



Canada at a Glance



Action on Climate Change





Climate change is one of the most significant environmental challenges the world has ever faced. Its effects are already visible in Canada. The current and potential impacts on our health, way of life and economy require us to take action.

With the ratification of the Kyoto Protocol, the Government of Canada has made climate change a national priority, and is working closely with Canadians – scientists, industry, municipalities, the business community and individuals – as well as the global community to meet this challenge.

THE 1980s AND 1990s ARE THE WARMEST DECADES ON RECORD, WITH 1998 THE WARMEST YEAR

THE 10 WARMEST YEARS IN GLOBAL METEOROLOGICAL HISTORY HAVE ALL OCCURRED IN THE PAST 15 YEARS

THE 20TH CENTURY HAS BEEN THE WARMEST GLOBALLY IN THE PAST 1000 YEARS

The Government of Canada's commitment to climate change action since its 2000 Budget has totalled \$3.7 billion. The achievement of our climate change objectives is becoming part of the way the government does business. Our investments in infrastructure, technology, science, and regional development are all being considered in terms of their impact on reaching our climate change targets.

Understanding climate change means that the Government of Canada and all of its partners can address this issue in a way that will lead to reduced greenhouse gas (GHG) emissions, more liveable cities, a cleaner environment and increased competitiveness.



The government is encouraging all Canadians to be part of the solution.

WHAT IS CLIMATE CHANGE?



Climate change is a transformation in the 'average weather' that a given region experiences. As human societies adopt increasingly sophisticated and mechanised lifestyles, the amounts of heat-trapping gases in the atmosphere have dramatically risen. By increasing the amount of these gases, humankind

has enhanced the warming capability of the natural greenhouse effect.

An international scientific consensus has emerged that our world is getting warmer. Abundant data demonstrate that the global climate has warmed during the past 150 years. Corresponding with this warming, alpine glaciers have been retreating, sea levels have risen, and climatic zones are shifting.

Climate scientists worldwide agree that average global temperatures could rise by 1.4 to 5.8°C by the end of this century. This increase will not be distributed evenly around the globe; for Canada, this could mean an increase in annual mean temperatures in some regions of more than five degrees.



IMPACTS OF CLIMATE CHANGE



Climate change is more than a warming trend. Increasing temperatures will lead to changes in many aspects of weather, such as wind patterns, the amount and type of precipitation, and the types and frequency of severe weather events that may be expected to occur. Such climate change could have far-reaching

and/or unpredictable environmental, social and economic consequences.

As with other parts of the world, climate change could bring some benefits to Canada, including milder winters and extended growing seasons. But most of the impacts of climate change on Canada are expected to be more detrimental to our health, safety, economy and environment.

As climate change pushes temperatures higher across the country, we can expect more smog days, especially in major urban areas, which can lead to illness and premature death. Changes in wind and weather patterns can also change the amount of plant pollen and mould spores in the air, making conditions



worse for people with allergies.

Climate change may cause severe weather events – hurricanes, tornadoes, thunderstorms, ice storms, floods and droughts – to occur more often and be more intense, while rising sea levels will mean more erosion and flooding. The danger of forest fires is also on the rise.

Fish, including valuable commercial species such as salmon and cod, are very sensitive to temperature. Changes in water temperature in the oceans, lakes and rivers would likely impact on fish growth, health and distribution, with potentially serious impacts on commercial and recreational fishing in Canada.

The Canadian Arctic is already experiencing impacts of climate change with higher temperatures, melting perma-frost and declining sea ice. As these trends continue and are magnified, the economic, environmental and social consequences for communities in the circumpolar Arctic would be serious and wide-ranging. Erosion is already a serious problem in and around



Tuktoyaktuk, the major port in the western Canadian Arctic, threatening cultural and archaeological sites and causing the abandonment of an elementary school, housing and other buildings. Successive shoreline protection structures have been rapidly destroyed by storm surges and accompanying waves.

Over the present century, the increase in average temperatures in some regions of Canada, particularly the Far North, could be as much as 7°C. That may not sound like a big difference, but when we consider that today's average global temperatures are only about 5°C warmer than they were during the last Ice Age, we realise that even small changes can have a major impact.

'SOME OF OUR COMMUNITIES ARE ERODING INTO THE OCEAN IN FRONT OF OUR EYES BECAUSE OF THE DECREASE IN THE MULTILAYERED ICE, WHICH IS ALLOWING FOR LARGER STORMS TO ROLL IN.'
DUANE SMITH, PRESIDENT INUIT CIRCUMPOLAR CONFERENCE (CANADA)

IMPLEMENTING OUR KYOTO COMMITMENT

Canada is a strong supporter of the Kyoto Protocol, which is the only global mechanism with targets to reduce GHG emissions.



