Negotiating the Climate

Canada and the International Politics of Global Warming

A Report on Key Issues at the Sixth Conference of the Parties (COP6) to the United Nations Framework Convention on Climate Change (UNFCCC)

COMMISSIONED BY

THE DAVID SUZUKI FOUNDATION

NOVEMBER 2000

Author

Cathy Wilkinson, B.A., is a Senior Associate with Global Change Strategies International (GCSI), a Canadian firm providing strategic policy, economic and scientific advice to a range of government, private sector and non-governmental clients on climate change and other global environmental issues. Ms. Wilkinson joined GCSI in October 1998, after serving as policy advisor on climate change to two federal Environment Ministers. In this capacity, she served on the Canadian delegation to a number of international and federal-provincial meetings, including the negotiation of the Kyoto Protocol in December 1997. She has acted as a consultant to the U.S. based Pew Charitable Trusts on Canadian boreal forest issues. Her professional experience also includes work for the Canadian Environmental Network and the Canadian Council for International Co-operation on a range of international and domestic environmental issues.

Contributor

Stephanie Cairns, B.A., M.Sc., is an Associate with the Ottawa-based consulting firm Stratos. She joined Stratos in January 1999, after serving as an advisor on strategic policy in the Prime Minister's Office. She also acts as Senior Policy Advisor to the Pembina Institute, an environmental think-tank. Recent climate change projects she has worked on include an action manual for the Mining Association of Canada, development of a climate change strategy for the Central and Eastern European branch of CIDA, and evaluations of the certified emission reduction potential for renewable energy developments. Her background includes work as the sustainable development analyst for the Liberal Caucus in the House of Commons, and senior staff positions with the Canadian Environmental Network and Friends of the Earth International.

Acknowledgements

The following individuals kindly reviewed the draft report, offering many useful comments and suggestions:

Dr. James P. Bruce, Senior Associate, Global Change Strategies International
John R. Dillon, Vice President, Environment and Legal Council, Business Council on National Issues
Bob Page, Vice President, Sustainable Development, TransAlta Corporation
Andrew Pape, Director, Eco-Efficiency Programs, Pembina Institute for Sustainable Development
Professor John Robinson, Director, Sustainable Development Research Institute, University of British Columbia
Chris Rolfe, Staff Lawyer, West Coast Environmental Law
Doug Russell, President, Global Change Strategies International
Victoria I. Kellett, Project Manager, International Institute for Sustainable Development

Special thanks to staff and volunteers at the Foundation for reviewing and editing the material.

David Suzuki Foundation
2211 West 4th Ave., Suite 219
Vancouver, BC, Canada V6K 4S2
Tel: (604) 732-4228
Fax: (604) 732-0752
email: solutions@davidsuzuki.org
www.davidsuzuki.org

ISBN 0-9680639-5-0

TABLE OF CONTENTS

Chapter 1 Introduction 1

Chapter 2 Why worry about climate change? 2
Human Sources of Greenhouse gas emissions *(side-bar)* 2
The Intergovernmental Panel on Climate Change *(text box)* 2
Economic costs *(text box)* 3
Multiple Benefits to Action *(text box)* 4

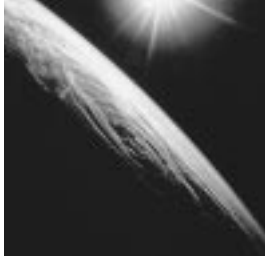
Chapter 3 Global Framework for Action 5
Background on The United Nations Framework Convention on Climate Change and The Kyoto Protocol 5
Ultimate Objective of the UN Climate Convention *(side-bar)* 5
Underlying Issues and Negotiating Dynamics 7
Chronology of Key Events and Commitments *(table)* 7
Negotiating Blocs and Key Actors *(side-bar)* 8

Chapter 4 Focus on Canada 9
Meeting Canadian Targets: The Kyoto Gap 9
Developing a National Climate Change Strategy 10
Canadian Sources of Greenhouse Gas Emissions *(side-bar)* 10
Underlying Issues and Negotiating Dynamics for Canada 11

Chapter 5 Issues to watch at the UN Climate Summit in The Hague 13
Issue 1: The Kyoto Mechanisms 14
Issue 2: Land Use, Land Use Change and Forestry ("Sinks") 17
Issue 3: Compliance 20
Issue 4: Developing Country Issues 21

Chapter 6 Achieving global consensus – what will it take? 24
Key Positions of Negotiating Blocs and Actors *(text box)* 25

Notes 27
Resources and References 28
Glossary 29



1

Introduction

"Humanity is conducting an unintended, uncontrolled, globally pervasive experiment whose ultimate consequences could be second only to nuclear war."
Conference Statement, 1988 World Conference on the Changing Atmosphere, Toronto

Climate change is "… the greatest challenge facing the world at the beginning of the century."
Davos World Economic Forum 2000

The sixth Conference of the Parties (COP6) to the United Nations Framework Convention on Climate Change will be held November 13-24, 2000 in The Hague, Netherlands.

This meeting marks a critical point in the international response to climate change. It is the first major political milestone since the 1997 Kyoto Conference, when industrialized countries accepted legally binding emission reduction targets for the first time. It comes at a time when international consensus on the science of climate change is growing, and early impacts are becoming increasingly apparent around the world.

A successful meeting at COP6 would revitalize the international climate change negotiations and could set the stage for ratification and entry-into-force of the Kyoto Protocol. It would provide momentum for important domestic policy choices leading to meaningful reductions in greenhouse gas emissions. Finally, political agreement in The Hague will send a signal to business that environmental resource and human health costs must be accounted for in their corporate bottom lines.

The meeting may also re-focus attention on the ultimate objective of the 1992 United Nations Framework Convention on Climate Change – preventing dangerous human interference with the climate system. This will require action far beyond what is currently in the Protocol, and it underlines the importance of promoting early action to begin fundamental transformations in our patterns of energy production and use.

This document is a guide to key issues at COP6. It introduces climate-related science, the history of international negotiations on climate change, and the underlying issues and context for Canada's negotiating positions. It offers detailed analysis of the most critical issues on the agenda for The Hague, and offers a framework for monitoring and evaluating progress from COP6. This document does not make recommendations on policy issues. However, an accompanying position paper by the David Suzuki Foundation outlines the potential environmental implications of certain policy choices, and offers a series of recommendations for negotiators at COP6.

2

Why worry about climate change?

Human sources of greenhouse gases

Between 1850 and 1998, approximately 270 Gigatonnes (Gt) of carbon dioxide (CO_2) were emitted into the atmosphere from fossil fuel burning and cement production. Approximately 136 Gt were emitted as a result of land-use change, primarily from forests. About 43 per cent of the total emissions over this time have been retained in the atmosphere. The remainder, approximately 230 Gt, is estimated to have been absorbed in approximately equal amounts by oceans and terrestrial ecosystems.

—Adapted from Intergovernmental Panel on Climate Change, Special Report on Land Use, Land Use Change and Forestry.

The global climate system is critical to sustaining life on earth. Without naturally occurring greenhouse gases (such as water vapour, carbon dioxide and methane) trapping the heat from the sun, the average global temperature would be 33 degrees Celsius lower than it is today, making life as we know it impossible. This process is known as the greenhouse effect.

There is now clear scientific evidence that human activities have caused concentrations of greenhouse gases to rise significantly over the last two hundred years, fundamentally changing the composition of the atmosphere and damaging its ability to regulate the global climate effectively. Carbon dioxide (CO_2) concentrations have increased by 30 per cent, and methane and nitrous oxide concentrations by 145per cent and 15 per cent respectively.[1] To put the scale of these increases in context, data from ice cores (Figure 1) show that atmospheric concentrations of CO_2 were stable for at least 1,000 years prior to the beginning of the Industrial Revolution.

Rising atmospheric concentrations of greenhouse gases have already begun to change the global climate. Nineteen ninety-eight was the hottest year ever

Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change, known as the IPCC, is the official body providing scientific and technological advice to the Parties to the UNFCCC. Created in 1988 by the United Nations Environment Program and the World Meteorological Organization, it brings together scientists from around the world to assess the best available scientific information on the causes and potential impacts of climate change. The IPCC's Assessment Reports are the most authoritative statements on climate change available; the Second Assessment Report, produced in 1995, involved 75 lead authors and more than 500 other contributors and reviewers from academia and government. The Third Assessment Report, scheduled for completion in 2001, has involved over 30 Canadian scientists, and is expected to strengthen consensus on key issues regarding the causes and expected rate of climate change.

recorded, and was the 20th consecutive year in which the global surface temperature was above normal. Seven of the 10 warmest years on record occurred in the 1990s.[3] There has also been an increase in extreme weather events around the world, as predicted by climate change models.[4]

Scientists expect these trends to continue. Over the next 50 to 100 years, atmospheric concentrations of CO_2 are predicted to double or even triple, leading to global temperature increases of between 1.5 and 4.5 degrees C over a very short period of time.[5] In contrast, during the last Ice Age, the average temperature was just 4-7 degrees C below current temperatures, with this change occurring gradually over 5,000 years.

