tonne	20.77
Coal – low heat value	\$/tonne	17.77

After being phased in, further tax rate changes will depend on a number of factors including:

- Whether B.C. is meeting its emissions targets
- The expected future impact on emissions of other policies such as cap and trade and low-carbon fuel standards
- The actions taken by other governments to reduce their GHG emissions and to set a price on carbon, and
- The advice of the Climate Action Team.

What effect will the carbon tax have on British Columbians?

The main impacts of the carbon tax for individuals are related to transportation and heating costs. However, it is important to note that for individuals and businesses the tax is revenue-neutral. Additional costs paid in the form of the carbon tax will be offset on aggregate by reductions in income tax. A one-time \$100 Climate Action Dividend will be paid to all British Columbians as well.

For those who use private vehicles for transportation, the impact will depend on four factors; distance driven, fuel efficiency of the vehicles, the type of fuel used, and driving habits. All of these can be adjusted over time to reduce the impact of the tax. For example, in the near term, trips can be combined to reduce kilometres driven. In the first two years, most people driving a typical car or truck 20- or 30,000 kilometres a year can offset the cost of the carbon tax altogether by saving the equivalent of one tank of gas.

The amount of carbon tax associated with heating and cooling of residential buildings and domestic hot water depend on the type of energy used, the energy

efficiency of the equipment, the outside temperature, the level at which the thermostat is set and the energy efficiency of the building.

The table below shows the impact of the carbon tax and associated tax cuts in 2008 and 2009 on a variety of family types. It demonstrates how tax cuts will typically exceed the costs of the carbon tax.

Table 1.3 Carbon Tax and Tax Cuts*

NET SAVINGS		
1. Family of four: \$90,000 income (one spouse earning \$50,000 the other \$40,000)	2008	2009
One-time Climate Action Dividend	400	-
Personal income tax cut	85	224
Van: 10 l/100km fuel efficiency driving 20,000 km/year	-24	-59
Sedan: 9 l/100km driving 15,000 km/year	-16	-40
Natural gas for heat and hot water (102.6 GJ in Lower Mainland)	-26	-64
Annual Savings (\$)	419	61
2. Family of four with boat: \$120,000 income (both spouses earning \$60,000)	2008	2009
One-time Climate Action Dividend	400	-
Personal income tax cut	136	358
Sedan: 9 l/100km driving 20,000 km/year	-21	-53
SUV: 12 l/100km fuel efficiency driving 30,000 km/year	-42	-105
Runabout (water skiing 3 hours per week for 8 weeks @ 30 litres per hour)	-9	-21
Natural gas for heat and hot water (80.3 GJ in Inland interior)	-20	-50
Annual Savings (\$)	444	129
3. Family of four: \$70,000 income (one earner)	2008	2009
One-time Climate Action Dividend	400	-
Personal income tax cut	85	201
Pickup truck: 12 l/100km fuel efficiency driving 20,000 km/year	-28	-70
Sedan: 9 l/100km driving 21,000 km/year	-22	-55
Propane for heat and hot water (58 GJ in Revelstoke)	-18	-44
Annual Savings (\$)	417	32
4. Single income family of four: \$80,000 income	2008	2009
One-time Climate Action Dividend	400	-
Personal income tax cut	85	224
Pickup truck: 14 l/100km fuel efficiency driving 20,000 km/year	-33	-82
Sedan: 9 l/100km driving 20,000 km/year	-21	-53
Natural gas for heat and hot water (142 GJ in Fort Nelson)	-35	-88
Annual Savings (\$)	396	1

Climate Action Dividend

A one time, tax-free Climate Action Dividend cheque of \$400/family of four (or \$100 per British Columbian) will be distributed starting at the end of June 2008. As part of Budget 2008, this money will make it easier for British Columbians to choose a low carbon lifestyle.

For example, British Columbians could choose to use their Climate Action Dividend to purchase energy efficient products (like CFC lightbulbs), conduct a home energy audit, or assist with public transit or alternative transit needs (cycling, walking etc.).