The Protocol emerged from a meeting in Kyoto, Japan, in December 1997, when more than 160 countries, among them Canada, agreed to targets and means to reduce GHG emissions. Canada's target is to reduce GHGs to six per cent below 1990 levels by the period between 2008 and 2012. This

is comparable to the targets taken on by our major trading partners.

WHAT IS CANADA DOING?

Canada's Kyoto target is challenging. However, we have many advantages that will help us rise to that challenge: our natural resources and industrial sectors are highly productive and technologically advanced. We have vast forests and agricultural lands that, properly managed, can be valuable in sequestering GHGs. All government departments and provincial/territorial governments are engaged and demonstrating leadership, while individual Canadians are concerned and attempting to make a difference.

By way of honouring its Kyoto commitment, the Government of Canada announced in April 2005 its climate change plan, referred to as *Moving Forward on Climate Change*:



A Plan for Honouring our Kyoto Commitment. The plan engages all Canadians – farmers, foresters, large and small industries, technology companies, renewable energy advocates, and individuals – in transforming our economy, so that Canada can honour its Kyoto commitment and make significant emission reductions in the decades ahead while enhancing our economic competitiveness.

The plan constitutes the first phase of Project Green, a set of policies and programs aimed at supporting a sustainable environment and a more competitive economy. Along with climate change, it will address a range of environmental issues, including bio-diversity, water, contaminated sites and clean air.

Since the launch of the updated plan just seven months ago, the government has been making progress and is very much on track to meet its Kyoto target, which requires a reduction of 270 megatonnes (Mt) of GHGs within the 2008 to 2012 period.

THE PLAN IS BUILT ON SEVEN MAJOR INITIATIVES:

LARGE FINAL EMITTERS (LFEs)

Oil and gas, thermal power, mining, and manufacturing, among other sectors, are responsible for half of Canada's GHG emissions. The overall reduction target for the LFEs is 45 Mt. Many compliance options are available to LFEs such as adopting upgrades



to achieve in-house reductions; purchasing emission reductions from other LFEs; investing in domestic offset credits; and purchasing international credits provided that these represent verified emission reductions.

Taken together, these options will allow the 700-plus large final emitters across Canada to achieve reductions in the order of 36 Mt. In addition, LFEs will be able to invest in the Greenhouse Gas

Technology Investment Fund, and count those investments for up to 9 Mt. The Fund will direct its spending to technology projects that will facilitate Canada's transition towards a low-carbon economy. Since investments in the Fund are not expected to generate emission reductions within the Kyoto 2008-2012 timeframe, these 9 Mt have not been included in the Plan accounting.

The Government of Canada will put in place regulations to allow for compliance monitoring and emissions trading. The preferred regulatory tool is the Canadian Environmental Protection Act (CEPA), which allows for federal-provincial-territorial equivalency agreements.



AUTOMOTIVE INDUSTRY



The Government has concluded a Memorandum of Understanding (MOU) with automakers in Canada to reduce GHG emissions from light-duty vehicles, which account for 12.5 per cent of Canada's GHG emissions. The agreement sets out commitments by the auto sector to deploy more fuel-efficient and more environmentally friendly technologies and vehicles

through the use of advanced emission and diesel technologies, and alternative fuel and hybrid vehicles.

CLIMATE FUND

Announced in the 2005 budget, the new Climate Fund is a market-based institution which will purchase domestic GHG reductions from farmers, businesses, communities, Canadians and other innovators; and secure qualifying international emissions reductions that will assist Canada in complying with its Kyoto target.

Credits can be sold to the Climate Fund Agency, LFEs, or other domestic buyers. The agriculture and forestry sectors are expected



to play an important role in the Fund, which will achieve a target reduction of 75 to 115 Mt.

In August 2005, the government issued a consultation paper that sets out the proposed rules for the Offset System. The final rules will be submitted to Cabinet for approval in late November/early December.

PARTNERSHIP FUND

The deployment of strategic new technologies and infrastructure are key to ensuring Canada's continued competitive advantage through the sustainable exploitation of our oil sands, coal reserves, and hydro resources. The Partnership Fund will share costs for key projects, such as clean-coal technologies, and carbon-dioxide capture and storage pipeline systems, as well as support national strategies in energy conservation and other areas. Overall, the Partnership Fund will deliver 55 to 85 Mt of reductions. Discussions have already been initiated with most provinces and territories to identify priorities for cost-sharing investments, and the first projects are expected to be announced by the end of 2005.