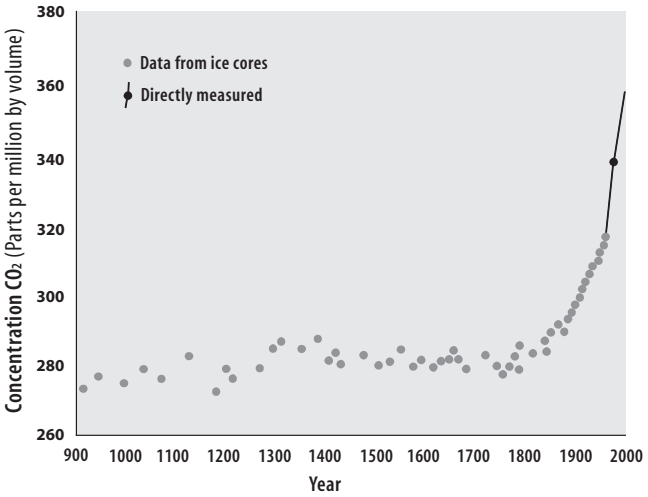


FIGURE 1. DATA FROM ICE CORES SHOWING INCREASES IN CO2 IN THE ATMOSPHERE[2]

Profound effects on human health are expected as a result of climate change. More frequent heat waves, smog episodes, and related consequences such as higher pollen levels will contribute to increases in respiratory illnesses such as asthma and mortality. Infectious diseases are also predicted to spread to new regions.

Global sea levels are expected to rise dramatically. This rise will cause flood damage and loss of coastal areas, particularly in small island and low-lying states. Significant increases in extreme weather events, loss of wildlife habitat, and changes in forestry, fisheries and agricultural production are also projected.

As a northern country, Canada is particularly vulnerable to climate change. Climate models predict that by mid-century, average temperatures could increase in the order of 3 to 5 degrees C in central and northern Canada, and 2 to 3 degrees C in the rest of Canada.[6] While a slight cooling is expected off the coast of Labrador, very high increases are projected for the high Arctic[7] – up to 10 degrees C.

Profound effects on human health are expected as a result of climate change.

Economic Costs of Climate Change

There are significant costs associated with a changing climate. Many of these costs are borne by developing countries, who have little capacity to prepare and adapt to the effects of climate change. Worldwide, climate-related disaster losses have increased from approximately $5 billion in the mid- 1960s to $40 billion (common dollars) in the mid-1990s (Munich Re-insurance 2000). Here in Canada, the numbers are similar: three recent extreme weather events (the 1996 Saguenay flood, the 1997 Red River flood, and the 1998 Ice Storm) necessitated federal disaster relief commitments of $1.4 billion (Emergency Preparedness Canada). While scientists have not confirmed a link between these extreme events and climate change, they are exactly the *types* of weather-related extreme events that are predicted to increase under climate change models.

Recent studies conclude that 45 per cent of wildlife habitat in Canada could be lost or altered by the end of the century as a result of climate change.

Recent studies conclude that 45 per cent of wildlife habitat in Canada could be lost or altered by the end of the century. This could result in a 20 per cent loss of species, such as polar bears, songbirds, and waterfowl, in the Arctic and the boreal forest alone.[8] Canadian forests, fisheries, and physical infrastructure would also be at risk.

Multiple benefits to action

Many climate change policies are available on a "no-regrets" basis: in other words, these strategies make economic, environmental, and health sense whether or not the world is moving towards rapid climate change.

Economists broadly agree that energy efficiency gains of 10-30 per cent can be achieved over the next two or three decades at zero net economic cost or even with net gains. With longer time horizons, which allow a more complete turnover of capital stocks and which give research and development, and market transformation policies a chance to impact the choice of new capital stock, this potential is much higher. Energy efficiency and use of less carbon-intensive fuels and renewable energy have ancillary clean air benefits and associated improvements in human health; these can range from 30 to 100 per cent of emission reduction costs. Other benefits include making industries and countries more competitive in international markets, due to increased efficiency in product design and manufacturing.[9]

While "no-regrets" policies are certainly encouraged, the "precautionary principle" (see page 5) and the level of net damage expected from climate change justify adopting policies that go beyond "no regrets".

3

Global framework for action

The Ultimate Objective of the Framework Convention on Climate Change ...

... is to achieve,

"stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner".

(Article 2, UNFCCC)

The first call for a global framework for action on climate change came in 1988 at the First World Conference on the Changing Atmosphere held in Toronto. Scientists and policymakers from around the world recommended that CO_2 emissions be reduced by 20 per cent from 1988 levels by the year 2005 as an initial goal – a recommendation the Liberal Party of Canada committed to in their 1993 Red Book.

In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) opened for signature at the Earth Summit in Rio de Janeiro. It came into force in 1994 after 50 countries, including Canada, ratified it.

The UNFCCC established the framework for global cooperation on climate change and the ultimate objective for global efforts. Governments of developed nations agreed to "aim to stabilize" their emissions at 1990 levels by the year 2000.

The Convention sets out some guiding principles. The "precautionary principle" says that lack of full scientific certainty should not be used as an excuse to postpone action where there is a threat of serious or irreversible damage. The principle of "common but differentiated" responsibilities recognizes the importance of truly global action, but assigns the lead in reducing greenhouse gas emissions to developed countries. The Convention also commits developed countries to provide "new and additional financial resources" to support developing countries' participation in the Convention, through technology transfer, support for adaptation to climate change, and capacity building.

The adequacy of these commitments was reviewed in Berlin in 1995 at the first Conference of the Parties (COP1) to the Framework Convention. The Second Assessment Report of the IPCC had just been released, concluding that "the balance of evidence suggests that there is a discernible human influence on the global climate." Informed by this Assessment, countries agreed that existing developed country commitments were inadequate, and launched the "Berlin Mandate" negotiations that ultimately led to the adoption of the Kyoto Protocol, which contains additional commitments for developed countries.

Mandatory vs. voluntary commitments in the Kyoto Protocol

The 2008-2012 period is called the "first commitment period" of the Kyoto Protocol. It will mark the first time in the history of the Framework Convention that Parties will have mandatory, legally binding commitments.

The period prior to 2008 is a voluntary commitment period. Developed countries are required to show "demonstrable progress" by 2005. Early action is essential to spur the kinds of investments (technologies and infrastructure) needed to drive long-term reductions, and to ensure that reductions are achieved in the most cost-effective way possible.

The Kyoto Protocol, negotiated in Kyoto, Japan in December 1997, is a new legal instrument under the Framework Convention. It commits developed countries to reduce their collective emissions of six greenhouse gases[10] by 5.2 per cent from 1990 levels by 2012. Each developed country adopted a reduction target under Annex B of the Protocol (the 15 member states of the European Union have a shared overall target). The Protocol also creates three "flexibility" or "market-based" mechanisms to help developed countries meet their domestic emission reduction commitments through international co-operation (see *Kyoto Mechanisms* section). The Protocol will come into effect when 55 Parties ratify the agreement, representing 55 per cent of total Annex 1 emissions in 1990.

Many issues were left unresolved after the basic elements of the Kyoto Protocol were established. Parties met in 1998 to develop the so-called "Buenos Aires Plan of Action" with a two-year deadline. The Plan outlined a framework for finalizing outstanding details under the Framework Convention (including issues of importance to developing countries, e.g. technology transfer, adverse effects and capacity building), and the Kyoto Protocol (the Kyoto Mechanisms, compliance regime, and sinks). Completing the Plan of Action will operationalize key elements of the Protocol.

The Sixth Conference of the Parties (COP6), in The Hague in November 2000, aims to resolve these issues, setting the stage for ratification and eventual entry-into-force of the Protocol. Many countries, especially those in Europe and the developing world, want to see the Protocol come into force by 2002, the

Vocabulary for The Hague

Signature: International agreements are generally opened for signature shortly after they are completed. Signature by countries expresses willingness to continue the treaty-making process, including decisions whether to ratify.

Ratification: Individual countries ratify international agreements (in Canada, by Cabinet approval). In ratifying an agreement, countries agree to be legally bound to its provisions.

Entry-into-force: International agreements enter into force when specified conditions have been met. The Kyoto Protocol will enter into force when 55% of Parties representing 55% of Annex I emissions ratify the agreement.

Conference of the Parties: The "supreme body" governing the Climate Change Convention.

Parties: Upon ratifying an international agreement, countries become "Parties" to that agreement

Annex I Parties: Established under the UNFCCC, composed of industrialized countries and economies in transition (Eastern Europe and former Soviet Union)

Non-Annex I Parties: Developing country Parties under the Convention

Annex B Parties: Industrialized countries and economies in transition adopting legally binding commitments under the Kyoto Protocol.

10th anniversary of the Rio Conference and the Framework Convention. Other countries, including the United States and Canada, prefer to secure maximum flexibility and clear rules to guide implementation of their commitments before ratification occurs.