NET SAVINGS		
5. Two earner family of four: \$60,000 income	2008	2009
One-time Climate Action Dividend	400	-
Personal income tax cut	45	118
Van: 10 l/100km driving 20,000 km/year	-24	-59
Natural gas for heat and hot water (84 GJ East Kootenays)	-21	-53
Annual Savings (\$)	400	6
6. Single parent with one child: \$30,000 income	2008	2009
One-time Climate Action Dividend	200	-
Personal income tax cut	13	33
Low income climate action credit	100	205
Older vehicle: 12 l/100km fuel efficiency driving 20,000 km/year	-28	-42
Electric heat and hot water	0	0
Annual Savings (\$)	285	196
7. Senior couple: \$30,000 income (equal pension incomes)	2008	2009
One-time Climate Action Dividend	200	-
Personal income tax cut	0	0
Low income climate action credit	100	205
Older vehicle: 12 l/100km fuel efficiency driving 7,000 km/year	-10	-25
Oil furnace (2,000 litres) and electric hot water tank	-27	-68
Annual Savings (\$)	263	112
8. Single Senior: \$30,000 income	2008	2009
One-time Climate Action Dividend	100	-
Personal income tax cut	16	43
Low income climate action credit	50	103
Older vehicle: 12 l/100km fuel efficiency driving 7,000 km/year	-21	-53
Oil furnace (2,000 litres) and electric hot water tank	-27	-68
Annual Savings (\$)	118	25
9. Single Individual under age 65: \$40,000 income	2008	2009
One-time Climate Action Dividend	100	-
Personal income tax cut	34	90
Sedan: 9 l/100km driving 20,000 km/year	-21	-53
Electric heat and hot water	0	0
Annual Savings (\$)	113	37

NET SAVINGS		
10. Single Individual under age 65: \$80,000 income	2008	2009
One-time Climate Action Dividend	100	-
Personal income tax cut	85	224
Sedan: 9 l/100km driving 12,000 km/year	-13	-32
Electric heat and hot water	0	0
Annual Savings (\$)	172	192

* Carbon tax is \$10 per tonne of CO₂e emissions effective July 1, 2008 and increases to \$15 per tonne effective July 1, 2009.

Carbon tax rates have been adjusted slightly from those used in the Budget 2008 announcement to reflect revised Statistic Canada CO₂e emission factors released in May 2008.

Natural gas and propane consumption are 2007 estimates of actual use from Terasen Gas and Pacific Northern Gas except in the case of the two-earner family of four with \$60,000 which is based on typical heating use examples from Terasen's website.

The relative impact the carbon tax has on British Columbians living in different regions of the Province is subject to many variables, depending on circumstances. However, it is important to note that on average, residents in the lower mainland commute further than residents in all other areas of the Province. Commuting in traffic is also less efficient, so more fuel is used per kilometre in the Lower Mainland than elsewhere in the province because of idling and traffic congestion. Finally, homes that are heated with natural gas will be subject to the carbon tax, while those using electricity will not. Residents of the Lower Mainland use more natural gas per household than most other regions of the province.

▣ What effect will the carbon tax have on business?

Every business or other organization that purchases or uses fossil fuel for combustion in British Columbia will be subject to the carbon tax. The main uses of the fuel are for transportation, heating of buildings and providing heat for industrial processes.

As with individuals, businesses will have choices to make about their fuel usage that will affect the amount of tax that they will pay. The low initial tax rate is not expected to significantly affect the business community and the five year phase-in will allow time for business to adjust. The Province hopes that other jurisdictions will also put effective mechanisms in place that put a reasonable price on GHG emissions. In any case, carbon tax revenue will be recycled to business, initially through significant corporation income tax reductions mitigating the net impact on the business community.

▣ What effect will the carbon tax have on GHG emissions?

According to the *IPCC 4th Assessment - Synthesis Report*, "an effective carbon-price signal could realize significant mitigation potential in all sectors." A preliminary estimate by an independent consulting company (MK Jaccard and Associates) suggests that in absence of all other GHG reduction strategies, the carbon tax

alone could cause a reduction in B.C.'s emissions in 2020 by up to three million tonnes of CO₂ equivalent annually. This is roughly the equivalent to the greenhouse gas emissions created by 787,000 cars per year. See Charting our Progress for more information on GHG reduction estimates.

Carbon Trading

The development of carbon (or emissions) trading is an excellent example of the kinds of opportunities currently emerging as governments, industries and businesses worldwide move to reduce their greenhouse gas emissions. The sector was valued at approximately \$10 billion in 2005. That increased to \$30 billion in 2006, and this explosive rate of growth is expected to continue.