CANADA IS THE WORLD'S BIGGEST PRODUCER OF HYDROPOWER, USING IT TO GENERATE TWO-THIRDS OF ITS ELECTRICITY PRODUCTION, MAKING THIS RENEWABLE RESOURCE THE MOST IMPORTANCE SOURCE OF ELECTRICITY PRODUCTION IN THE COUNTRY.



RENEWABLE ENERGY



The 2005 Budget introduced significant and innovative tax measures to promote energy efficiency and renewable energy and announced over \$1.8 billion for the next 15 years to quadruple the Wind Power Production Incentive to 4,000 megawatts – enough energy to power one million Canadian homes; and create the Renewable

Power Production Incentive to develop other renewable sources including solar, small hydro and biomass.

CONSUMER ACTION



The Government of Canada is actively engaging its citizens through programs such as the One-Tonne Challenge, which aims to raise awareness of simple, cost-effective, energy-efficient actions Canadians can take. The EnerGuide for Houses Retrofit Incentive is



providing Canadians with the tools they need to reduce GHG emissions by up to 45 Mt. Community challenges are currently underway in some 40 communities across the country, involving more than 2000 organisations. Canada is also developing agreements for co-operating with private sector partners, youth groups, and educators to engage all Canadians in efforts to meet our Kyoto commitment and move forward.

GREENING GOVERNMENT



Through primarily reallocating existing funds, the Government of Canada will reduce its own emissions of greenhouse gases by approximately one third. The finishing touches are being put on a new policy, to be issued in 2006, that will give priority to green procurement in the purchase of standard goods and services. The government

will also ensure that all of its new office buildings meet the Gold Standard of the Leadership in Energy and Environmental Design. These buildings will use an average of almost half the energy of comparable existing buildings, while steps will be taken to ensure that premises under new long-term leases also meet this standard. In addition, the government



will replace its vehicles over time with more efficient alternatives including hybrids.

As the host of the 2005 Montreal United Nations Climate Change Conference, the government is taking steps to ensure that the Conference itself is carbon neutral – that is, that carbon credits will be purchased to offset any carbon-dioxide emissions associated with holding the event.

BEYOND KYOTO

Although the Kyoto Protocol covers a period up to 2012, Canada is looking further ahead.

The government will be putting its case for world-wide action to reduce GHG emissions when 10,000 delegates, media and other parties gather for the UN Climate Change Conference in Montreal from November 28 to December 9.

Canada has two goals for Montreal: finding ways to accelerate progress toward the Kyoto targets and starting the work to build an even more effective, inclusive approach to climate change action beyond 2012.



In meeting the challenge of climate change, Canada will have the opportunity to promote its environmental know-how and technology. Its success will result in cleaner air, greener communities, healthier Canadians and a more competitive Canada.

'MEETING OUR KYOTO COMMITMENTS IS ONLY ONE PART OF A MUCH BROADER NATIONAL INITIATIVE, A MAJOR MULTI-YEAR EFFORT TO CREATE A HEALTHIER ENVIRONMENT AND A STRONGER ECONOMY, TO DELIVER CLEANER AIR AND CLEANER WATER, TO MAKE CANADA AN EVEN BETTER PLACE TO LIVE, AND TO BECOME A WORLD LEADER IN DEVELOPING ENVIRONMENTAL TECHNOLOGY.'

PRIME MINISTER PAUL MARTIN





QUICK FACTS

**CANADA ON TRACK TO MEET KYOTO TARGET OF 270
MT REDUCTION IN GHGs BY 2012**

**GOVERNMENT BUDGETED \$3.7 BILLION
TO CLIMATE CHANGE ACTION SINCE 2000**

**LARGE FINAL EMITTERS (INTENSIVE ENERGY USERS)
OVERALL REDUCTION TARGET 45 MT**

**CANADIANS ASKED TO REDUCE GHG EMISSIONS BY
ONE TONNE PER PERSON, PER YEAR**

**2005 BUDGET ANNOUNCED \$1.8 BILLION TO
QUADRUPLE WIND POWER OVER NEXT 15 YEARS**

**ANNUAL RELEASE OF TOXIC SUBSTANCES REDUCED BY
TWO-THIRDS TO 1,100 TONNES SINCE 1992**

**EMISSIONS OF MERCURY, LEAD, CADMIUM
AND DIOXINS AND FURANS DOWN
65 TO 75% FROM 1990 TO 2003**

**INTERNATIONAL ENERGY AGENCY EXPECTS WORLD
ENERGY DEMAND TO GROW BY ABOUT 60% BY 2030**



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