While COP6 is a critical juncture in the climate change negotiations, it nevertheless is but one of the steps towards implementing the Kyoto Protocol and meeting the ultimate goal of the Convention. Developed countries must show demonstrable progress in meeting their commitments by 2005. Mandatory commitments will come into effect in the first Kyoto commitment period between 2008 and 2012. The Protocol also requires Parties to initiate consideration of commitments for subsequent periods as early as 2005. This could also include, for the first time, participation by developing countries in emission reductions. Ultimately, on the basis of sound science, Parties must decide what level of reductions will be necessary to avoid dangerous interference with the climate system and how best to achieve these reductions.

Ultimately, on the basis of sound science, Parties must decide what level of reductions will be necessary to avoid dangerous interference with the climate system and how best to achieve these reductions.

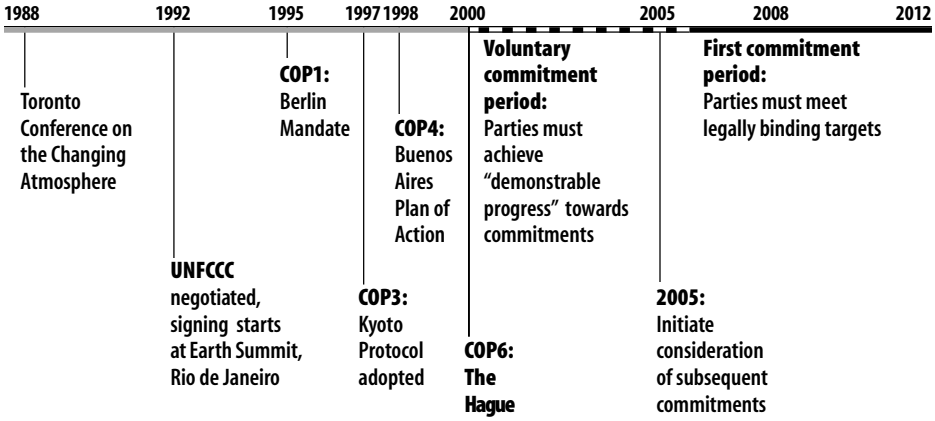
Emission reduction goals under the Kyoto Protocol represent only small steps towards achieving this objective. Scientists at the 1988 Toronto World Conference estimated that reductions of more than 50% of 1988 emissions would ultimately be needed to meet the Convention's objective.

Underlying issues and negotiating dynamics

An understanding of the key players and negotiating dynamics within the international climate change debate assists in comprehending the key elements of both the Framework Convention and the Kyoto Protocol.

The concept of equity is an underlying issue of the debate. Developed countries are responsible for the vast majority – 84 per cent – of historical industrial CO_2 emissions.[11] As a result, many countries, especially those in the developing world, feel that developed countries have a responsibility to make significant reductions in their own emissions, and to provide financial and technological

CHRONOLOGY OF KEY EVENTS AND COMMITMENTS



Negotiating blocs and key actors

European Union (E.U.): 15 Member States within a recognized political entity.

Umbrella Group: Canada, the United States, Japan, Norway, Australia, New Zealand, Iceland, Russia and the Ukraine.

G-77 countries/China: over 130 developing countries ("non-Annex I" under the Convention).

Alliance of Small Island States (AOSIS): coalition of small island states (primarily in the Caribbean and Pacific) that are most vulnerable to sea-level rise.

Organization of Petroleum Exporting Countries (OPEC): 11 oil producing/exporting countries from Africa, Asia, the Middle East and South America.

Latin American countries: a subset of South and Central American countries, including Colombia, Panama, Costa Rica and Chile (not a formal negotiating bloc).

Environmental Integrity Group: launched by Mexico, Korea, and Switzerland in September 2000.

Least Developed Countries Group: mostly small G-77 countries that are unlikely to become significant contributors to greenhouse gas emissions.

Non-Governmental Organizations (NGOs): NGOs have played an important role in the international negotiations since their inception.

support to developing countries to assist them in designing more sustainable futures and higher living standards. Developing countries believe that this approach represents a more equitable distribution of responsibilities for addressing climate change, as it allows them to achieve their development goals while recognizing the need for global action on climate change.

Developed countries, on the other hand, are concerned about the economic and social challenges of fundamentally changing energy production and use patterns, including the implications for international trade and competitiveness. Because of this, most have championed use of the marketplace throughout the negotiations – the ability for countries to meet some of their reduction commitments by buying emission reductions or trade rights to emit from other countries, where reductions can be made at a lower cost (see *Kyoto Mechanisms* section).

The flexibility offered by the Kyoto Mechanisms has traditionally been most important to non-European countries, as the European Union has a certain degree of flexibility by virtue of having adopted a *joint* target. While the *overall* EU target is 8 per cent below 1990 levels, individual country targets differ significantly. As a result, reductions already achieved in Germany and the United Kingdom are enabling other countries, such as Portugal and Greece, to significantly *increase* their emissions above 1990 levels.

Countries such as the U.S., Japan, and Canada have also argued that the lack of emission reduction commitments in developing countries will constitute an unfair trade advantage. They point to the projections that emissions from developing countries are expected to more than double over the next 30 years[12] – ultimately surpassing those of developed countries – making their participation essential to meeting the ultimate objective of the UN Framework Convention.

These dynamics will influence the negotiations at COP6 and beyond. For instance, developing countries will continue to push for strong rules to ensure that developed countries make real progress in reducing their emissions, while advocating for increased support in the areas of technology transfer and capacity building. Developed nations, on the other hand, can be expected to continue promoting flexible ways of meeting their commitments, through the use of emissions trading, carbon storage, and other mechanisms.

4

Focus on Canada

"As we enter a new century, we live in a global village. That is why the issue of climate change and global warming is so important. If we really care about the next century, we, as a planet, must take action ... We need a solution that will help reduce global warming. A solution that Canadians can be proud of."
Prime Minister Jean Chretien, 1997

Canada carved out an early role as a strong proponent for international action on climate change. In 1988, Canada hosted the World Conference on the Changing Atmosphere, held in Toronto. This seminal gathering of experts from 46 countries called for an international framework convention on climate change.

Canada was also among the first nations to sign and ratify the UNFCCC in 1992. Canada signed the Kyoto Protocol in April 1998, but a decision on ratification is not expected until after COP6, when many rules and outstanding issues are clarified. Following Canadian ratification, the Protocol and its emission reduction targets would become binding on Canada when a sufficient number of other Parties also ratify, as established in the Protocol's threshold for entry-into-force.

Meeting Canadian targets: the Kyoto Gap

Canada's target under the Kyoto Protocol is to bring greenhouse gas emissions down to 6 per cent below 1990 levels in the period between 2008 and 2012 – an annual emission target of 565 megatonnes CO_2 equivalent. The most recent inventory, for 1997, showed emissions of 682 Mt – 13 per cent higher than the 1990 level of 601 Mt. Emissions are projected to be 764 Mt by the year 2010, under a business-as-usual scenario that takes into account policies and programs in place as of 1999. To achieve our Kyoto Protocol target, average annual emissions in the 2008-2012 period will need to be reduced by 199 Mt to 565 Mt – a 26 per cent reduction (Figure 2). By the year 2020, if no further policies or actions are taken, emissions are expected to rise 41 per cent above 1990 levels. This is called the "Kyoto Gap".[13]

Every province and territory is expected to increase its emissions over the 1990-2010 period, ranging from Quebec with an 11 per cent increase to Alberta and Saskatchewan with 40 per cent increases. Strong economic growth, associated growth in demand for electricity, a surge in fossil fuel exports, and

Canadian sources of greenhouse gases[14]

Canada's relative share of the six greenhouse gases controlled under the Kyoto Protocol in 1997 (in CO_2 equivalents):

- **Carbon dioxide (CO_2), 76 per cent**: released through the burning of fossil fuels, deforestation, and industrial processes such as cement production.
- **Methane (CH_4), 13 per cent**: results from activities such as livestock cultivation, biomass burning, natural gas delivery systems, landfills and coal mining.
- **Nitrous Oxide (N_{20}), 9 per cent**: released mainly from the application of nitrogenous fertilizers and manure in agriculture, and from the combustion of fossil fuels and wood.
- **Perfluorocarbons (PFCs), 0.9 per cent**: emitted in aluminum production.
- **Sulfur Hexafluoride (SF_6), 0.2 per cent**: emitted in magnesium production.
- **Hydrofluorocarbons (HFCs), 0.1 per cent**: used as coolants in refrigeration and air conditioning.

mounting travel and freight transportation all underlie this increase. Direct emissions from the fossil fuel sector are forecast to grow by 64 per cent in the same period, from transportation by 34 per cent, and from electrical generation by 25 per cent. Emissions from the industrial sector are forecast to grow by 10 per cent, a pace modified by steady progress in the energy intensity of production over the last decade.[15]

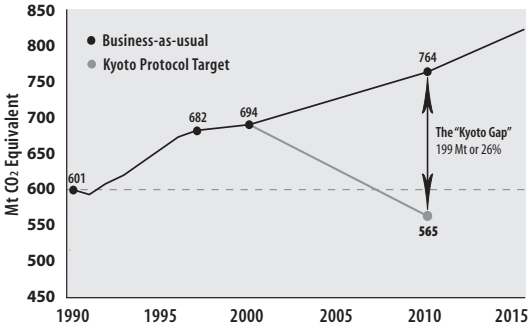


FIGURE 2. CANADA'S BUSINESS-AS-USUAL EMISSIONS PROJECTION AND THE KYOTO PROTOCOL

SOURCE: National Climate Change Process, Analysis and Modeling Group, *Canada's Emissions Outlook: an Update*, December 1999.
NOTE: Does not include effects of 2000 National Implementation Strategy.