British Columbia is working with partners in the Western Climate Initiative (WCI) to develop a regional cap and trade system that will help reduce emissions in B.C. and ensure that the Province can compete in this new carbon trading marketplace. British Columbia is working hard with its WCI partners to ensure that this system has a high degree of environmental integrity and helps develop opportunities for British Columbia in emissions trading. The Province is engaging regularly with all stakeholders in the development of this system, and the work of all WCI subcommittees is available for public review on the WCI website at www.westernclimateinitiative.org.

▣ How does a Cap and Trade System Work?

A cap and trade system (also called a carbon trading or emission trading system) is an administrative approach that uses the market principles of supply and demand to reduce greenhouse gas emissions.

The goal of implementing a cap and trade system is to reduce emissions by setting a cap on the total amount of emissions for emitters and lowering the cap over time with the aim of achieving an overall reduction target. Emitters that are required to participate in the system, be they large industrial emitters or other groups, are issued emission allowances (also called credits) that are equivalent to the amount of emissions permitted by the cap.

The total number of emission allowances distributed must not exceed the cap, thus keeping the amount of emissions to that level. If an emitter exceeds the amount of emissions represented by their allowances, they must purchase additional allowances from other emitters (this transaction is referred to as a trade). Conversely, if an emitter is able to reduce its emissions and does not need all of its allowances, it will be able to sell the excess allowances for a profit. As an alternative way of complying with the cap, emitters may also be permitted to offset a portion of their emissions by investing in emissions-reducing projects (more on offsets below).

Essentially, emitters that reduce their emissions are rewarded and emitters that continue to emit beyond permitted levels must pay. In this way, a cap and trade system achieves an overall emissions reduction at the lowest possible cost to society by providing an incentive for those emitters that can most cost-effectively reduce their emissions to take action.

Cap and trade systems are market-based mechanisms that use free market principles to achieve an emissions reduction. Because emitters will likely choose the cheapest way to reduce their emissions, the cost of reductions will be reduced as incentives are created. British Columbia will ensure that any cap and trade system introduced in our province will be integrated with the carbon tax and avoid any form of “double taxation.”

A proven track record

Emissions trading systems have a proven track record in the European Union. They form a key element of climate action strategies for the Western Climate Initiative and the Regional Greenhouse Gas Initiative in the northeastern United States.

■ What are carbon offsets?

A carbon (or emission) offset is a greenhouse gas emissions reduction tool an emitter can use to compensate for its own emissions. Offsets are measured in terms of carbon dioxide equivalency and so can represent a reduction in greenhouse gases other than just carbon dioxide.

Offsets represent the net reduction in emissions that occurs when a company or other organization invests money in emissions-reducing (offset) projects. In a cap and trade system, emitters invest in the offset projects by purchasing offset credits in an effort to comply with the cap. In effect, the emitter is compensating for its own emissions by funding another organization’s efforts to reduce emissions. Outside of a cap and trade system or other compliance system, individuals, companies or other organizations can voluntarily purchase offsets to compensate for their own emissions from activities such as those related to transportation or electricity use.

Common offset projects include renewable energy, such as biomass or wind energy. Other common focuses include energy efficiency, afforestation, or the destruction of industrial or agricultural pollutants. One of the key determinants of credible offsets is whether or not the activity is incremental; that is, would not have occurred without the offset investment. Offsets can also be assessed based on whether or not their estimated greenhouse gas reductions are monitored and independently verified to have actually occurred.

Although existing offset systems differ, there are some internationally recognized criteria common to offsets.

Recognized offsets are generally:

- 1) Real - they must result in an absolute net reduction in greenhouse gases.*
- 2) Quantifiable - they must be measured in a way that documents the difference between the emissions that would have occurred in the absence of the offset project and those achieved with the project.*
- 3) Additional - they must result in more greenhouse gas reduction than would have occurred in the absence of an offset system.*

The B.C. Climate Action Team is providing expert guidance as the government moves forward to address climate change. The team is made up of 22 expert advisors, including nine world leaders in the climate sciences. For more on the team, see Appendix B.

As carbon trading develops in North America, new opportunities will be created for British Columbians to develop offset projects in our province. Our abundant natural resources, including the enormous carbon sequestration possibilities presented by our forests and alternative energy potential, will stand us in good stead in this new low-carbon economy.

A Carbon-Neutral Public Sector

The B.C. government is setting an example and working to ensure that all its operations are carbon neutral by 2010. This commitment - enshrined in legislation - is the first of its kind in North America. It applies to all provincial public sector operations, including government ministries and agencies, schools, colleges, universities, health authorities and crown corporations.