Developing a National Climate Change Strategy

The size of the Kyoto Gap shows that Canada is not on track to meet its Kyoto obligation. The OECD commented in September, 2000 that, "much more concrete action is needed ... With a government plan forthcoming only later in the year, it will be very difficult (for Canada) to meet the Kyoto Protocol targets agreed to in 1997."[16] This responsibility lies with the provinces as much as with the federal government; yet a recent study concluded that "most provincial governments have done very little to protect the climate. While the federal government has done far less than it should to address climate change, its efforts put provincial governments to shame."[17]

Work on a Canadian climate change strategy began shortly after ratification of the UNFCCC in 1992, with a stakeholder-based policy development process. The National Action Program on Climate Change was approved in 1995 by federal, provincial, and territorial Ministers of Energy and Environment. But a 1998 audit by the Commissioner on Environment and Sustainable Development concluded that "... many of the key elements necessary to manage the implementation of Canada's response to climate change are missing or incomplete ... the steps ... need to be substantially rethought."[18]

Following the signing of the Kyoto Protocol, a new approach was initiated. In 1998, Canada's Energy and Environment Ministers established sixteen "Issue Tables" comprised of stakeholders and experts to develop options for reducing greenhouse gas emissions on a sector-by-sector basis. Their advice has informed the development of Canada's National Implementation Strategy, which will be realized through a series of three-year business plans. The first of these plans applies to a period Canadian officials describe as "action under uncertainty" – the period prior to Canada's decision on ratification.

In early October 2000, the federal government released *Action Plan 2000*, its contribution to this first business plan under the National Implementation Strategy. The $500 million Plan estimates that it will reduce emissions by 65 Mt during the 2008-2012 commitment period, about a third of the reductions necessary. The Plan introduces no new regulatory measures, taxes, or domestic emission trading systems. It relies instead on supporting projects in other countries for Canadian credit; utilizing forest and agricultural sinks; promoting technology development, innovation, and adoption; leading by example within government operations; voluntary efforts with industry; and public education. It is founded on a partnership approach, and successful achievement of these reductions will require the strong and willing involvement of provincial and territorial governments, municipalities, industry and others – a condition that is far from assured, as shown by Ontario's refusal to sign onto the First National Business Plan released in October 2000.

Many experts are recommending a stronger approach to reducing greenhouse gas emissions using methods that also have positive economic effects, or that have positive environmental and health benefits. For example, improvements in energy efficiency reduce operating costs for industries, businesses, institutions, and households, and make the economy more productive and competitive. Improved municipal transit systems improve the quality of life of residents, reduce congestion, and attract business investment. Switching to lower carbon fuels and electricity sources such as natural gas, wind, and fuel cells can also reduce the air pollution that now causes up to 16,000 premature mortalities and tens of thousands of respiratory ailments a year in Canada.[19]

Early leadership providing solutions to climate change can create new business opportunities and jobs related to innovative products for which Canada is a world leader, such as efficiency technologies, ethanol and fuel cells, highly efficient home and building designs, and public transit systems. Thus, action on climate change will help address other important priorities, such as providing cleaner air for Canadians, creating more healthy, sustainable communities, and increasing the competitiveness and productivity of the Canadian economy.

Principles for Action

In 1997, Canada's First Ministers established two basic principles for action on climate change:

- no one region of the country should be asked to bear an unreasonable burden;
- emission reductions must be achieved in ways compatible with sustained economic growth and increased Canadian competitiveness.

Underlying issues and negotiating dynamics: Canada

Canada has traditionally played a leadership role internationally in the negotiation of global environmental agreements. However, the fact that COP6 is taking place in the middle of a federal election is likely to result in Canada playing a significantly less vocal role in the negotiations as a whole.

Nevertheless, like every country, Canada's approach to domestic emission reductions and its negotiating positions going to The Hague reflect the dynamics of several political, economic, and technical factors:

While Canada will use the Kyoto Mechanisms as part of its mitigation efforts, the government has repeatedly stated its intention to achieve the majority of its emission reductions domestically.

1. *Shared jurisdiction* for environment between the federal and provincial governments requires the full participation and cooperation of all governments in drafting a National Implementation Strategy. While the federal government has responsibilities for international treaties and can use its tax and spending powers to encourage more climate-friendly development and behaviour, provinces have jurisdiction in vital areas such as energy and utility regulation, forestry and land use, transport, and urban planning.
2. For a variety of reasons, Canada's economy is relatively *energy-intensive* with high levels of greenhouse gas emissions. The *marginal cost of abatement* of greenhouse gases is higher in Canada than in many other countries, including the United States.
3. Canada's *export-based economy* also influences our positions in several ways. Commodity sectors that are price takers in international markets fear being competitively disadvantaged if energy costs rise in Canada but not in the countries where their competitors operate. Canada's high level of trade with the United States and small market size makes government reluctant to unilaterally adopt higher efficiency standards for traded goods such as vehicles and appliances.
4. Finally, Canada's *forests and lands* may temporarily absorb as much as 20 Mt of CO_2 equivalent from the atmosphere, with some land use activities acting as net sources of greenhouse gases and others as net sinks.[20] Measurement of net carbon dioxide flux from land use change and forestry activities is still subject to scientific uncertainty, and the carbon accounting rules for forestry and land use changes are still under negotiation. These rules will determine the extent to which Canada might use sinks to meet its Kyoto targets, and the extent to which it must use other approaches.

Canada's international negotiating positions reflect all of the circumstances and conditions outlined above. The government's objective has been to negotiate an international deal that will:

- ensure a level playing field with trading partners and competitors (particularly the United States);
- minimize the cost of meeting reduction targets; and
- maximize the economic and trade opportunities for Canadian businesses.

The two latter objectives in particular underlie strong Canadian support for full flexibility in the Kyoto mechanisms and maximum eligibility of sinks (see *Kyoto Mechanisms* and *Sinks* section). While Canada will use the Kyoto Mechanisms as part of its mitigation efforts, the government has repeatedly stated its intention to achieve the majority of its emission reductions domestically because of the economic, competitiveness and clean air benefits that come with this approach.

5

Issues to watch at COP6

The 1998 Buenos Aires Plan of Action agreed to at COP4 outlined a number of issues related to both the Kyoto Protocol and the Framework Convention on Climate Change. Issues on the agenda for COP6 related to the Protocol include:

- The rules for use of the *Kyoto Mechanisms* (also known as "flexibility mechanisms"; these include the Clean Development Mechanism, Joint Implementation and International Emissions Trading);
- Scientific and policy issues related to *Land Use, Land Use Change and Forestry* (i.e. the role of so-called carbon "sinks");
- The *Compliance regime* for the Protocol, including consequences for non-compliance.

Issues relating to the Convention primarily address meeting the needs of developing countries. Grouped here under the heading *Developing Country Issues*, these include capacity-building, technology transfer, and financial support.

The negotiating dynamics and possible agreement in The Hague are likely to revolve around two issues:

- The concept of *environmental integrity*, or ensuring that the environmental goals of the Protocol are met;
- *Flexibility*, or the ability for countries to meet their reduction commitments in the most cost-effective ways possible, including the use of international projects or emissions trading.

The negotiators' challenge is to ensure the environmental integrity of the Protocol, while providing flexibility in how Parties meet their commitments. The ultimate "deal" in The Hague will reflect the extent to which developed countries (particularly the Umbrella Group – see page 8) agree to address issues of concern to developing countries, in exchange for early, comprehensive access to the so-called "flexibility mechanisms" under the Protocol. Much of this debate will center on the Clean Development Mechanism, which developing countries increasingly see as a potential vehicle for achieving their objectives of increased investment, technology transfer and capacity building.

Analysis by several Canadian and international NGOs suggests that, depending on the outcome of the negotiations, Annex I emissions could be allowed to *increase* by 12 to 15 per cent above 1990 levels, rather than the 5 per cent *reduction* that the Protocol requires by 2010.

Additionality and hot air

The principle of additionality is at the root of concerns regarding so-called "hot air". Hot air credits were created when the Protocol assigned targets to some countries that were higher than their projected emissions as a result of unrelated events or activities. For example, Russia's commitment under the Kyoto Protocol is to stabilize emissions at 1990 levels, while their actual 1995 emissions were 32% below this level because of economic collapse. Many Central and Eastern European countries have a similar situation. The question of whether or not these credits should be eligible for trading on the international market remains an issue of some debate within the negotiations.

Decisions on many issues could significantly impact the overall environmental integrity of the agreement. Analysis by several Canadian and international NGOs suggests that, depending on the outcome of the negotiations, Annex I emissions could be allowed to *increase* by 12 to 15 per cent above 1990 levels, rather than the 5 per cent *reduction* that the Protocol requires by 2010.[21] Thus, these "loopholes" would effectively reverse the environmental intent of the agreement, and would be inconsistent with the overall objective of the Convention.

The following sections provide more detailed background on the key issues on the table for COP6, as well as the dynamics and concerns influencing the negotiations in each of these areas. Canada's traditional positions on particular issues are also highlighted.

Issue 1: Kyoto Mechanisms

The creation of the Kyoto Mechanisms was integral to the final agreement in Kyoto: many Annex I countries adopted more stringent targets in return for access to mechanisms to enable them to meet their emission limits more cost effectively.

The challenge for negotiators at The Hague will be to develop rules for using the mechanisms that preserve the environmental integrity of the agreement, while ensuring that transaction costs are not so high as to discourage use of the mechanisms. This is particularly true in the case of the Clean Development Mechanism (see below), which has the potential to contribute to the sustainable development priorities of developing countries.

WHAT THE PROTOCOL SAYS

The Kyoto Protocol establishes three mechanisms that allow countries to use the market to reduce the cost of meeting their emission limits:

- Joint Implementation (JI – Art. 6): which provides for the transfer of emission reductions between two Annex I parties;
- International Emissions Trading (Art.17): which provides for the transfer of emission rights between two Annex I parties;
- the Clean Development Mechanism (CDM – Art.12): which provides for the transfer of emission reductions between an Annex I and a non-Annex I country.

The CDM is the only one of these three mechanisms that can generate credits between the year 2000 and the first Kyoto commitment period of 2008-2012, and that explicitly involves both developed and developing countries. Many developing countries see the CDM as a vehicle to inject new investments into their economies, a perception fueled by its origins. It was proposed initially by Brazil as a clean development "fund" financed by fines paid by developed countries not in compliance with the Protocol.

Operationalizing the CDM is a key element of the Buenos Aires Plan of Action, and will be central to the agenda at The Hague.

KEY OUTSTANDING ISSUES

A broad range of technical issues related to the mechanisms require political resolution in The Hague. Some relate to all three mechanisms, while others are specific to one or more mechanism.

Additionality

The concept of additionality is related to ensuring environmental integrity for the mechanisms, particularly the CDM and JI (which relate to specific projects). The provisions governing both of these mechanisms clearly state that emission reductions generated by projects must be *additional to reductions that would otherwise occur* in the absence of the project activity.

Determining additionality requires solid *project baselines*. These baselines represent a hypothetical reference case, or "business-as-usual" projection of the estimated level of greenhouse gas emissions that would have been emitted in the absence of the CDM project. Negotiators are faced with a host of difficult issues in determining how to establish project baselines, as well as guidelines for monitoring and verifying reductions upon completion of projects.

Supplementarity

The question of supplementarity relates to all three of the Kyoto Mechanisms. The Kyoto Protocol requires that use of the Kyoto Mechanisms be "supplemental to domestic actions", but does not provide further guidance on how this principle should be met.

The EU has promoted a quantitative cap of 50 per cent on the percentage of a Party's emission reductions that could be met through use of the mechanisms; the Umbrella Group and some Latin American countries have strongly resisted quantitative caps. The G-77 and China believe that Annex I commitments should be reached primarily through domestic means. While Canada has stated repeatedly that it intends to make the majority of its emission reductions domestically, it has also resisted calls for a quantitative cap on the mechanisms.

Clean Development Mechanism: project eligibility

Article 12 defines two goals for the CDM: helping Annex I countries meet their emission reduction commitments and supporting the sustainable development goals of developing countries. While most countries agree that the "host" country for a project should ultimately decide which projects meet their sustainable development needs and priorities, significant debate continues on which *kinds* of projects should be eligible for the CDM. The two most contentious debates concern the eligibility of nuclear projects and carbon sinks (see *Land Use, Land Use Change and Forestry*, page 17).

Vocabulary for The Hague

Fungibility: the extent to which credits generated from any of the Kyoto mechanisms may be traded in the international emissions trading market.

Supplementarity: the requirement that use of the Kyoto mechanisms be "supplemental" to domestic action.

Additionality: the requirement that reductions generated by the CDM or JI be "additional" to those which would have occurred anyway.

Baselines: the "business as usual" emissions scenario before emission reduction projects or activities.

Verifiability: a series of requirements to ensure that emission reduction activities are "real and measureable".

Liability: how responsibility is shared for any failure of projects to deliver expected reductions.

Things to watch:
CDM Executive Board

COP6 is unlikely to resolve all issues related to the implementation of the CDM. As such, the role and composition of the Executive Board governing the mechanism will be vital. If the Executive Board ends up with powers to "revise and amend the areas in which CDM project activities can be undertaken and the types of project activities that can be included", the Board could have the power to determine whether or not major activities – including nuclear power and sinks – will be included in the CDM.

Canada has been a strong advocate for the inclusion of nuclear projects in the CDM, and has shown great political-level interest in exporting CANDU reactors for credit. Canada has traditionally argued that all technologies will be needed to reach the Kyoto target and that no technology should be excluded. However, the prospect of nuclear projects in the CDM has been highly contentious with small island states, OPEC nations, and several members of the European Union (notably Germany, the Netherlands and Denmark). These nations believe that nuclear projects are inconsistent with the environmental integrity of the Protocol, given the economic, environmental and safety performance of nuclear technology over the last 30 years.

The debate at COP6 will be whether the CDM should establish a list of eligible projects (i.e. a positive or inclusion list), or alternatively a list of ineligible projects (a negative or exclusion list). A third alternative is to exclude nuclear projects directly without establishing a list. China, India and Brazil, who have been silent on this question to date, will likely have significant influence over the final agreement on this important issue.

International emissions trading: participants and assigning liability

Two issues related to the international emissions trading regime could block progress at COP6. The first is participation by "legal entities" (i.e. the private sector) in the trading system. Industry groups feel strongly that they need direct access to the trading system in order to reduce their emissions effectively and with manageable transaction costs, an approach supported by both the EU and the Umbrella Group. Developing countries, on the other hand, believe that trading should be restricted to Parties only, despite the limitations this may place on available capital.

The second and potentially more significant issue relates to the liability regime for the international trading system. The purpose of the liability regime is to reduce the risk that individual countries will "over-sell", or sell emission credits that they in fact need to meet their own emission limits. Clearly assigning liability is critical to both the environmental integrity and proper functioning of the carbon trading market, as a faulty system could encourage Parties to either buy from suspicious sources, or sell credits far beyond their potential.

Negotiating blocs have advanced a number of different approaches to liability. The Umbrella Group, including Canada, has supported "originating Party liability", which would make the country selling credits responsible for any oversold credits. However, this type of system generally depends on a strong compliance regime to provide an incentive to originating parties to meet their legal obligations in advance of selling credits (see page 20 for discussion of compliance).

The EU has proposed a "mixed liability" system, whereby the purchaser of emission credits would not be allowed to use oversold credits until the originating country has come back into compliance with the Protocol. An additional proposal is to establish a "Commitment Period Reserve", whereby a Party can sell credits only if emission projections indicate that these credits are surplus to that country's needs. All other credits would be held in reserve to guard against overselling. This proposal appears to be gaining support and may provide a useful compromise in the Hague.

Issue 2: Land use, land use change and forestry ("sinks")

Forests, soils and other vegetative cover play an important role in the overall carbon cycle. As such, both the Framework Convention and the Kyoto Protocol recognize that there are two ways to avoid increasing carbon dioxide concentrations in the atmosphere:

- reducing emission *sources* (i.e. fossil fuel burning and deforestation), and
- enhancing carbon *"sinks"* (by storing or sequestering additional carbon in sinks and reservoirs, including forests, soils, and vegetation).

Enhancing carbon sinks can, in the short-term, help prevent CO_2 concentrations from increasing in the atmosphere, and can also provide benefits to biodiversity, soil productivity and water quality. However, if not properly designed, the sinks provisions of the Protocol could create "windfall credits" or "loopholes" for countries seeking to avoid or delay making the more fundamental shifts in energy and technology use needed to ultimately achieve the goal of the Convention.[22] Successful resolution of the "sinks" issue will be a critical part of the overall deal at COP6.

Successful resolution of the "sinks" issue will be a critical part of the overall deal at COP6.

WHAT THE PROTOCOL SAYS

Article 3 of the Kyoto Protocol establishes a minimal framework for sinks-related activities:

- Article 3.3 allows Parties to use specific human-induced land use changes (reforestation, deforestation, and afforestation) since 1990 in meeting their commitments under the agreement;
- Article 3.4 enables Parties to negotiate inclusion of additional activities, such as activities related to agricultural soils.