As part of this commitment, everyone who works for the Province will be required to:

- **Report** their baseline greenhouse gas emissions – the amount they produce in a “business as usual” scenario;
- **Reduce** these emissions as much as possible; for example, government travel will be replaced with teleconferencing wherever feasible; and
- **Offset** the remaining emissions. Offsetting means investing in projects that reduce greenhouse gas emissions, so the net effect of our activities is carbon neutral.

All public sector organizations will also be required to publicly report on their emissions levels, actions they have taken to reduce these levels, and their plans for continuing to minimize emissions. No other government in North America has made this commitment.

The new requirements apply to provincial ministries and agencies, members of the legislative assembly, schools, colleges, universities, health authorities, Crown corporations and other public sector organizations. All must be carbon neutral by 2010. Core government business travel has also been carbon neutral since October 2007.

Budget 2008 includes more than \$100 million to support this work. Most of the funding will support energy efficiency upgrades to public buildings. In addition, \$15 million has been allotted for developing advanced communication tools that reduce the need for government travel.

The government also has a range of programs and initiatives in place to help public sector employees to make cleaner choices. These include a requirement that all new provincially-owned or leased buildings will be built to a minimum of LEED Gold or equivalent criteria. LEED is the recognized standard in environmentally friendly building design.

PACIFIC CARBON TRUST

The Pacific Carbon Trust is a new provincial Crown corporation that will offer carbon offsets meeting high standards of environmental integrity. Budget 2008 provides \$24 million to invest in GHG-reduction projects in B.C.

The initial mandate of the trust is to offer credible, low-cost offsets to meet public sector demand for offsets necessary to meet its targets for a carbon-neutral public sector. Once up and running, the trust may also sell offsets to individuals and many B.C. businesses.

Concern about climate change and the environment has given rise to new ways of gauging the costs of products and services. For example:

- *Life-cycle costing assesses the full range of costs to the environment – from the production of raw materials through manufacturing, distribution, use and disposal. This allows for meaningful comparisons and supports improvements in business practices. For example, some wineries have begun using Tetra Paks instead of bottles to reduce both their packaging waste and transportation impacts.*
- *"Cradle-to-cradle" costing assesses the total cost of owning a product or asset over its lifecycle. This includes the costs of maintenance, operation and disposal in addition to the up-front capital cost. Costing products in this way ensures decisions are not made on the basis of short-term costs and benefits.*

GREEN PURCHASING POLICY

Government is a major purchaser of goods and services throughout B.C. That means it has the potential to significantly influence local economies and stimulate demand for lower-emission and energy-saving technologies, products and services. Budget 2008 includes \$2 million to develop a new low-carbon purchasing policy with, for example, a new emphasis on products that are designed to avoid waste as much as possible.

THE PUBLIC SECTOR ENERGY CONSERVATION AGREEMENT

The government and BC Hydro have also entered a comprehensive agreement to significantly increase energy conservation and expand the use of alternative-energy options across the 6,500 public sector buildings in British Columbia, including Crown corporations, education and health-care facilities, office buildings, social housing and other government operations. The agreement is based on three pillars:

1. Aggressive conservation targets
2. Enhanced energy assessment, portfolio audits and employee engagement, and
3. Accelerated alternative energy innovation

See Appendix K for text of the entire agreement.

B.C.'s Greenhouse Gas Reduction Targets Act commits all provincial ministries, health authorities, school districts, colleges, universities, Crown corporations and other government agencies to be carbon neutral by 2010. B.C. is the first jurisdiction in North America to make this commitment.



Site of the Whistler Sliding Centre – part of British Columbia's sustainable Olympic Games.

The 2010 Winter Olympic and Paralympic Games A Showcase for Sustainability

All eyes will be on B.C. in 2010 when we host the Winter Olympic and Paralympic Games. For the Vancouver Organizing Committee (VANOC), sustainability means managing the social, economic and environmental impacts and opportunities of our games to produce lasting benefits, locally and globally.

New buildings have been specially designed to conserve energy, water and materials, minimize waste, maximize air quality, and protect surrounding areas.

Existing venues are being upgraded to showcase energy conservation and efficiency and demonstrate alternative heating and cooling technologies. For example, the refrigeration plant at the Whistler Sliding Centre will capture waste heat from the cooling process and transfer it to other buildings on site – reducing overall energy demand.

Overall, the games will be carbon neutral, using carbon trading to offset any emissions produced during construction or staging.