Sinks-related activities are eligible for two of the Kyoto Mechanisms – international emissions trading and Joint Implementation. However, no specific provision for sinks was included in the Clean Development Mechanism (Article 12).

Global carbon cycle

Carbon is absorbed and emitted continuously by the atmosphere, the oceans, and the biosphere: soil, plants and trees on the earth's surface. According to the IPCC, the terrestrial biosphere is capable of sequestering (storing) more carbon than it does currently. While this does not represent a permanent solution to climate change, enhancing carbon sinks can, in the short-term, help slow the rate of increase of atmospheric concentrations of carbon dioxide.

KEY OUTSTANDING ISSUES

There are a wide range of policy and technical issues requiring political resolution in The Hague. Two issues relate to Article 3 of the Protocol: definitions, and "additional activities". A third issue is the eligibility of sinks-related projects in the CDM (Art. 12).

Maintaining the environmental integrity of sinks-related activities in the Protocol will also require a meaningful carbon accounting system. The IPCC, in its Special Report on Land Use, Land Use Change and Forestry, notes that "... a full carbon accounting system would consist of a complete accounting for changes in carbon stocks across all carbon pools (or reservoirs)."[23]

As with a number of diffuse sources of greenhouse gases, methods to accurately measure sinks are uncertain. For example, the Sinks Issue Table, established under Canada's national climate change process, noted that further work is needed to get within even a 20 per cent level of confidence in Canada.[24] In addition, few developed and no developing countries currently monitor carbon storage levels in forests and soils. Developing countries in particular will require significant support in designing and implementing such systems. Parties will need to ensure that accounting methods are transparent, verifiable, and consistent with the environmental integrity of the Protocol.

Definitions

There are a number of key concepts outlined in Article 3 that were not defined in Kyoto (see side box). The way in which these terms are ultimately defined will have significant impacts on the size of eligible sinks in developed countries.

One debate in this area relates to the Protocol requirement that sinks-related activities must be *directly human-induced* to be eligible under Article 3.3. While some activities, such as planting trees on land formerly used for agricultural purposes, clearly qualify as human activities, others (such as forest fire suppression) are less clear.[25]

Canada has supported a fully comprehensive approach, whereby countries would have full access to credits arising from any land use change. This position would enable Canada to collect any "windfall" credits created by the Protocol's eligibility criteria, although it would also expose the country to any downside debits (for instance, if and when forests burn and change from being carbon *sinks* to carbon *sources*). The precise implications of this approach are not clear, although a number of NGOs have raised concerns regarding the environmental integrity of this approach.

Vocabulary for The Hague

Deforestation: generally defined as the conversion of forest land to non-forest land.

Afforestation: defined by the IPCC as the planting of new forests on lands that historically have not contained forests.

Reforestation: defined by the IPCC as planting of forests on lands which have previously contained forests but have been converted to some other use.

Additional Activities (Article 3.4)

Article 3.4 allows Parties to add new sinks-related activities to the Protocol. Debate in this area has focused on several issues: which activities should be added, when they should become eligible, and most importantly, what limitations should be placed on the use of these credits, particularly in the first budget period.

Negotiations on new activities have focused mainly on the eligibility of agricultural soils. Canada has been a strong promoter of this cause since Kyoto.

However, the central debate on sinks in The Hague is likely to revolve around limitations on the use of sinks. Two main options have been tabled over the course of preliminary negotiations:

- delaying inclusion of additional activities until the second commitment period (a position supported by the European Union), or
- some kind of threshold level or discount on sinks-related credits, as proposed by the United States and other countries.

Canada, on the other hand, has called for no limitations on the use of sinks, even within the first commitment period. During the last round of negotiations, Canada took a solitary stance among all Parties, stating that comprehensive inclusion of sinks in Article 3.4 was a bottom line issue for Canada. This has been the source of significant criticism by NGOs and other Parties to the negotiations.

Sinks: Eligibility for the Clean Development Mechanism

The eligibility of sinks-related projects under the Clean Development Mechanism will be negotiated in The Hague.

A critical issue related to sinks in the CDM is the permanence of credits generated by such projects. While the permanence of carbon storage is an issue for any sinks-related activity, it is particularly important in the context of the CDM, as CDM projects effectively increase the amount of greenhouse gases developed countries are allowed to emit. If a sinks project within a *developed country* becomes a source of emissions for some reason, it is likely to be turned into a debit in that country's inventory (provided technical issues are properly resolved in the Hague). In the case of a *CDM project*, however, loss of permanent storage would increase concentrations of CO_2 in the atmosphere – while still giving emission credit to the project's proponent.

While a number of developing countries – particularly African nations and countries in Latin America – have voiced support for including sink-related projects, the official G-77 and China position has traditionally opposed sinks in the CDM. However, the G-77 and China appear to be finding new common ground on sinks-related issues,[26] opening the door for possible movement and consensus at COP6.

A report by the U.S.-based **Pew Center on Global Climate Change** outlined key issues for negotiators related to carbon sinks. These include:

Permanence: ensuring that, if activities succeed in removing CO_2 from the atmosphere and storing it in forests and soils, carbon remains sequestered;

Saturation: determining the point at which it will no longer be possible to increase the rate of carbon accumulation in the biosphere;

Verifiability: how to accurately measure and confirm that activities have increased carbon stocks in the biosphere;

Leakage: how to ensure that success in protecting or increasing carbon in one area will not hasten release of carbon elsewhere.

A special report prepared by the IPCC on Land Use, Land Use Change and Forestry, issued in 2000, provides technical guidance to negotiators on how to address these issues in ways that maintain the intent and environmental integrity of the agreement. Negotiators will debate these and other proposals in The Hague.

Issue 3: Compliance

Since the Kyoto Protocol creates legally binding commitments for developed countries, it requires an effective compliance regime, including rules for demonstrating compliance with the Protocol, and consequences for non-compliance. Establishing a compliance framework that will ensure the overall integrity of the agreement is one of the key elements of the Buenos Aires Plan of Action.

WHAT THE PROTOCOL SAYS

The Kyoto Protocol establishes a minimal framework for compliance:

- Article 18 states that the Conference of the Parties shall approve "appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance ..." No further detail is provided;
- Article 8 establishes a technical review process for "all aspects" of implementation, to be undertaken by expert teams;
- Articles 5 and 7 outline requirements for Parties to inventory, monitor and report on their progress in meeting their commitments under the Protocol.

KEY OUTSTANDING ISSUES

Consequences for non-compliance are crucial aspects of the compliance regime.

Unresolved compliance issues include the scope of the compliance system; the mandate, structure and composition of the compliance body; and most importantly, the consequences for non-compliance. An important transparency issue is whether or not non-governmental organizations or corporations (i.e. non-Parties) will be able to submit implementation questions to the compliance body.

The negotiating text for The Hague proposes the establishment of a compliance body with both a facilitative and an enforcement branch. It is unclear whether this body's mandate would apply solely to the Kyoto Protocol's legally-binding emission reduction commitments, or extend to all aspects of both the Protocol and the Convention such as the provision of financial support and technology transfer to developing countries. This is significant because broad application of the compliance regime could assign penalties to developed countries for a range of things, including insufficient financial support for technology transfer and adaptation in developing counties. This has never existed within the Framework Convention.

Consequences for non-compliance are crucial aspects of the compliance regime, as they will provide important incentives for Parties to meet their commitments under the Protocol and future agreements made under the Framework Convention. The international compliance regime can also send important signals to governments and industry alike about the need to make fundamental changes as early as possible.

The Umbrella Group has pushed for non-punitive consequences for failure to fulfill commitments under the Protocol. In fact, Japan has proposed that there be no binding consequences for non-compliance. The U.S. has suggested

that Parties out of compliance should borrow credits from future commitment periods at a discounted rate and has also proposed a compliance fund where Parties out of compliance would be forced to deposit fines. Canada has always maintained that there should be no financial or trade penalties associated with the Protocol, although it has traditionally supported a range of other compliance tools including borrowing from future commitment periods.

The European Union, supported by the G-77/China, has proposed a more punitive series of measures, including suspension of emissions trading rights, financial penalties and potential trade sanctions. Broadly speaking, it is likely that the compliance regime will evolve over time, beginning with few if any punitive measures in the first commitment period, with more severe penalties being introduced for the post-2012 period.

Issue 4: Developing country issues

The Framework Convention on Climate Change established the concept of "common but differentiated" responsibilities as a key principle for global action on climate change. This principle reflects the need for all countries to be involved in efforts to address climate change, but compels developed countries – those responsible for the vast proportion of historical industrial emissions as well as significantly higher per capita emissions – to act first to reduce greenhouse gas emissions.

The Berlin Mandate (the 1995 agreement that launched negotiations of the Kyoto Protocol) specifically stated that any new legal instrument under the Framework Convention would not create new legal commitments for developing countries. As a result, while the Kyoto Protocol addresses a number of issues of concern to these countries, it does not compel them to limit their emissions.

Nevertheless, developing countries will be instrumental in meeting the long-term objective of the UNFCCC. Developing country emissions are projected to more than double and are expected to represent 50 per cent of the global total before the year 2025. As such, efforts to engage developing countries in capacity building and emission reduction projects through the Clean Development Mechanism will lay important groundwork for longer-term global actions, including "meaningful participation" in the Protocol and subsequent agreements (see side box).

Issues of concern to developing countries under the Framework Convention – including technology transfer, capacity building, adapting to the adverse effects of climate change, and financial support – will be central to any overall agreement at COP6. Many G-77 countries have become increasingly frustrated by the lack of movement on these issues. One of the key trade-offs in the course of the negotiations will therefore be the extent to which consensus on the Kyoto Mechanisms and treatment of sinks is tied to progress on these issues.

Issues to watch: "Meaningful Participation"

Ultimately, *all* countries must act together to achieve the ultimate objective of the Convention and prevent dangerous human interference with the climate system. Despite the fact that legal commitments for developing countries were not part of the Berlin Mandate, a number of developed countries led by the United States have begun to push for "meaningful participation" by developing countries: the adoption of emission limitations of some kind. The United States has stated publicly that it will not ratify the Kyoto Protocol without movement on this issue. As a result, one of the backdrop issues to watch at COP6 will be whether countries begin to discuss the establishment of a new round of negotiations to reach agreement on emission limitations of some kind by all Parties.

Many developing countries, including small island states and African countries, are particularly vulnerable to the effects of climate change, and are looking for both financial and technological support in order to prepare for and adapt to these changes.

WHAT DOES THE PROTOCOL SAY?

Both the Framework Convention and the Kyoto Protocol provide for support to developing countries in responding and adapting to climate change. Operative clauses within the Framework Convention include Articles 4.8 and 4.9, which commit developed countries to "give full consideration to what actions are necessary ... to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of ... response measures". Potential actions noted in this section include funding and the transfer of technology to developing countries, particularly to least developed countries and those most vulnerable to the effects of climate change.

Article 3.14 of the Kyoto Protocol reiterates the commitments outlined in the Convention, and commits Parties to consider further actions to "minimize adverse effects" (including through funding, technology transfer and insurance) at the first meeting of Parties after the Protocol enters into force.

Lastly, the Clean Development Mechanism established under Article 12 has a specific mandate to assist non-Annex I countries in achieving sustainable development.

KEY OUTSTANDING ISSUES

The question of "adverse effects" is at the heart of the debate over the developing country issues. Many developing countries, including small island states and African countries, are particularly vulnerable to the effects of climate change, and are looking for both financial and technological support in order to prepare for and adapt to these changes. However, at the same time, OPEC nations have suggested that they are "adversely affected" – not by climate change per se, but by the associated impacts of efforts to reduce greenhouse gas emissions on their revenues. OPEC, in what is widely perceived to be a stalling tactic within the negotiations, is seeking compensation from developed countries for these effects.

Capacity building is also emerging as a key political issue at COP6. While Parties agree that enhanced capacity is essential to help developing countries prepare and adapt to climate change, there is significant debate over how capacity building should be supported and to what extent. At COP5, Parties asked the UNFCCC Secretariat to develop a draft framework for capacity-building activities; however, progress in elaborating and agreeing on this framework has been slow.

Critical to both of these issues is the amount of money that will be available to developing countries. The G-77 and China are calling for the creation of new funds to support a range of developing country activities, including those outlined above. These funds should be additional to official development assistance and to activities under the CDM. While some countries, including Canada,

have recently allocated new financial resources to capacity development for climate change in developing countries, these are considered by G-77 countries to be both inadequate and too focused on potential credit-generating projects through the CDM.

One proposal which may gain support in the lead-up to COP6 relates to the Article 12 requirement that a "share of the proceeds" from CDM project activities go to support the adaptation needs of vulnerable countries. Developing countries have suggested that this adaptation fee, or levy, be extended to the other two mechanisms under the Protocol, both to increase the overall amount of funding available for adaptation purposes, and to avoid placing the CDM at a competitive disadvantage vis-a-vis the other mechanisms. While developed countries have traditionally resisted this kind of approach (as they believe it will increase transaction costs, make the mechanisms less attractive, and increase overall compliance costs), it may provide a political solution to what promises to be a difficult issue in The Hague.

In general, developing countries and some NGOs believe that most Annex I countries have not paid enough attention to developing country issues, focusing instead on negotiating maximum flexibility related to the mechanisms and carbon sinks. However, the G-77 and China have been increasingly clear that overall progress in The Hague will be conditional on movement on their issues. Therefore, some resolution will be critical for Parties to attain the consensus needed to lay the groundwork for ratification of the Protocol.

Developing country issues: vocabulary

The UNFCCC commits developed countries to provide several types of support to developing countries so that they can address the causes and consequences of climate change. These include:

Financial mechanism: Its role is to transfer funds and technologies to developing countries through grants or concessions, under the guidance of the COP. The Global Environment Facility is "operating" the mechanism on an interim basis. These resources are to be new and additional to Official Development Assistance funds, and meet the agreed full costs incurred by developing countries in meeting their obligations.

Technology Transfer: Developing countries will require access to advanced climate-friendly technologies if they are to limit emissions from their growing economies. The framework for technology transfer is still under debate, with developing countries, led by China, demanding concrete financial commitments outside of Official Development Assistance and the Clean Development Mechanism.

Capacity Building: One aspect of technology transfer, this refers to the development of organizational, managerial and technical skills, policy and regulatory approaches to support the application of new technologies.

Adaptation to adverse effects: This refers to the need for developing countries to prepare for the adverse impacts of climate change, as well as to minimize the negative impacts of response measures (for example, reduced revenue if demand for oil drops).

6

Achieving global consensus: what will it take?

Positions by key negotiating blocs are evolving rapidly, and political momentum is building towards final agreement on a *package* of issues in The Hague.

COP6 represents a critical stage in the evolution of the climate change debate. It offers the international community an opportunity to set the stage for implementing the Kyoto Protocol, and for making progress towards the ultimate objective of the Convention: "**stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.**"

Progress in The Hague should be evaluated according to three key results:

1. The environmental integrity and credibility of decisions taken by Parties;
2. The practicality, transparency and relative simplicity of procedures established under the Protocol;
3. The extent of support for capacity building and technology transfer activities in developing countries.

All three of these principles will influence the willingness and likelihood of Parties to ratify the Protocol. This, in turn, will affect when the Protocol may legally come into force, which many countries hope could happen as early as 2002, the 10th anniversary of the Rio Earth Summit and the adoption of the UNFCCC. It will also influence whether a robust foundation is built to chart a new course towards the deeper cuts and fundamental technology changes which are needed in the longer term.

Positions by key negotiating blocs are evolving rapidly, and political momentum is building towards final agreement on a *package* of issues in The Hague. As such, trade-offs are inevitable, both between developed and developing countries, and between the "Umbrella Group" (which includes Canada) and the

European Union. These trade-offs will be focused, to a large degree, on the Kyoto Mechanisms on the one hand, and developing country issues on the other.

However, it will be critical to ensure that these trade-offs do not compromise the environmental integrity of the overall agreement. Policy choices in The Hague matter, as they will determine whether the international community takes significant steps towards a healthier atmosphere, or whether the original intent of the Kyoto agreement is reversed.

Several Parties will be important to watch during the course of the negotiations. Chief among these is the United States, which currently represents approximately 30 per cent of global CO_2 emissions. The U.S. has clearly stated that it will not submit the Protocol to the U.S. Senate for ratification without

Several Parties will be important to watch during the course of the negotiations. Chief among these is the United States, which currently represents approximately 30 per cent of global CO_2 emissions.

Key positions of negotiating blocs and actors

European Union (E.U.): Traditionally push for coordinated policies and measures to reduce emissions, as well as caps on the use of the Kyoto mechanisms.

Umbrella Group: Wants full flexibility in meeting commitments. This includes "prompt start" for the Clean Development Mechanism as early as the year 2000, minimal constraints on the Kyoto mechanisms, and facilitative rather than punitive approaches to compliance.

Canada: An active member of the Umbrella Group. Among the strongest voices for allowing early and significant use of proposed carbon sequestration ("sink") activities, and eligibility of nuclear projects in the Clean Development Mechanism.

G-77 Countries/China: Want progress on a number of so-called "developing country" issues, particularly enhanced financial support for capacity building, technology transfer, and adaptation to the "adverse effects" of climate change.

Alliance of Small Island States (AOSIS): Prompted by fears of flooding, advocate for early, decisive action to address climate change.

Organization of Petroleum Exporting Countries (OPEC): Oppose progress on reducing emissions for fear of losing markets for oil and gas exports. Seeking compensation for the impacts of response measures on their economies.

Latin American Countries: Are promoting a pragmatic approach to climate change, including early endorsement of market based approaches.

Environmental Integrity Group: Focus attention on the need for maintaining environmental integrity in the Protocol.

Least Developed Countries Group: Primary interests lie in adaptation to climate change, and equitable access to technology and investment benefits flowing from the CDM.

Non-Governmental Organizations (NGOs): Have consistently emphasized the importance of environmental integrity and were instrumental in pushing for legally binding emission reduction commitments. Publish a newsletter – ECO – at all international negotiating sessions that highlights key issues and concerns for negotiators, the media, and the public.

securing "meaningful participation" by developing countries. Pending the outcome of COP6, this may render U.S. ratification unlikely in the short term.

Some European countries are advancing the view that the Protocol could come into force without U.S. ratification. This would, however, require ratification by Russia, making it a potentially influential player in final negotiations.

Regardless of the details of the final agreement at COP6, it will be critical for all Parties to increase their efforts to reduce greenhouse gas emissions. With very few exceptions, OECD countries are failing to change the fundamental upward trajectory of domestic emissions growth. Canada is no exception in this regard. Given that the Protocol requires these countries to show "demonstrable progress" in meeting their targets by 2005, Parties will need to act decisively and quickly to introduce meaningful domestic action plans, and to send signals to industry that governments are serious about meeting their commitments.

In addition, from an ecological perspective, there is a critical need for all countries to turn their minds once again to the ultimate objective of the Protocol. Article 4.2 (d) of the Framework Convention requires Parties to review regularly the adequacy of their commitments "until the objective of the Convention is met". This clause underscores the urgent need for scientists and policy-makers alike to define and avoid dangerous levels of human interference with the atmosphere. This will ultimately require a clear new mandate for negotiations in the future.

NOTES

1 Intergovernmental Panel on Climate Change, Summary for Policy Makers, 1996; and Thompson, A.M., K.B. Hogan and J.S. Hoffman, Methane Reductions: Implications for Global Warming and Atmospheric Chemical Change, Atmospheric Environment, Vol. 26A, No.14, 1992.
2 Intergovernmental Panel on Climate Change, Climate Change 1995, Vol. 1, Technical Summary
3 World Meteorological Organization, Bulletin, Volume 48, No. 3, July 1999
4 D. Easterling and G.Meehl, "Extreme Weather Events on the rise as Greenhouse Gases drive Climate", Science, September 22, 2000.
5 These figures represent a range of model projections of future climate.
6 This projection assumes a doubling of CO_2 equivalent in the atmosphere.
7 Canadian Global Climate Model (CGCM) 2, Canadian Climate Centre for Modelling and Analysis, University of Victoria.
8 A. Markam and J. Malcolm, Global Warming and Terrestrial Biodiversity Decline, World Wildlife Fund, 2000.
9 Intergovernmental Panel on Climate Change, "Summary for Policy Makers, Second Assessment Report, Working Group III, 1995.
10 Carbon dioxide, Methane, Nitrous oxides, Perfluorocarbons, Hydrofluorocarbons, Perfluorocarbons and Sulfur Hexafluoride.
11 Economic and Social Dimensions of Climate Change: Contribution of Working Group III to the Second Assessment of the Intergovernmental Panel on Climate Change.
12 International Energy Agency, Energy Environment Update, No. 6, August 1997.
13 National Climate Change Project, Analysis and Modelling Group, "Canada's Emissions Outlook: An Update", Chapter 4. December 1999.
14 Environment Canada, Canada's Greenhouse Gas Inventory, 1997 Emissions and Removals with Trends. April, 1999.
15 National Climate Change Project, Analysis and Modelling Group, "Canada's Emissions Outlook: An Update", Chapter 4. December 1999.
16 Organization for Economic Co-operation and Development, "Policy Brief: Economic Survey of Canada, 2000." September 2000.
17 Pembina Institute, "Provincial Government Performance on Climate Change: 2000." October 4, 2000.
18 Auditor General of Canada, Report of the Commissioner of the Environment and Sustainable Development, 1998. Chapter 3.
19 Government of Canada, Supporting Documentation, Submission filed to the United States Environmental Protection Agency regarding "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone: Proposed Rule", March 1998.
20 Environment Canada, op.cit.
21 C. Rolfe, "Sinking the Climate: Will Canada's Approach to Forests and Land Use sink the Kyoto Protocol? September 2000; Greenpeace International, "Cheating the Kyoto Protocol: Loopholes and Environmental Effectiveness", August 2000.
22 See Rolfe, op. cit.

23 Summary for Policymakers: Land Use, Land Use Change and Forestry: A Special Report of the Intergovernmental Panel on Climate Change, 2000.
24 Sinks Table Options Paper, as quoted in CANet sinks position.
25 B. Schlamandinger and G. Marland, Land Use and Global Climate Change: Forests, Land Management and the Kyoto Protocol. Prepared for the Pew Centre on Global Climate Change, June 2000.
26 See, for example, Paper No. 3: Position Paper on Articles 3.3 and 3.4: LULUCF (Brazil on behalf of the Group of 77 and China), as contained in UNFCCC SBSTA, Methodological Issues: Land Use, Land Use Change and Forestry, September 13, 2000.

RESOURCES AND REFERENCES

- *COP 6 in The Hague, 13-24 November, 2000:* http://cop6.unfccc.int/media/index.html
- *The United Nations Framework Convention on Climate Change, 1992 – Full Text:* http://www.unfccc.int/resource/convkp.html
- *The Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997 – full text:* http://www.unfccc.int/resource/convkp.html
- *World Meteorological Organization:* http://www.wmo.ch
- *Intergovernmental Panel on Climate Change:* http://www.ipcc.ch/
- *International Institute for Sustainable Development:* http://iisd1.iisd.ca/climatechange.htm
- *The Climate Action Network:* http://www.igc.org/climate/Eco.html
- *Clean Air Website:* http://www.clickforcleanair.org

GLOSSARY

Additionality: The Kyoto Protocol requirement that reductions generated by CDM or JI projects be "additional" to those which would have occurred in the absence of the project.

Afforestation: One of three carbon sequestration activities Parties may use to meet their emission reduction commitments under the Protocol, defined by the IPCC as the planting of new forests on lands that historically have not contained forests.

Annex I Parties: Industrialized countries and economies in transition (Eastern Europe and the former Soviet Union) who are Parties to the Framework Convention on Climate Change.

Annex B Parties: Industrialized countries and economies in transition having adopted legally binding emission reduction commitments under the Kyoto Protocol.

Baselines: A hypothetical reference case, or "business as usual" projection of emissions before an emission reduction project or activity.

Capacity Building: Efforts to develop organizational, managerial and technical skills to support technology transfer in developing countries.

Clean Development Mechanism (CDM): Mechanism established under Article12 of the Kyoto Protocol which provides for the transfer of emission reductions between Annex I and non-Annex I countries.

Conference of the Parties: The "supreme body" governing the Framework Convention, composed of all Parties to the agreement.

Deforestation: Generally defined as the conversion of forest land to non-forest land.

Entry-into-force: International agreements enter into force when specified conditions have been met. The Kyoto Protocol will enter into force when 55% of Parties representing 55% of Annex I emissions ratify the agreement.

Financial mechanism: Established under the Framework Convention to transfer funds and technologies to developing countries, the Global Environment Facility is "operating" this mechanism on an interim basis.

Fungibility: The extent to which credits generated from any of the Kyoto Mechanisms may be traded in the international emissions trading market.

G-77/China: Negotiating bloc composed of over 130 developing (or "non-Annex I") countries.

Hot air: Concern that some governments will be able to meet their commitment targets with minimal effort and could then flood the market for emissions credits, reducing the incentive for other countries to cut their own emissions.

International Emissions Trading: Mechanism established under Article 17 of the Kyoto Protocol which provides for the transfer of emission rights between two Annex I parties.

Joint Implementation (JI): Mechanism established under Article 6 of the Kyoto Protocol which provides for the transfer of emission reductions between two Annex I parties through particular projects.

Kyoto Mechanisms: Three Mechanisms established under the Kyoto Protocol to help Annex I Parties meet their commitments thorough non-domestic activities.

Liability: The rules by which responsibility is shared between Parties for any failure of projects to deliver expected emission reductions.

Non-Annex I Parties: Developing country Parties under the Convention.

Party: Any country having ratified the Framework Convention on Climate Change.

Ratification: The process by which countries agree to be legally bound by an international agreement. Canada generally ratifies agreements by Cabinet approval.

Reforestation: One of three land use activities Parties may use to meet their emission reduction commitments, defined by the IPCC as planting of forests on lands which have previously contained forests but have been converted to some other use.

Sequestration ("sinks"): The notion that developed countries can meet part of their emission reduction commitments by enhancing the storage of carbon in the biosphere through certain land use change and forestry activities.

Supplementarity: The Kyoto Protocol requirement that use of the Kyoto Mechanisms be "supplemental" to domestic action.

Technology Transfer: The Framework Convention requirement that developed countries provide access to advanced climate-friendly technologies to developing countries.

Umbrella Group: Negotiating bloc composed of Canada, the United States, Japan, Norway, Australia, New Zealand, Iceland, Russia and the Ukraine.

Verifiability: Series of requirements aimed at ensuring that emission reduction activities are "real and measurable".